



CeMEAI

CEPID - Center for Mathematical
Sciences Applied to Industry

Annual Report CEPID-CeMEAI- 2023 – 2024

Project Title: Center for Mathematical Sciences Applied to Industry

Coordinator: José Alberto Cuminato

Host Institution: ICMC-USP - São Carlos

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1. Introduction and Summary of the Initial Plan

1.1 INTRODUCTION

This report describes the activities of the Center for Mathematical Sciences Applied to Industry (RIDC-CeMEAI) in the period July/2023 through June/2024. In this period the eleventh year of the project, most of the activities promised in the initial proposal have been implemented. New proposals, whether from industry or funding agencies, have been taken on board. The CPA-IA IARA - Artificial Intelligence in the Remaking of Urban Environments is being implemented, as has the new CPA proposal jointly with UNICAMP, UNESP and SENAI, the CDII. The ICMC EMBRAPII Unit was approved and we expect new projects resulting from it. The charging (tarifação) of the Cluster is working and CeMEAI already has a client using it. The Education and Knowledge Dissemination coordination has been very active as we shall detail in the main body of the report. The project manager has been working full time to increase contacts with industries resulting in new projects and collaborations. In section 1.3 of this report, we present a summary of the progress made during the period. Table 1.1 brings a quantitative summary of the Center's academic output. In the main body of this report, we shall present in detail the activities of the RIDC-CeMEAI for each of its three main research groups, including projects with industry that have been contracted during this reporting period.

1.2 SUMMARY FOR THE 2018 PROPOSAL AND ITS GOALS

The State of São Paulo concentrates a large part of the industry in Brazil and also many of the best academic research institutions. However, mainly due to a lack of coordination, the industry/academia interaction has not yet grown in the region. Due to the nature, complexity, and scale of the activities proposed in this project, we expect the Center will need some time to mature and accomplish the proposed schedule. In addition, the very nature of the Center is interdisciplinary as it involves groups in several areas of applied mathematics, statistics, and computer science. This is very important for the success of the Center because the problems coming from the industry are very often multidisciplinary. Another long-term objective results from the fact that Brazil has a severe shortage of human resources trained to work on industrial/government problems. Our mathematical sciences courses (undergraduate and graduate) nowadays focus on the training of students to be good academics and not on working alongside multidisciplinary teams for practical problem-solving. On the other hand, the industry in itself is not used to seeking help from academia, especially from mathematicians. We are aware that all of these difficulties are very complex and we are not going to solve all of them by starting this center. However, we do believe that by starting this Center we can enhance the usage of mathematical techniques by the industrial sector and disseminate this practice.

The justification for the renewal of the proposed project of RIDC-CeMEAI lies in the fact that despite the use of mathematics by industries in Brazil being a novelty, RIDC-CeMEAI managed in 5 years to attract a considerable number of projects, and is changing the scenario described in the previous paragraph. In the beginning, the Center's activity was not known by companies, so we had to make a lot of effort to get projects from the industry. Now, this is starting to change and many times we get contact from industries willing to work with us. So the continuation of the funding from Fapesp will be crucial to solidify this interest and make the Center a new thrust for the development of São Paulo State. The extension of the Center will make it stronger and will help to accomplish its mission set forth in the initial plan.

1. The RIDC-CeMEAI will continue to be a Center for the production and diffusion of knowledge in applied mathematical sciences, identifying potential problems and areas that require attention, enabling the interaction between researchers and industries in these areas. More specifically, the RIDC-CeMEAI will promote contact between experts in the mathematical sciences and entrepreneurs, industry workers, researchers, and practitioners from other fields of knowledge.
2. The RIDC-CeMEAI will continue to provide an adequate environment and structure for the development of applied research to the whole industrial sector including healthcare, financial, agriculture, and trade.
3. The RIDC-CeMEAI has been working towards building a solid and lasting multidisciplinary community by training students to become able to collaborate in solving practical problems and to be prepared to replicate the center's philosophy in other regions of the country.
4. The RIDC-CeMEAI is hard-working toward becoming an international reference for successful cooperation between academia and industry/government in mathematical sciences.



1.3 SUMMARY OF ACHIEVEMENTS JULY 2023 – JUNE 2024

A primary objective of this project is to produce a virtuous cycle going from high-level mathematical research to applications and vice versa.

During the period of this report, 278 papers in scientific journals have been published by the 36 principal and 90 associate investigators of CeMEAI.

In the present report, 6 projects that describe collaborations with industry as well as with public and private “non-Mathematical” institutions are reported. Most of these projects have already resulted in scientific publications, as is also the case of the PhD Thesis being advised by members of CeMEAI, in the period.

Diffusion and Educational activities have been exponentially incremented in this period, as can be verified in the sections: diffusion and short courses, Mathematical Clinic activities, production of videos, support for seminars highlighting applications and surprising facts of Mathematics, press releases and movie screening. See Table 1.1

The MBA on Data Science is on its fifth edition with 218 students, more than 700 students have already completed the MBA in the first four editions and the sixth edition is planned for 2025.

TABLE 1.1: PROJECT MAIN ACTIVITIES - SUMMARY 2023-2024

Activity	Total
Students and Visiting Scholars	
Ongoing & Completed Post-doctorate	101
Ongoing Ph.D's	230
Ongoing Masters	180
Completed Ph. D's	41
Completed Masters	55
Research	
Books	4
Book Chapters	26
Papers	278
Papers in Conferences	108
Awards	23
Innovation and Technology Transfer (KTT)	
Meetings with Partners	398
Education and Knowledge Diffusion	
Videos Produced	72
Video Views	26.847
Press Releases	61
Website Views	31.614



1.4 AWARDS

1. 2023 The 23rd International Conference on Computational Science and Its Applications -Best paper - Main Track - “Robust Seeded Image Segmentation Using Adaptive Label Propagation and Deep Learning-Based Contour Orientation”. Aldimir José Bruzadin, Marilaine Colnago, Rogério Galante Negri and **Wallace Casaca**
<https://cemeai.icmc.usp.br/pesquisador-do-cemeai-conquista-premio-internacional-na-area-de-cien>
2. 2024 **José Mario Martínez** and **Claudia Sagastizábal** were nominated SIAM (Society for Industrial and Applied Mathematics) Fellows
[https://www.siam.org/programs-initiatives/prizes-awards/fellows-program/fellows-directory/?page=1&keywords =](https://www.siam.org/programs-initiatives/prizes-awards/fellows-program/fellows-directory/?page=1&keywords=)
3. 2024 Kepler Award - SBMAC “Optimized delay of the second Covid-19 vaccine dose reduces ICU admissions”. **Claudia Sagastizábal, Paulo J. S. Silva, Luis Gustavo Nonato and Tiago Pereira**
<https://www.sbmac.org.br/premio-kepler/>
4. 2024 Breno Livio Silva de Almeida, João Fernando Marar de Inteligência Artificial Award
 Supervisor: **André C. P. L. F. de Carvalho**
5. 2024 Saulo Martiello Mastelini, Best PhD Thesis CTD-SBC 2024 (with João Gama), Sociedade Brasileira de Computação (SBC)
 Supervisor: **André C. P. L. F. de Carvalho**
6. 2024 Edresson Casanova Best PhD Dissertation Award at PROPOR 2024, International Conference on Computational Processing of Portuguese (PROPOR 2024)
 Supervisor: **Moacir Antonelli Ponti**
7. 2022 Top 2% World Scientist., Univ. of Stanford and Plos Biology.
 DOI: 10.17632/btchxktzyw.3.
 Member: **Anderson Rezende Rocha** (single year)
 Member: **André Carlos Ponce de Leon Ferreira de Carvalho** (career and single year)
 Member: **Fábio Gagliardi Cozman** (career and single year)
 Member: **João Paulo Papa** (career and single year)
 Member: **José Mario Martinez Perez** (career and single year)
 Member: **Liang Zhao** (career)
 Member: **Moacir Ponti** (single year)
 Member: **Rodolfo Ipolito Meneguette** (single year)
8. 2024 Top 52 Computer Scientists in Brasil (D-index > 30).
<https://research.com/scientists-rankings/computer-science/br>
 Member: **Anderson Rezende Rocha** (17th)
 Member: **André Carlos Ponce de Leon Ferreira de Carvalho** (13rd)
 Member: **Ernesto G. Birgin** (38th)
 Member: **Francisco Aparecido Rodrigues** (33td)



Member: **João Paulo Papa** (12nd)

Member: **José Mario Martínez Perez** (8th)

9. 2024 Top 28 Mathematics Scientists in Brasil (D-index > 30).

<https://research.com/scientists-rankings/mathematics/br>

Member: **Claudia Sagastizábal** (17th)

Member: **Ernesto G. Birgin** (15th)

Member: **José Mario Martínez Perez** (2nd)

10. 2024 Top 33 Engineering and Technology Scientists in Brasil (D-index > 30).

<https://research.com/scientists-rankings/engineering-and-technology/br>

Member: **Reinaldo Morabito** (7th)



2. Research Team

2.1 COORDINATION

- **Center Director:** José Alberto Cuminato - ICMC-USP
- **Deputy Director:** José Mario Martinez Perez - IMECC-UNICAMP
- **Education and Knowledge Dissemination Coordinator:** Lúcio Tunes dos Santos - IMECC- UNICAMP
- **Technology Transfer Coordinator:** Francisco Louzada Neto - ICMC-USP
- **RIDC Executive Manager:** Maria Fernanda Marreta -ICMC- USP
- **Manager of Education and Dissemination of Knowledge:** Gustavo Blengini Faria - ICMC-USP

2.2 PRINCIPAL INVESTIGATORS

Optimization and Operations research

Roberto **Andreani** (IMECC-UNICAMP), Ernesto G. **Birgin** (USP), Maicon Ribeiro **Correa** (IMECC-UNICAMP), Carlile **Lavor** (IMECC-UNICAMP), José Mario **Martínez Perez** (IMECC-UNICAMP), Pedro Augusto **Munari Junior** (UFSCar), Débora P. **Ronconi** (USP), Claudia Alejandra **Sagastizábal** (IMECC-UNICAMP), Sandra A. **Santos** (Unicamp), Maristela Oliveira dos **Santos** (ICMC-USP), Lucio Tunes dos **Santos** (IMECC-UNICAMP), Geraldo Nunes **Silva** (UNESP), Paulo J. S. **Silva** (IMECC-UNICAMPp), Maria do **Socorro Rangel** (UNESP) and Franklina M. B. **Toledo** (ICMC-USP).

Fluid Dynamics

João Luiz F. **Azevedo** (IAE), Gustavo Carlos **Buscaglia** (ICMC-USP), Antonio **Castelo Filho** (ICMC-USP), José Alberto **Cuminato** (ICMC-USP), Cassio M. **Oishi** (UNESP), Tiago **Pereira da Silva** (ICMC-USP), Fabrício Simeoni de **Sousa** (ICMC-USP), Leandro Franco de **Souza** (ICMC-USP)

Statistics and Data Sciences

Vicente Garibay **Cancho** (ICMC-USP), Kalinka Regina Lucas Jaquie **Castelo Branco** (ICMC-USP), Nuno Manuel Morgadinho dos Santos **Coelho** (FDRP-USP), Alexandre Cláudio Bottazo **Delbem** (ICMC-USP), Nikolai V. **Kolev** (IME-USP), Zhao **Liang** (FFCLRP-USP), Francisco **Louzada** (ICMC-USP), João Paulo **Papa** (UNESP),

Francisco Aparecido **Rodrigues** (ICMC-USP), Mariá Cristina Vasconcelos Nascimento **Rosset** (UNIFESP), Jó **Ueyama** (ICMC-USP) Adenilso da Silva **Simão** (ICMC-USP) and Julio **Stern** (IME-USP).

2.3 ASSOCIATE INVESTIGATORS

Optimization and Operations research

Marina **Andretta** (USP), Silvio A. de **Araujo**(UNESP), Victor Claudio Bento de **Camargo** (UFSCar) Eduardo Fontoura **Costa** (ICMC-USP), Aline Aparecida de Souza **Leão** (USP), Reinaldo **Morabito Neto** UFSCar, Valeriano Antunes de **Oliveira** (UNESP), Vitória **Pureza** (UFSCar), Helenice de Oliveira Florentino **Silva** (UNESP) and Edilaine Martins **Soler** (UNESP).

Fluid Dynamics

Roberto F. **Ausas** (ICMC-USP), Analice Costacurta **Brandi** (UNESP), André Valdetaro Gomes **Cavaleri** (ITA), Livia Souza Freire **Grión** (ICMC-USP), Adolfo Gomes **Marto** (IAE), José Antonio **Rabi** (FZEA-USP), Maria Luísa Colluci da Costa **Reis** (IAE), Roberto Gil Annes da **Silva** (ITA), Edson Cezar **Wendland** (EESC-USP) and William Roberto **Wolf** (FEM-UNICAMP).

Statistics and Data Sciences

Carlos **Affonso** (UNESP, Itapeva), Marinho G. **Andrade Filho** (ICMC-USP), Walther **Azzolini Júnior** (EESC-USP), Dennis **Brandão** (EESC-USP), Wallace Correa de Oliveira **Casaca** (UNESP), André C P L F de **Carvalho** (ICMC-USP), Katiane Silva **Conceição** (ICMC-USP), Fabio Gagliardi **Cozman** (EP-USP), Mariana **Curi** (ICMC-USP), Ronaldo **Dias** (IMECC-UNICAMP), Carlos A. R. **Diniz** (UFSCar), Júlio César **Estrella** (ICMC-USP), André **Fujita** (IME-USP), Filippo **Ghiglieno** (UFSCar), Oilson Alberto **Gonzatto Junior** (ICMC-USP), Jorge Luis Bazan **Guzman** (ICMC-USP), Seiji **Isotani**(ICMC-USP), Bruno **Kimura** (UNIFESP), Marcelo de Souza **Lauretto** (EACH-USP), Ana Carolina **Lorena** (ITA), Ricardo Marcondes **Marcacini** (ICMC-USP), Marcello Augusto Faraco de **Medeiros** (EESC-USP), Eduardo Mario **Mendonço** (EESC-USP), Rodolfo Ipolito **Meneguetto** (ICMC-USP), Diego Carvalho do **Nascimento** (UDA-Chile), Luis Gustavo **Nonato** (ICMC-USP), Cibele Maria Russo **Novelli** (ICMC-USP), Krerley Irraciel Martins **Oliveira** (UFAL), Moacir de Miranda **Oliveira Junior** (FEA-USP), Afonso **Paiva Neto** (ICMC-USP), Gleici da Silva Castro **Perdoná** (FMRP-USP), Thomas Kaue Dal Maso **Peron** (ICMC-USP), Moacir Antonelli **Ponti** (ICMC-USP), Pedro Luiz **Ramos** (PUC-Chile) Dimas Betioli **Ribeiro** (ITA), Evandro Marcos Saidel **Ribeiro** (USP), Laura Leticia Ramos **Rifo** (IMECC-UNICAMP), Ricardo Araújo **Rios** (UFBA), Tatiane Nogueira **Rios** (UFBA), Anderson de Resende **Rocha** (IC-UNICAMP), Oscar Mauricio Hernandez **Rodriguez** (EESC-USP), André Luis Debiaso **Rossi** UNESP, João Carlos **Setubal** (IQ-USP), Albérico Borges Ferreira da **Silva** (IQSC-USP), Paulo Henrique Ferreira da **Silva** (UFBA), Diego Furtado **Silva** (ICMC-USP), Secundino **Soares Filho** (FEEC-UNICAMP), Anderson Luiz Ara **Souza** (UFPR) Adriano K. **Suzuki** (ICMC-USP), Ali **Tahzibi** (ICMC-USP), Renato **Tinós** (FFCLRP-USP) and Claudio Fabiano Motta **Toledo** (ICMC-USP) and Vera Lucia Damasceno **Tomazella** (UFSCar).

2.4 COMPLETED AND ONGOING POST-DOCTORATE PROJECTS

Ongoing

1. Adriano Rivolli da Silva. Start: 2023. ICMC-USP. Funding: TJ-SP. Supervisor: André Carlos Ponce de Leon Ferreira de Carvalho



2. Ahmad Almazloum. Start: 2024. UNICAMP. Funding: Samsung Eletrônica da Amazônia. Supervisor: Anderson de Rezende Rocha
3. Alessandra Marli Maria Morais Gouveia. Start: 2023. ITA. Funding: FAPESP. Supervisor: Mariá Cristina Vasconcelos Nascimento Rosset
4. Alex Marino Gonçalves de Almeida. Start: 2022. ICMC-USP. Funding: TJ-SP. Supervisor: André Carlos Ponce de Leon Ferreira de Carvalho
5. Amir Jalilifard. Start: 2024. UNICAMP. Supervisor: Anderson de Rezende Rocha
6. Anderson Paulo Avila Santos. Start: 2024. ICMC-USP. Funding: CNPq. Supervisor: André Carlos Ponce de Leon Ferreira de Carvalho
7. Angelica Caseri. Start: 2022. ICMC-USP. Supervisor: Francisco Aparecido Rodrigues
8. Bernardo Luiz Rocha Ribeiro. Start: 2023. UNICAMP. Funding: FAPESP. Supervisor: William Roberto Wolf
9. Bernardo Nunes Gonçalves. Start: 2020. EP-USP. Funding: FAPESP. Supervisor: Fabio Gagliardi Cozman
10. Caetano Mazzoni Ranieri. Start: 2021. ICMC-USP. Funding: FAPESP. Supervisor: Jó Ueyama
11. Carolina Bertuzzi. Start: 2023. ICMC-USP. Supervisor: Francisco Aparecido Rodrigues
12. Cláudia Aline Azevedo dos Santos Mesquita. Start: 2023. ICMC-USP. Supervisor: Katiane Silva Conceição
13. Claudio Filipi Gonçalves dos Santos. Start: 2023. UNESP. Supervisor: João Paulo Papa
14. Daiane de Souza Santos. Start: 2023. ICMC-USP. Funding: FAPESP. Supervisor: Vicente Garibay Cancho
15. Daniel Oliveira Dantas. Start: 2021. IME-USP. Funding: PRP-USP. Supervisor: André Fujita
16. Daniel Samuel Jodas. Start: 2024. UNESP. Funding: Petrobras. Supervisor: João Paulo Papa
17. Daniela Lopes Freire. Start: 2020. ICMC-USP. Funding: TJ-SP. Supervisor: André Carlos Ponce de Leon Ferreira de Carvalho
18. Davi Pereira dos Santos. Start: 2022. ICMC-USP. Funding: FUSP. Supervisor: André Carlos Ponce de Leon Ferreira de Carvalho
19. Didier Vega-Oliveros. Start: 2020. UNICAMP. Funding: FAPESP. Supervisor: Anderson de Rezende Rocha
20. Diego Trindade de Souza. Start: 2020. IME-USP. Funding: PRP-USP. Supervisor: André Fujita
21. Diogo Henrique da Silva. Start: 2021. ICMC-USP. Funding: FAPESP. Supervisor: Francisco Aparecido Rodrigues
22. Douglas Coates. Start: 2023. ICMC-USP. Funding: FAPESP. Supervisor: Ali Tahzibi
23. Douglas Donizeti de Castilho Braz. Start: 2022. ICMC-USP. Funding: Volt Robotics. Supervisor: André Carlos Ponce de Leon Ferreira de Carvalho



24. Douglas Nogueira do Nascimento. Start: 2024. ICMC-USP. Funding: FAPESP. Supervisor: Franklina Maria Bragion de Toledo
25. Douglas Rodrigues. Start: 2023. UNESP. Funding: FAPESP. Supervisor: João Paulo Papa
26. Edilson Machado de Assis. Start: 2024. UNESP. Funding: Petrobras. Supervisor: João Paulo Papa
27. Eduardo Ramos. Start: 2020. ICMC-USP. Supervisor: Francisco Louzada Neto
28. Ellen Souza. Start: 2020. ICMC-USP. Funding: Câmara dos Deputados. Supervisor: André Carlos Ponce de Leon Ferreira de Carvalho
29. Emely Pujolli da Silva. Start: 2022. UNICAMP. Funding: Samsung Eletrônica da Amazônia. Supervisor: Anderson de Rezende Rocha
30. Fabíola S. F. Pereira. Start: 2018. ICMC-USP. Funding: Algar Telecom. Supervisor: André Carlos Ponce de Leon Ferreira de Carvalho
31. Farney Coutinho Moreira. Start: 2021. ITA. Funding: FAPESP. Supervisor: Joao Luiz Filgueiras de Azevedo
32. Gabriel Cirac. Start: 2021. UNICAMP. Funding: Shell Inc. Supervisor: Anderson de Rezende Rocha
33. Geovane Augusto Haveroth. Start: 2022. UNICAMP. Funding: FAPESP. Supervisor: Maicon Ribeiro Correa
34. Graccyela Salcedo. Start: 2022. ICMC-USP. Funding: FAPESP. Supervisor: Ali Tahzibi
35. Guilherme Brandão Martins. Start: 2024. UNESP. Funding: Petrobras. Supervisor: João Paulo Papa
36. Guilherme Augusto Marabuzzi Clerice. Start: 2024. UNESP. Supervisor: Helenice de Oliveira Florentino Silva
37. Guilherme Freire Roberto. Start: 2024. ICMC-USP. Supervisor: André Carlos Ponce de Leon Ferreira de Carvalho
38. Gustavo Bochio. Start: 2020. ICMC-USP. Supervisor: Francisco Louzada Neto
39. HUGO ALBERTO CASTILLO SANCHEZ. Start: 2021. ICMC-USP. Funding: FAPESP. Supervisor: Antonio Castelo Filho
40. Hugo Felipe da Silva Lui. Start: 2024. UNICAMP. Funding: Air Force Office of Scientific Research. Supervisor: William Roberto Wolf
41. Igor Albuquerque Maia. Start: 2023. ITA. Funding: FAPESP. Supervisor: André Valdetaro Gomes Cavalieri.
42. Igor Leonardo Oliveira Bastos. Start: 2024. UNICAMP. Supervisor: Anderson de Rezende Rocha
43. Jean Helder Marques Ribeiro. Start: 2023. UNICAMP. Funding: FAPESP. Supervisor: William Roberto Wolf
44. João Luiz Junho Pereira. Start: 2022. ITA. Funding: FAPESP. Supervisor: Ana Carolina Lorena
45. José Antonio Tumialán. Start: 2024. EESC-USP. Funding: FAFQ. Supervisor: Oscar Mauricio Hernandez Rodriguez



46. Jose Augusto Lustosa Filho. Start: 2022. UNICAMP. Funding: Shell Inc. Supervisor: Anderson de Rezende Rocha
47. Kamyla Maria Ferreira. Start: 2022. UFSCar. Funding: FAPESP. Supervisor: Pedro Augusto Munari Junior
48. Kuruvilla Joseph Abraham. Start: 2023. IEA-USP. Supervisor: Alexandre Cláudio Botazzo Delbem
49. Leandro Aparecido Passos Júnior. Start: 2023. UNESP. Funding: FAPESP. Supervisor: João Paulo Papa
50. Luis Felipe Acuña Alegria. Start: 2023. EESC-USP. Funding: FUSP. Supervisor: Oscar Mauricio Hernandez Rodriguez
51. Marcelo Meireles dos Santos. Start: 2021. IME-USP. Funding: PRP-USP. Supervisor: André Fujita
52. Marcio Dias. Start: 2021. ICMC-USP. Funding: PRP-USP. Supervisor: André Carlos Ponce de Leon Ferreira de Carvalho
53. Marcos Cleison Silva Santana. Start: 2022. UNESP. Funding: SpotOn. Supervisor: João Paulo Papa
54. Marcos Roberto Fortulan. Start: 2020. EESC-USP. Funding: FIPAI. Supervisor: Oscar Mauricio Hernandez Rodriguez
55. Marcos Severo. Start: 2021. IME-USP. Funding: PRP-USP. Supervisor: André Fujita
56. Marlon Mauricio Hernández Cely. Start: 2018. EESC-USP. Funding: FUNCAMP. Supervisor: Oscar Mauricio Hernandez Rodriguez
57. Matheus Palmero Silva. Start: 2023. ICMC-USP. Funding: FAPESP. Supervisor: Francisco Aparecido Rodrigues
58. Michael Oliveira da Cruz. Start: 2024. UNICAMP. Funding: Shell Inc. Supervisor: Anderson de Rezende Rocha
59. Murillo Guimarães Carneiro. Start: 2023. FFCLRP-USP. Funding: FUSP. Supervisor: Zhao Liang
60. Murilo Garcia de Matos Amaral. Start: 2022. UNICAMP. Funding: Shell Inc. Supervisor: Anderson de Rezende Rocha
61. Nádia Félix Felipe da Silva. Start: 2020. ICMC-USP. Funding: Câmara dos Deputados. Supervisor: André Carlos Ponce de Leon Ferreira de Carvalho
62. Nastaran Lotfi. Start: 2021. ICMC-USP. Funding: FAPESP. Supervisor: Francisco Aparecido Rodrigues
63. Nubia Regina Ventura. Start: 2024. ICMC-USP. Supervisor: André Carlos Ponce de Leon Ferreira de Carvalho
64. Oilson Alberto Gonzatto Junior. Start: 2021. ICMC-USP. Supervisor: Francisco Louzada Neto
65. Oscar Cuadros Linares. Start: 2022. UNICAMP. Funding: Shell Inc. Supervisor: Anderson de Rezende Rocha
66. Pablo Giovanni Silva Carvalho. Start: 2023. ICMC-USP. Funding: FAPESP. Supervisor: Fabrício Simeoni de Sousa



67. Paula Sampaio Meirelles. Start: 2024. UNICAMP. Funding: Shell Inc. Supervisor: Anderson de Rezende Rocha
68. Paulo Aristarco Pagliosa. Start: 2023. UFMS. Supervisor: Afonso Paiva Neto
69. Paulo Pirozelli Almeida Silva. Start: 2023. EP-USP. Funding: FAPESP. Supervisor: Fabio Gagliardi Cozman
70. Rafael Gonçalves Pires. Start: 2024. UNESP. Funding: Petrobras. Supervisor: João Paulo Papa
71. Renato Fuzaro Miotto. Start: 2022. UNICAMP. Funding: FAPESP. Supervisor: William Roberto Wolf
72. Robson Bonidia. Start: 2024. ICMC-USP. Funding: The International Development Research Centre. Supervisor: André Carlos Ponce de Leon Ferreira de Carvalho
73. Rômulo Brito da Silva. Start: 2023. UNESP. Funding: CNPq. Supervisor: Antonio Castelo Filho
74. Rubens Augusto Amaro Junior. Start: 2022. ICMC-USP. Funding: FAPESP. Supervisor: Fabrício Simeoni de Sousa
75. Tarcísio Costa Déda Oliveira. Start: 2024. UNICAMP. Supervisor: William Roberto Wolf
76. Thiago Ramos. Start: 2024. ICMC-USP. Funding: FAPESP. Supervisor: Luis Gustavo Nonato
77. Thomaz Marques Sena. Start: 2024. UNESP. Funding: FAPESP. Supervisor: João Paulo Papa
78. Victor Hugo Barella. Start: 2024. ICMC-USP. Funding: FAPESP. Supervisor: Luis Gustavo Nonato
79. Vinícius Rosa Máximo. Start: 2023. Unifesp. Supervisor: Mariá Cristina Vasconcelos Nascimento Rosset
80. Waqar Hassan. Start: 2024. ICMC-USP. Funding: FAPESP. Supervisor: Luis Gustavo Nonato
81. Williams Jesus Lopez Yanez. Start: 2022. UNICAMP. Funding: FAPESP. Supervisor: Claudia Alejandra Sagastizábal
82. Willy Alves de Oliveira Soler. Start: 2024. ICMC-USP. Funding: FAPESP. Supervisor: Maristela Oliveira dos Santos



Completed in the period

1. Antone dos Santos Benedito. 2023. UNESP. Funding: FAPESP. Supervisor: Helenice de Oliveira Florentino Silva
2. Danilo Rodrigues de Souza. 2024. EP-USP. Funding: FAPESP. Supervisor: Ernesto Julián Goldberg Birgin
3. Erikson Freitas de Morais. 2024. UNICAMP. Funding: . Supervisor: Anderson de Rezende Rocha
4. Fabio Santiago. 2023. ITA. Funding: CAPES. Supervisor: Ana Carolina Lorena
5. Jorge Yoshio Kanda. 2023. ICMC-USP. Funding: . Supervisor: André Carlos Ponce de Leon Ferreira de Carvalho
6. José Angel Riveaux Merino. 2024. EP-USP. Funding: FAPESP. Supervisor: Ernesto Julián Goldberg Birgin
7. José Angel Riveaux Meriño. 2023. EP-USP. Funding: FAPESP. Supervisor: Débora Pretti Ronconi
8. Jovani de Souza. 2023. UNESP. Supervisor: Helenice de Oliveira Florentino Silva
9. Luis Claudio Sugi Afonso. 2023. UNESP. Funding: . Supervisor: João Paulo Papa
10. Luis Hideo Vasconcelos Nakamura. 2024. ICMC-USP. Funding: . Supervisor: Rodolfo Ipolito Meneguette
11. Manuel Castro Avila. 2024. UNICAMP. Funding: Shell Inc. Supervisor: Anderson de Rezende Rocha
12. Marcos Cirne. 2023. UNICAMP. Funding: Motorola Mobility. Supervisor: Anderson de Rezende Rocha
13. Michael Macedo Diniz. 2023. UNICAMP. Funding: Shell Inc. Supervisor: Anderson de Rezende Rocha
14. Olushina Olawale Awe. 2023. UNICAMP. Funding: FAPESP. Supervisor: Ronaldo Dias
15. Pedro Ribeiro Mendes Jr. 2024. UNICAMP. Funding: Shell Inc. Supervisor: Anderson de Rezende Rocha
16. Rafael de Oliveira Werneck. 2024. UNICAMP. Funding: Shell Inc. Supervisor: Anderson de Rezende Rocha
17. Valdemar Abrão Pedro Anastácio. 2024. ICMC-USP. Funding: . Supervisor: André Carlos Ponce de Leon Ferreira de Carvalho
18. Veridiana Domingos Cordeiro. 2023. EP-USP. Funding: FAPESP. Supervisor: Fabio Gagliardi Cozman
19. Víctor Eduardo Martínez Abaunza. 2023. UNICAMP. Funding: FAPESP. Supervisor: Anderson de Rezende Rocha



Table 2.1 displays the Post-Doc grants awarded to members of the project during the report period, discriminated by the funding agency. The purpose of this table is to give an idea of the amount of grants awarded to CeMEAI from other funds than those of the project.

TABLE 2.1: POST-DOC GRANTS AWARDED (P) - PUBLIC FUNDS - (Pr) - PRIVATE FUNDS

Funding	Completed	Ongoing
Fapesp (P)	7	31
Capes (P)	1	0
CNPq (P)	0	2
Petrobras (Pr)	0	4
TJ (Pr)	0	3
Shell (Pr)	4	6
Câmara dos Deputados (Pr)	0	2
Volt Robotics (Pr)	0	1
Algar Telecom (Pr)	0	1
FUSP/PRP USP (Pr) (P)	0	8
Samsung (Pr) (P)	0	2
Air Force Office of Scientific Research (Pr)	0	1
FIPAI (Pr) (P)	0	1
FUNCAMP (Pr) (P)	0	1
Motorola (Pr)	1	1
SpotOn (Pr)	0	1

3. High Impact Research and Projects

3.1 INTRODUCTION OLD

This Chapter describes CeMEAI's research projects of greatest impact either financially, scientifically or socially. Other projects can be found in the section **Projects** of the CeMEAI's website.

(<http://www.cemeai.icmc.usp.br/projetos>).

We start with the impact of CeMEAI's publications, **Table 3.1** shows the current h-index of the Center's publications since the beginning of the project.

TABLE 3.1: H-INDEX (2013-2024)

Site	h-index	Citations
Google Scholar	101	59.652

Google Scholar: <https://scholar.google.com.br/citations?user=qxiSYp4AAAAJ&hl=pt-BR>

3.2 HIGH IMPACT PUBLICATIONS

3.2.1 MOST CITED PAPERS 2023-2024

• **Boldfaced names** are members of CeMEAI

- L. A. Passos, D. Jodas, K. A. P. Costa, L. A. Souza Júnior, D. Rodrigues, J. Del Ser, D. Camacho, and **J. P. Papa**. "A review of deep learning-based approaches for deepfake content detection". In: Expert Systems 41.8 (Feb. 2024). ISSN: 1468-0394.
DOI: 10.1111/exsy.13570.
35 (Google Scholar) 1 (Web of Science)
- J. P. Cardenuto, J. Yang, R. Padilha, R. Wan, D. Moreira, H. Li, S. Wang, F. Andaló, S. Marcel, and **A. Rocha**. "The Age of Synthetic Realities: Challenges and Opportunities". In: APSIPA Transactions on Signal and Information Processing 12.1 (2023). ISSN: 2048-7703.
DOI: 10.1561/116.00000138.
19 (Google Scholar)

- **R. Andreani**, G. Haeser, L. M. Mito, and H. Ramírez. “Weak notions of nondegeneracy in nonlinear semidefinite programming”. In: *Mathematical Programming* 205.1–2 (May 2023), pp. 1–32. ISSN: 1436-4646. DOI: 10.1007/s10107-023-01970-4.
10 (Google Scholar)
- N. Suhadolnik, **J. Ueyama**, and S. Da Silva. “Machine Learning for Enhanced Credit Risk Assessment: An Empirical Approach”. In: *Journal of Risk and Financial Management* 16.12 (Nov. 2023), p. 496. ISSN: 1911-8074.
DOI: 10.3390/jrfm16120496
10 (Google Scholar)
- J. A. de Oliveira, V. P. Gonçalves, **R. I. Meneguette**, R. T. de Sousa, D. L. Guidoni, J. C. Oliveira, and G. P. Rocha Filho. “F-NIDS – A Network Intrusion Detection System based on federated learning”. In: *Computer Networks* 236 (Nov. 2023), p. 110010. ISSN: 1389-1286.
DOI: 10.1016/j.comnet.2023.110010.
8 (Google Scholar) 3 (Web of Science)
- G. T. Pereira, I. B. Santos, L. P. Garcia, T. Urruty, M. Visani, and **A. C. de Carvalho**. “Neural architecture search with interpretable meta-features and fast predictors”. In: *Information Sciences* 649 (Nov. 2023), p. 119642. ISSN: 0020-0255.
DOI: 10.1016/j.ins.2023.119642.
8 (Google Scholar) 3 (Web of Science)
- A. C. G. Santos, W. Oliveira, J. Hamari, S. Joaquim, and **S. Isotani**. “The Consistency of Gamification User Types: A Study on the Change of Preferences over Time”. In: *Proceedings of the ACM on Human-Computer Interaction* 7.CHI PLAY (Sept. 2023), pp. 1253–1281. ISSN: 2573-0142.
DOI: 10.1145/3611068.
8 (Google Scholar)

3.2.2 PAPERS IN HIGH IMPACT JOURNALS 2023-2024 (JCR>7)

Tables 3.2 and 3.3 show the papers in high impact journals.

TABLE 3.2: PAPERS IN HIGH IMPACT JOURNALS 2023-2024 (JCR>10)

Paper number	Journal	JCR
[52]	NATURE	50,5
[133]	ACM COMPUTING SURVEYS	23,8
[170]	Nature Human Behaviour	21,4
[92]	AMERICAN JOURNAL OF PSYCHIATRY	15,1
[150]	Information Fusion	14,7
[202]	Physics of Life Reviews	13,7
[5]	APPLIED ENERGY	10,1

TABLE 3.3: PAPERS IN HIGH IMPACT JOURNALS 2023-2024 (JCR>7)

Paper number	Journal	JCR
[261]	Journal of Cleaner Production	9,7
[269]	IEEE SIGNAL PROCESSING MAGAZINE	9,4
[271]	RENEWABLE ENERGY	9
[169]	ENERGY	9
[129]	IEEE TRANSACTIONS ON KNOWLEDGE AND DATA ENGINEERING	8,9
[126]	IEEE COMMUNICATIONS MAGAZINE	8,3
[203]	SCIENCE OF THE TOTAL ENVIRONMENT	8,2
[249]	COMPUTERS AND ELECTRONICS IN AGRICULTURE	7,7
[61, 70, 215]	ENGINEERING APPLICATIONS OF ARTIFICIAL INTELLIGENCE	7,5
[8, 76, 143]	EXPERT SYSTEMS WITH APPLICATIONS	7,5
[34]	Earths Future	7,3
[69, 91]	APPLIED SOFT COMPUTING	7,2
[121]	COMPUTERS ENVIRONMENT AND URBAN SYSTEMS	7,1
[73]	The Lancet Regional Health-Americas	7
[53, 265]	INTERNATIONAL JOURNAL OF PRODUCTION RESEARCH	7
[123]	IEEE Transactions on Dependable and Secure Computing	7

3.3 HIGH IMPACT PROJECTS

3.3.1 FAPESP ESCIENCE TECHNOLOGICAL INNOVATION PROGRAMS: CRIME, INSECURITY AND LEGITIMACY: A TRANSDISCIPLINARY APPROACH

Coordinator: Luis Gustavo Nonato (USP-ICMC)

Based on Data Science and Artificial Intelligence techniques, the project aims to develop innovative analytical methodologies to investigate complex phenomena associated with crime, the persistence of feelings of insecurity in the population and their effects on democratic legitimacy. The study of the relationship between crime, feelings of insecurity and the legitimacy of justice institutions is also the main focus of the project. Another important objective is to train and qualify human resources so that they are able to use Data Science and Artificial Intelligence techniques in the field of Human and Social Sciences (CHS), bringing new perspectives of approach and differentiated training for professionals and researchers.

<https://bv.fapesp.br/en/auxilios/111614/criminality-insecurity-and-legitimacy-a-transdisciplinary-ap>

3.3.2 DEVELOPMENT OF ALGEBRAIC MULTISCALE PRECONDITIONERS FOR OIL RESERVOIR SIMULATION

Coordinator: Fabricio Simeoni de Sousa (USP-ICMC)

In this research project we will develop a preconditioning method based on the family of mixed multiscale methods "Multiscale Robin Coupled Method" that was developed in recent years by the proposing research group with support from Petrobras. To this end, we will first study the properties of the method and its effectiveness as a preconditioner in the case of known discretizations, to later motivate its extension to the more general case when the information and details of the underlying discretization that gives rise to the linear system are limited or not available.

Institutional/Industrial Partnerships: ICMC-USP, Petrobras S.A.

3.3.3 CUTTING, PACKING, LOT-SIZING, SCHEDULING, ROUTING AND LOCATION PROBLEMS AND THEIR INTEGRATION IN INDUSTRIAL AND LOGISTICS SETTINGS

Coordinator: Reinaldo Morabito Neto (UFSCAR)

This project addresses a wide range of discrete optimization and operations research problems, and aims to contribute with innovative approaches and solutions to production and supply chain management problems. The problems focused in this thematic project are divided into: (A) cutting problems, (B) packing problems, (C) lot-sizing problems, (D) scheduling problems, (E) routing problems (F) location problems and (G) the integration of these problems. In addition to the study and development of mathematical models related to these problems, solution methods and algorithms to solve them will be developed, and their computational performances will be analyzed. The project also aims to continue the integration and collaboration



of research groups from different institutions interested in these issues, as well as human resource training for research and technological developments. It is intended to intensify cooperation between the productive sector and academia, with the development of case studies in companies. It is expected, therefore, to enable collaborations and partnerships in the study of these problems and in the development of computational tools to be used in practice. The team of this project is composed of several researchers at various stages of their academic careers, from graduate students and recent doctors, to experienced researchers. This project is a continuation of three other FAPESP Thematic Projects, the first being developed between 2006 and 2010, the second between 2010 and 2015 and, the third between 2017 and 2023. In the first two projects, problems were studied mainly in (A), (B), (C), (D), as well as some integration of these problems (G). In the third project, problems (E) and (F) were added and the study of the integrations between the problems was intensified.

<https://bv.fapesp.br/en/auxilios/112287/cutting-packing-lot-sizing-scheduling-routing-and-location-p>

3.3.4 METHODOLOGIES AND RELIABILITY METRICS OF WELL-DRILLING EQUIPMENT

Coordinator: Francisco Louzada Neto (ICMC-USP)

The objective of this project is to develop statistical and computational methodologies, appropriate for the calculation of the reliability of various equipment used for the drilling wells, taking into consideration the provisions of the same throughout the system and their failure rates.

Institutional/Industrial Partnerships: ICMC-USP, Petrobras S.A.

Funding: R\$:4.722.991,00

3.3.5 EXPLORING THE MULTIMODAL APPROACH IN FLOOD DETECTION AND PREDICTIONS

Coordinator: Jó Ueyama (USP-ICMC)

This project aims to explore the multimodal approach for detecting and predicting floods. By multimodal, we mean that different sensing approaches will be explored to monitor urban rivers. The first sensor to be considered is an infrared sensor to measure the water level of the water stream. The second sensor are video cameras that capture images of the river in real-time, which are analyzed later. The third sensor is a barcode, which is being studied. The fourth consists of the use of artificial intelligence in monitoring urban rivers. The multimodal approach is usually explored for everyday tasks. For example, if a person wants to recognize the emotional state of another, he or she analyzes various modalities such as speech, face and body language. Studies have shown that the multimodal approach increases the success rate in recognizing emotions. This proposal aims to explore this approach in flood detection/prediction.



3.3.6 EVA - VIRTUAL ASSISTANT FOR PREGNANT WOMEN: FOLLOW-UP OF PHYSICAL ACTIVITY

Coordinator: Gleici da Silva Castro Perdoná (FMRP-USP)

EVA is the world's first open source, Portuguese-speaking virtual personal assistant. Virtual assistants (AV) are software or a set of software capable of interacting with humans in natural language, such as writing and reading chats or speaking, listening and interpreting voice commands. Personal virtual assistants, on the other hand, are a category capable of adapting to a specific person, meeting their personal needs; the goal is - in the near future - to be something like a virtual friend with a unique personality, who has, for example, a tone of voice and behavior of his own.

EVA is an acronym for Virtual Analytical Assistant. The term Analytical because it is an auxiliary AV for data processing and statistical inferences based on Artificial Intelligence techniques and Mathematical Models.

The collected data will be obtained from around 200 volunteer pregnant women. The data will be generated by triaxial accelerometer sensors.

At the end of the project, the EVA and auxiliary software will be made available in open code (mostly) to researchers and enthusiasts, just mentioning the source in their respective projects.

Project website: <http://eva.fmrp.usp.br>

Institutional/Industrial Partnerships: PPSUS - FAPESP

Funding: R\$:157.641,40



4. Innovation and Technology Transfer Report

4.1 INTRODUCTION

During its eleventh year of activities, the CEPID-CeMEAI's research team have strived continuously to maintain research and development of new and innovative methodologies up and running. Those technologies are based on mathematical sciences and aim to optimize designs and processes to reduce costs, focusing on the transference of mathematical technology to industry.

All the groups engaged in the CEPID-CeMEAI contributed to the technology transfer process. Although some groups used more specific approach models, generally, the focus was on thinking about practical problems and products, motivated by industrial/institutional projects or community needs, developing essential aspects of the projects in the academic environment, and training human resources, composed mainly by post-docs, PhDs, Masters and IC students, to the best possible level.

From the industrial/institutional/community side, the partnership was generally informally driven by one or a group of industrial/institutional staff responsible for the research, with which the academic team of the project maintains exchanges and collaboration, or by the community, that then absorbed the new technologies via software and systems.

4.2 CEMEAI'S ACTIVITIES

Several actions related to innovation and technology transfer were carried out. The highlights are as follows.

4.2.1 KNOWLEDGE TRANSFER WORKSHOPS

During the last period, CeMEAI promoted the following workshops:

- 2024-01-13, 2024-03-23. 4th MBA on Data Science Workshop, which occurred remotely. There were presentations of 218 works distributed on virtual rooms.

More information can be found at

<https://cemeai.icmc.usp.br/evento/4o-workshop-de-defesas-mba-ciencias-de-dados-cemeai-icmc-usp/>

- 2024-02-19 to 2024-02-23. X Study Group with Industry, promoted with SENAI-SP. There were eight problems from eight different companies: Metalsa (manufacturing), Bayer (chemistry), Sabó (manufacturing), Capricórnio (manufacturing), CSD br (finance), Datawake (IT), SEG (manufacturing)

and Congas (Energy).

More information can be found at <https://cemeai.icmc.usp.br/WSMPI/10a-edicao/>;

- The 11th Study Group with Industry will be promoted by CeMEAI in February 2025.

4.2.2 MEETINGS WITH PARTNERS

One of the main actions of CeMEAI is to search for industrial problems, opportunities and partnerships, providing advice to researchers, students and industries. In the present context, we have the Technological Clinics, a consultancy service for researchers, students and industries needing mathematical, statistical and computing solutions. We set up a team of research and staff of the CEPID-CeMEAI to listen and understand the problems and direct them to one of the CEPID-CeMEAI research groups so that solutions can be delivered quickly and effectively.

During the period of this report, we had 38 meeting with industrial partners. Some of the companies that we met up are: SABESP, MCTI, SEFAZ, Escola Governo Goias, Comgas, Pentagro, Vivo, CSD BR, Stelantis, Jacto, Splice, Intel, Facens, Capricornio, SEG, Bayer, Sabó, Datawake, Trinity, Tigre and Neuraltec.

4.2.3 CORPORATE EDUCATION AS AN TECHNOLOGY TRANSFER ACTIVITY

CeMEAI's objective is to promote closer ties between the academic and industrial communities, ensuring that academic, scientific and technological development is accessible to a broader range of users, enabling the development of new materials, processes, products and services through efficient use of mathematical sciences in real problems of the most diverse areas of knowledge.

In this context, we created a quality CeMEAI Corporate Education structure through which we can proceed with our technology transfer process in a structured and systemic manner, guaranteeing a vigorous learning process.

It is important to note that this technology transfer activity is integrated with the education and knowledge diffusion activities as described in Section 5, offering students a unique and significant opportunity to bring a real problem of their companies to be solved with the support of the CEPID-CeMEAI supervisors throughout the course.

Thus, in addition to training and developing theoretical and practical skills in data science, the student can also offer a solution to an industrial problem from his company.

Our courses are offered in different modalities, aligned with the practices and values of our partner companies' vision and mission, reflecting the compelling attendance of their needs.

We have the following training possibilities:

- Professional Master Program in Mathematics, Statistics and Computing Applied to Industry(MECAI);
- MBA on Data Science (online), 1st, 2nd, 3rd, 4th and 5th Editions;
- MBA on Data Security (online), 1st Edition;
- *In loco* and online Corporate Training Program;



- Specific short training.

We have trained staff from more than 400 companies and institutions, corresponding the following amount of staff from industries:

- 142 staff from the 1st Edition of the MBA in Data Science;
- 55 staff from the 1st Edition of the MBA in Data Security;
- 196 staff from the 2nd Edition of the MBA in Data Science;
- 165 staff from the 3rd Edition of the MBA in Data Science;
- 270 staff from the 4th Edition of the MBA in Data Science;
- 218 staff from the 5th Edition of the MBA in Data Science;
- 180 staff from the Statistics for Data Science;
- 19 staff from the Corporate Training Program in Data Science for the Sul America Insurance Company;

More information can be found at <http://cemeai.icmc.usp.br/acoes/educacao-corporativa>.

4.2.4 HYBRID PBL AS AN TECHNOLOGY TRANSFER ACTIVITY

The Problem-Based Learning (PBL) methodology aims to increase knowledge's practicality, retention and applicability. PBL has proved to be an excellent alternative to the traditional teaching methodology, with high levels of student satisfaction. Researchers at CEPID-CeMEAI have obtained favourable results regarding implementing this methodology, adapted to statistical disciplines, both at undergraduate and graduate levels. In particular, we proceed with an adapted hybrid structure in which students concomitantly receive training on the course topics but focus on solving real industrial problems on a vertical learning structure, which we named hybrid Problem-Based Learning (hiPBL).

More information can be found at <http://cemeai.icmc.usp.br/acoes/educacao-e-difusao/item/941-aprendizado-baseado-em-problema-industrial-hibrido-hipbl>.

4.3 NEW INITIATIVES

As future initiatives, the strategy for innovation and technology transfer of the CEPID-CeMEAI should follow some basic lines of action to approximate the academy and industry. Particularly following the three initiatives below:

- Continue to encourage the Knowledge Transfer Workshops (KTW) and Study Groups with Industry (SGI);
- Continue to establish formal cooperation agreements and encourage applications for funding;
- Continue to incentivise the nucleation of start-ups/spin-off companies and the development of new products.



5. Education and Knowledge Diffusion Report

5.1 INTRODUCTION

The activities of Education and Knowledge Diffusion of CeMEAI focuses on the presentation of mathematical contents to students with different levels of knowledge, by organizing lectures and workshops for students visiting the university and visits to public schools. We believe that these activities contribute to a better dissemination of Mathematics both in itself but also in its interactions with the different areas of knowledge. In addition, the center's publications on the web, make it more visible to society the research activities carried out in universities. More information about the center and its projects can be found at www.cemeai.icmc.usp.br.

5.2 ONGOING PROJECTS

5.2.1 MECAI

The Professional Master Program in Mathematics, Statistics and Computing Applied to Industry (MECAI) is a two-years-of-study course started in August 2014. It represents one of the main initiatives of the RIDC-CeMEAI for improving the mathematical sciences background of employees of high-tech selected industries. MECAI is a modular M. Sc. course that can be tailored to meet a given demand. The first module in Finances was targeted at the banking industry and started with 20 students, all employees of banks or brokers. In 2024 the 10th module on Data Science started with new 215 students.

The professional master's degree is the first professional master's degree in Brazil that covers, in a comprehensive way, specific areas of mathematics, statistics and computing applied to industry. The goal is to improve the training of professionals and meet the demand of industry for personnel with a better background in the mathematical sciences. It is a very successfully program, with students of different backgrounds from companies like: Bank of America, Itaú, Morgan Stanley, Bradesco, Siemens, SAP, Nielsen, Cielo, Monsanto, TAM, Embrapa, HP, Serasa Experian, Embraer and others. More information about the Professional Master Program is available at <https://www.icmc.usp.br/pos-graduacao/mecai>.

5.2.2 MBA IN DATA SCIENCE

The 440-hour online graduate course, the MBA in Data Science is on its fifth edition with less than 10% of dropouts and maintaining a high Net Promoter Score of 40 (ranking Great). The 6th edition is planned to 2025.

More information can be found at www.cemeai.icmc.usp.br/MBA.

5.2.3 MBA IN DATA SECURITY

Following the success of the MBA in Data Science, CeMEAI created another 400-hour online graduate course, the MBA in Data Security that started in June 2021. It has 55 students. More information can be found at www.cemeai.icmc.usp.br/MBASD.

5.2.4 EDUSCAR

By the end of 2018 the five RIDCs based in São Carlos together with the Engineering Research Center met at UFSCar, with the objective of improving education in São Carlos, using some schools as a test bed. The São Carlos' Education secretary and State Education Director were invited to this work-group, and we are working together since then. Several existing and new initiatives were proposed and are being carried out for the benefit of local public education. EduSCar activities are described on a separated report. Some of the results of the initiatives can be found in the Eduscar website <http://www.cemeai.icmc.usp.br/EduSCar/>

5.3 DISSEMINATION

During the period of this report 72 videos were produced and published with more than 26847 views. Our YouTube Channel grew from 1500 to 1610 subscriptions with more than 207,000 views (14,000 new views last 12 months). The website had more than 2,000 users per month in last months. There were 48 press releases in the period with a total of more than 30,000 hits on the website.

The Instagram page was created on august 2022 and there were more than 616 followers and 280 posts.

CeMEAI clipping includes more than 372 appearances in media in this report period including:

- TV Channels: CNN Brasil and Record News.
- Newspapers: Correio Popular, O Estado de São Paulo, Valor Econômico, O Globo and Folha de Pernambuco.
- Magazines and sites: Agência FAPESP, G1, UOL, Terra, Istoé, Veja, Jovem Pan, R7, BBC Brasil, Isto é Dinheiro, Reuters and Revista Pesquisa Fapesp.

5.3.1 WEBSITE AND SOCIAL MEDIA

- **Website:** <http://www.cemeai.icmc.usp.br>
- **Facebook:** <https://www.facebook.com/cepid.cemeai>
- **YouTube:** <https://www.youtube.com/cepidcemeai>
- **Twitter:** <https://twitter.com/cepidcemeai>
- **Instagram:** <https://www.instagram.com/cepidcemeai/>



6. Institutional Support to the Project

The University of São Paulo through the Institute of Mathematical and Computer Sciences (ICMC) as the project host Institution has provided adequate support for the smooth running of it. The main support provided by ICMC is:

1. Two full-time staff working as industry liaison, knowledge and dissemination, and full support for visitors, meetings, industry contacts, and contracts
2. Office space for meetings and for the two staff. Computer infrastructure for the installation of the cluster Euler.
3. Vehicles and drivers for all the travel involved in the industrial contacts, workshops, and visitors transfers
4. Full support for accounting and keeping track of expenses and the necessary documentation. Full support for purchasing goods, booking hotels, and arranging and booking travel for all participants of Cepid-CeMEAI, including those from the associate institutions.
5. Full support for the organization of the Study Groups with Industry and Modeling Schools.
6. Full support for industry liaison and contracts conclusion.
7. Establishment of CEPIx-CeMEAI as part of the University structure

7. Activities plan for the next period

As usual, for the next year, we intend to continue to organize the Study Groups with Industry (SGI), now in collaboration with SENAI, and with much hope that this will make it easier to reach more industries. As of last year the SGI was organized in full collaboration with SENAI and the workshop was a great success as can be viewed on the CeMEAI website. Another possible plan is that we might opt to run several short versions of the workshop each one dedicated to a different market niche. With eleven years of the project gone by, it became more realistic the idea of having research projects genuinely sponsored by the Center. CeMEAI sponsored the application of two new projects to Fapesp. One center for AI, was granted to Prof. André Carvalho, another CPA CDII was approved by Fapesp in addition to also being part of the IBM center C4AI, which was granted to Prof. Fabio Gagliardi Cozman from Poli-USP and has the participation of Alexandre Delbem from CeMEAI. We have also applied to the last round of the new EMBRAPII call from MCTI and have been accepted as a full Embrapii Unit from December 2022. In an attempt to become more interdisciplinary, we are contacting other RIDCs aiming to encourage the possibility of having more mathematics in their activities. RIDCs that collaborate intensely with CeMEAI, at present, are CERTEV and NEV. We are also making arrangements for the Euler cluster upgrade in 2024, which is underway. There is also an initiative from the University administration to institutionalize CeMEAI as part of the University corporation that is now at completion.

Appendices

A. M.Sc. and PhD Students

A.1 ONGOING PHDS

1. Adriane Caroline Teixeira Portela. Study of the virtual age of repairable systems in degradation models. Start: 2021. UFSCar. Supervisor: Vera Lucia Damasceno Tomazella
2. Aldimir José Bruzadin. Segmentação Semântica de Imagens via Aprendizado por Reforço Profundo e Minimização de Funcionais de Energia em Grafos. Start: 2022. UNESP. Funding: CAPES. Supervisor: Wallace Correa de Oliveira Casaca
3. Alex Leal Mota. Não Definido. Start: 2019. ICMC-USP. Co supervisor: Francisco Louzada Neto
4. Alfredo Guilherme da Silva Souza. Proteonica aplicada a detecção de Cancer. Start: 2019. ICMC-USP. Funding: CAPES. Supervisor: Adenilso da Silva Simão
5. Aline Roberta Santos Righi. Effects of Empirical Correlations for Crossflow Instabilities Applied to Laminar-Turbulent Transition. Start: 2019. ITA. Funding: FAPESP. Supervisor: João Luiz Azevedo
6. Aline Rodrigues Machado. Não definido. Start: 2021. ICMC-USP. Supervisor: Francisco Louzada Neto
7. Alysson Alexander Naves Silva. Classificação de sementes e grãos com comitê de Redes Neurais Convolucionais Evolutivas usando Algoritmos Genéticos Multiobjetivo. Start: 2019. ICMC-USP. Supervisor: Claudio Fabiano Motta Toledo
8. Alysson Matos de Souza. Álgebra Geométrica em Dinâmica Molecular. Start: 2023. UNICAMP. Funding: CAPES. Supervisor: Carlile Campos Lavor
9. Ana Raquel Faccioli. Otimização em sistemas de abastecimento de água. Start: 2022. UNESP. Funding: CAPES. Supervisor: Edilaine Martins Soler
10. Andrew Gomes Pereira Sarmiento. AI-assisted human-machine interface for remotely piloted aircraft system. Start: 2022. ITA. Supervisor: Roberto Gil Annes da Silva
11. Andrey Brito de Nascimento. Inferência de acoplamentos entre sinais para a classificação de redes funcionais. Start: 2023. ICMC-USP. Co supervisor: Thomas Kaue Dal Maso Peron
12. Andreza Beatriz Jacinto da Silva. Estudo da estabilidade de fluido não Newtoniano modelado pelo PTT. Start: 2022. ICMC-USP. Supervisor: Leandro Franco de Souza
13. Anna Caroline Felix Santos de Jesus. Estudo numérico sobre o impacto da topografiana camada-limite atmosférica da floresta Amazônica com a metodologia RaNS. Start: 2021. ICMC-USP. Supervisor: Livia Souza Freire Grion

14. Antonio Marcos Almeida Ferreira. Otimização Multi-Objetivo Aplicada em Névoa para o Provisionamento Dinâmico de Recursos no Contexto de Internet das Coisas. Start: 2018. ICMC-USP. Supervisor: Júlio César Estrella
15. Arthur Henrique Sousa Cruz. TBA. Start: 2024. ICMC-USP. Funding: CAPES. Supervisor: Franklina Maria Bragion de Toledo
16. Arthur Medeiros Figueiredo Barreto. Modelo matemático multiperíodo para o planejamento e controle da produção de biodigestores. Start: 2020. UNESP. Funding: CAPES. Co supervisor: Helenice de Oliveira Florentino Silva
17. Beatriz Liara Carreira. Análise da estabilidade hidrodinâmica de escoamentos viscoelásticos em camada limite. Start: 2021. ICMC-USP. Funding: CNPq. Supervisor: Leandro Franco de Souza
18. Beatriz Regina Brum. Métodos de inferência em sistemas complexos. Start: 2021. ICMC-USP. Supervisor: Francisco Aparecido Rodrigues
19. Brenno de Mello Alencar. Metodo De Concept Drift Contextual Para Aprendizado Online Em Redes Neurais Aplicadas Em Data Stream. Start: 2020. UFBA. Supervisor: Ricardo Araújo Rios
20. Breno Caetano da Silva. Medidas de distância baseadas em entropia e alinhamento de séries temporais para mineração de dados baseada em filogenias. Start: 2015. ICMC-USP. Supervisor: Alexandre Cláudio Botazzo Delbem
21. Bruna Christina Battissacco. Transferência de aprendizado para reconhecimento de imagens médicas relacionadas a câncer. Start: 2022. ICMC-USP. Funding: FAPESP. Supervisor: André Carlos Ponce de Leon Ferreira de Carvalho
22. Bruna Cristina Braga. Aprendizado por representação em metaheurísticas para abordar o problema de graph drawing. Start: 2020. Unifesp. Funding: CAPES. Supervisor: Mariá Cristina Vasconcelos Nascimento Rosset
23. Bruno Belorte. Ciência de Dados na Segurança Pública: Uma Abordagem Inteligente guiada por IA. Start: 2021. UNESP. Funding: CAPES. Supervisor: Wallace Correa de Oliveira Casaca
24. Bruno César de Oliveira Souza. Causality in Machine Learning. Start: 2024. UNICAMP. Funding: Shell Inc. Supervisor: Anderson de Rezende Rocha
25. Caio Matheus Prates Batalha Faria. TBA. Start: 2018. IME-USP. Funding: CAPES. Co supervisor: André Fujita
26. Camila Xavier Sá Peixoto Pinheiro. Multivariate graded response models for large-scale polytomous items data. Start: 2020. ICMC-USP. Supervisor: Cibele Maria Russo Novelli
27. Camilo Restrepo Estrada. Sistemas de alerta antecipado de cheias com base em sistemas geográficos voluntários. Start: 2014. EESC-USP. Funding: CNPq. Supervisor: Eduardo Mendiondo
28. Camyla Ferreira Moreno. Novas formulações para o problema de designação de locais de armazenagem. Start: 2021. ITA. Funding: CAPES. Supervisor: Mariá Cristina Vasconcelos Nascimento Rosset
29. Carla Micheli da Silva. Padrão de Atividade Física em Gestantes Usuárias do Sistema Único de Saúde da Cidade de Ribeirão Preto. Start: 2019. FMRP-USP. Supervisor: Gleici da Silva Castro Perdoná



30. Carlos Cesar Brochine Junior. Integração do problema de localização de hubs e roteamento para redes de comunicação e transporte. Start: 2024. ITA. Supervisor: Mariá Cristina Vasconcelos Nascimento Rosset
31. Carlos Franklin Taco Pedraza. Modelos espaciais lineares gaussianos assimétricos com repetição múltiplas. Start: 2020. ICMC-USP. Supervisor: Vicente Garibay Cancho
32. Carlos Manuel Ocampo Ortiz. Otimização de rotas de veículos aéreos não tripulados para auxílio de atividades agrícolas. Start: 2024. UNESP. Supervisor: Helenice de Oliveira Florentino Silva
33. Carlos Mauricio Ruiz Diaz. Modelagem heurística híbrida para detecção de anomalias em escoamento bifásico líquido/gás-denso. Start: 2021. USP . Funding: CNPq. Supervisor: Oscar Mauricio Hernandez Rodriguez
34. Cassiano da Silva Tavares. Modelos e Métodos de Otimização para Apoio à Tomada de Decisão no Plantio Agrícola em Citricultura. Start: 2021. UFSCar. Supervisor: Pedro Augusto Munari Junior
35. Cássio Antonio Giatti. O Modelo Conforme em Geometria Molecular. Start: 2024. UNICAMP. Funding: CNPq. Supervisor: Carlile Campos Lavor
36. Clarissa Câmara de Freitas. Ferramentas de Suporte a Decisao para Seguranca Hidrica Multisetorial sob Condições de Não-Estacionariedade. Start: 2015. EESC-USP. Funding: CAPES. Supervisor: Eduardo Mendiondo
37. Cristhian Enrique Álvarez Pacheco. Estudo experimental e modelagem fenomenológica de escoamento bifásico com gás denso em inclinações ascendentes e descendentes. Start: 2024. USP . Funding: FUSP. Supervisor: Oscar Mauricio Hernandez Rodriguez
38. Daniel Camilo F. Guzman. Não Definido. Start: 2019. ICMC-USP. Supervisor: Francisco Louzada Neto
39. Daniel Cunha Oliveira. TBA. Start: 2021. IME-USP. Supervisor: André Fujita
40. Daniel Fernando Garcia. Modelos matemáticos e métodos de solução para otimização da cogeração de energia em usinas sucroenergéticas. Start: 2022. UNESP. Funding: CAPES. Supervisor: Edilaine Martins Soler
41. Daniel Morales. Line integral on discrete grids and applications. Start: 2020. IME-USP. Supervisor: Nikolai Valtchev Kolev
42. Danilo Adrian Marques. Características robustas de superfícies lineares por partes. Start: 2021. ICMC-USP. Co supervisor: Antonio Castelo Filho
43. Denilson Stefanelli. Inversão de Dados de Ressonância. Start: 2018. UNICAMP. Supervisor: Lucio Tunes dos Santos
44. Diaulas Murize Santana Vieira Marcondes. Implementação de um método de Lagrangianos aumentados com informação de primeira ordem. Start: 2020. IME-USP. Funding: CAPES. Supervisor: Ernesto Julián Goldberg Birgin
45. Diego Alejandro Guzmán Arias. Integração de Estratégias de Adaptação a Riscos Hidrológicos Visando Sistemas de Suporte à Decisão em Bacias Hidrográficas com Dados Escassos. Start: 2014. EESC-USP. Supervisor: Eduardo Mendiondo



46. Diego Bonkowski de la Sierra Audiffred. Estimativa e controle de escoamento em regime não-estacionário utilizando sensores de pressão. Start: 2020. ITA. Funding: FAPESP. Supervisor: André Valdetaro Gomes Cavalieri
47. Diego Chou Pazo Blanco. Análise e modelagem da transição de camadas limite por turbulência livre. Start: 2019. ITA. Funding: FAPESP. Supervisor: André Valdetaro Gomes Cavalieri
48. Diego Ferolla de Abreu. Simulação de Grandes Escalas para Representar a Saída de Jatos Turbulentos a Altos Números de Reynolds. Start: 2019. ITA. Supervisor: João Luiz Azevedo
49. Diego Frazatto Pedroso. Estratégias para otimização de recursos computacionais em nuvens públicas e privadas. Start: 2019. ICMC-USP. Supervisor: Júlio César Estrella
50. Diego Minatel. Aprendizado de Máquina não-discriminatório por meio de Funcionamento Diferencial dos Itens. Start: 2020. ICMC-USP. Co supervisor: Mariana Cúri
51. Diego Yoshihiro Hono. TBA. Start: 2024. ITA. Funding: CAPES. Supervisor: Mariá Cristina Vasconcelos Nascimento Rosset
52. Diogo Apóstolo. Imbalanced and Missing Data Problems: studying their individuality and their interplay. Start: 2023. Universidade de Coimbra. Co supervisor: Ana Carolina Lorena
53. Dionisio Alves da Silva Neto. Distribuição Exponencial por Partes Potência: Uma proposta genuinamente semiparamétrica para a construção de modelos de fragilidade em fenômenos com censura intervalar. Start: 2023. UFSCar. Funding: CAPES. Supervisor: Vera Lucia Damasceno Tomazella
54. Douglas Dias Lieira. TBA. Start: 2022. UNESP. Supervisor: Rodolfo Ipolito Meneguette
55. Edesio Pinto de Souza Alcobaça Neto. Automated Machine Learning: Learning to Learn. Start: 2018. ICMC-USP. Funding: CAPES. Supervisor: André Carlos Ponce de Leon Ferreira de Carvalho
56. Edilene Queiroz. Intensity Proportional Repair Alert Model systems under dependent competing risks. Start: 2022. UFSCar. Supervisor: Vera Lucia Damasceno Tomazella
57. Edson Orati da Silva. Estudo do padrão de escoamento anular vertical ascendente e de sua estabilidade hidrodinâmica com misturas de líquido e gás-denso em tubo grande. Start: 2022. USP. Funding: FIPAI. Supervisor: Oscar Mauricio Hernandez Rodriguez
58. Edson Vander da Silva. Modelagem matemática e currículo. Start: 2024. UNICAMP. Supervisor: Laura Leticia Ramos Rifo
59. Eduardo Lira. TBA. Start: 2017. IME-USP. Funding: CAPES. Supervisor: André Fujita
60. Eduardo Vargas Ferreira. TBA. Start: 2022. Unifesp. Supervisor: Ana Carolina Lorena
61. Elian Laura Riveros. Open-world Recognition. Start: 2021. UNICAMP. Funding: Governo do Peru. Supervisor: Anderson de Rezende Rocha
62. Eliézer Passos Moura. Mapeamento dos Rios da Amazônia Usando Veículos Autônomos Subaquáticos. Start: 2020. ICMC-USP. Supervisor: Jó Ueyama
63. Émerson Batista Ferreira Mota. Lesson study na formação de professores iniciantes de matemática. Start: 2024. UNICAMP. Supervisor: Laura Leticia Ramos Rifo



64. Émerson Dutra. Geometria de Distâncias na Esfera. Start: 2022. UNICAMP. Supervisor: Carlile Campos Lavor
65. Emerson Yoshiaki Okano. Identificação de anomalias na necessidade de uso de recursos hospitalares. Start: 2020. Unifesp. Funding: CAPES. Supervisor: Mariá Cristina Vasconcelos Nascimento Rosset
66. Érick Rúbens Oliveira Cobalchini. Identificação de áreas de recarga e descarga do Sistema Aquífero Guarani com o auxílio de sensoriamento remoto e traçador térmico. Start: 2019. EESC-USP. Funding: CAPES. Supervisor: Edson Cezar Wendland
67. Erik Junior Paulino. Otimização do processo logístico da geração de biogás. Start: 2021. UNESP. Funding: CAPES. Co supervisor: Edilaine Martins Soler
68. Esteban Wilfredo Vilca Zuñiga. Análise de séries temporais utilizando redes complexas. Start: 2021. FFCLRP-USP. Supervisor: Zhao Liang
69. Ever Santoro. Logística de distribuição em uma fábrica de sorvetes. Start: 2018. UNESP. Supervisor: Edilaine Martins Soler
70. Fabiano Berardo de Sousa. Reconhecimento de melodias a partir de trecho melódico distorcido. Start: 2023. FFCLRP-USP. Funding: CAPES. Supervisor: Zhao Liang
71. Fabiano Ruano Neto. Análise numérica e Implementações Computacionais de Equações Constitutivas de Escoamentos não-Newtonianos. Start: 2021. ICMC-USP. Funding: FAPESP. Supervisor: Antonio Castelo Filho
72. Fábio Manguera da Cruz Nunes. TBA. Start: 2023. UFBA. Co supervisor: Paulo Henrique Silva
73. Fabio Vinícius Goes Amaral. Simulações computacionais e Inteligência Artificial na solução de escoamentos de fluidos não-Newtonianos (2021/07034-4). Start: 2021. UNESP. Funding: FAPESP. Supervisor: Cassio Machiaveli Oishi
74. Felipe Eduardo Atenas Maldonado. Proximal Decomposition Methods For Optimization Problems With Structure. Start: 2023. UNICAMP. Funding: FAPESP. Co supervisor: Claudia Alejandra Sagastizábal
75. Felipe Hernandez Cava. Calibration of the airport pavement design method for Brazilian climatic and geotechnical conditions. Start: 2024. ITA. Supervisor: Dimas Betioli Ribeiro
76. Felipe Marino Moreno. Physics-Informed Machine Learning Applied to Forecast Metocean Conditions. Start: 2021. EP-USP. Funding: FAPESP. Co supervisor: Fabio Gagliardi Cozman
77. Felipe Orlandi de Oliveira. Liquid animation. Start: 2022. ICMC-USP. Supervisor: Afonso Paiva Neto
78. Fernanda Pereira Guidotti. Arquitetura 6C: Uma proposta para IA na Indústria. Start: 2019. ICMC-USP. Funding: Instituto SENAI de Inovação em Sistemas Embarcados. Supervisor: Claudio Fabiano Motta Toledo
79. Fernando Abreu. Aspectos económicos dos impactos de inundações urbanas. Start: 2016. EESC-USP. Funding: CAPES. Supervisor: Eduardo Mendiando
80. Fernando Humberto de Almeida Moraes Neto. Ensemble de modelos de transferência de aprendizado: Uma nova abordagem para detecção de câncer de mama. Start: 2020. ICMC-USP. Supervisor: Adriano Kamimura Suzuki



81. Filipe de Carvalho Nascimento. Liquid animation. Start: 2017. ICMC-USP. Funding: CAPES. Supervisor: Afonso Paiva Neto
82. Filipe Loyola Lopes. Identificação e tratamento de inconsistências em dados médico-hospitalares. Start: 2020. Unifesp. Funding: CAPES. Supervisor: Ana Carolina Lorena
83. Filomen Incahuanaco Quispe. Liquid animation. Start: 2017. ICMC-USP. Supervisor: Afonso Paiva Neto
84. Flávio Pinto De Almeida Filho. Detecção de Comunidades em Redes Complexas para Previsão de Fraudes Financeiras. Start: 2021. FFCLRP-USP. Supervisor: Zhao Liang
85. Frederico Bolsoni Oliveira. Um Estudo de Limitadores para Formulações de Alta Ordem para Escoamentos Compressíveis. Start: 2021. ITA. Funding: FAPESP. Supervisor: João Luiz Azevedo
86. Gabriel de Freitas Pinheiro. Teoria Espectral de Grafos e Geometria de Distâncias. Start: 2022. UNICAMP. Funding: CNPq. Supervisor: Carlile Campos Lavor
87. Gabriel Mariz Borges da Cruz. Estudo experimental e modelagem da interação fluido-bifásico/estrutura em tubulação com gás denso. Start: 2024. USP. Funding: FUSP. Supervisor: Oscar Mauricio Hernandez Rodriguez
88. Gabriel Rodrigues Silva Grillo. Métodos incrementais com aceleração e Suavização exata de problemas de otimização convexa: uma abordagem unificada através de métodos inexatos de primeira ordem. Start: 2024. IME-USP. Funding: FAPESP. Supervisor: Ernesto Julián Goldberg Birgin
89. Gabriel Vicentin Pereira Lapa. Análise Dinâmica De Risers Considerando Escoamento Multifásico. Start: 2024. EESC-USP. Funding: FUSP. Co supervisor: Oscar Mauricio Hernandez Rodriguez
90. Gabriel Yudi Ragni Hamada. High-fidelity simulations and data-driven analysis of transitional and turbulent compressible flows over airfoils. Start: 2022. UNICAMP. Funding: FAPESP. Supervisor: William Roberto Wolf
91. Gabriela Faria Barcelos Gibim. Conhecimento especializado e interpretativo de professores que ensinam matemática no contexto da divisão de frações por meio de uma tarefa para formação. Start: 2019. UNICAMP. Supervisor: Laura Leticia Ramos Rifo
92. Gesiel Rios Lopes. algoritmos evolutivos multiobjetivos em modelagem de redes de múltiplas epidemias. Start: 2020. ICMC-USP. Funding: Fapema. Supervisor: Alexandre Cláudio Botazzo Delbem
93. Giovana Augusta Benvenuto. Detecção de Áreas de Desmatamento e Focos de Incêndio via Aprendizado Profundo: Métodos, Algoritmos e Aplicações em Biomas Brasileiros. Start: 2022. UNESP. Funding: CAPES. Supervisor: Wallace Correa de Oliveira Casaca
94. Giovanna Abreu Alves. TBA. Start: 2020. UFSCar. Co supervisor: Victor Claudio Bento de Camargo
95. Giovanni Taraschi. Análise Numérica do Método de Elementos Finitos Híbrido Primal em Malhas Quadrilaterais. Start: 2021. UNICAMP. Funding: CNPq. Supervisor: Maicon Ribeiro Correa
96. Gislaíne Camila de Freitas. Optimization of the food aid supply chain by integrating location, inventory and routing problems. Start: 2023. Unifesp. Funding: CAPES. Supervisor: Mariá Cristina Vasconcelos Nascimento Rosset



97. Glauber José Vaz. Machine Learning Techniques for Deforestation Detection. Start: 2024. UNICAMP. Co supervisor: Anderson de Rezende Rocha
98. Guilherme Camargo de Oliveira. Affordable Diagnostics Using Deep Learning and AI. Start: 2021. UNESP. Funding: CAPES. Supervisor: João Paulo Papa
99. Guilherme Mendonça Freire. Investigação de Uma Arquitetura de Variational Autoencoder para Representar Múltiplos Grupos. Start: 2020. ICMC-USP. Supervisor: Mariana Cúri
100. Guilherme Valderramos Montroni. Image processing. Start: 2021. ICMC-USP. Supervisor: Afonso Paiva Neto
101. Gustavo Alencar Bisinotto. Development of an Environmental Monitoring System from On- Board Measurements of Vessel Movements with Machine Learning Techniques. Start: 2020. EP-USP. Co supervisor: Fabio Gagliardi Cozman
102. Gustavo David Quintero Alvarez. Algoritmos para problemas do tipo OVO e LOVO com propriedades de complexidade. Start: 2019. IME-USP. Funding: CAPES. Supervisor: Ernesto Julián Goldberg Birgin
103. Gustavo de Oliveira Daumas. Um metamodelo utilizando o hipercubo latino para calibração inversa: aprendizado de máquina e métodos probabilísticos aplicados a engenharia geotécnica. Start: 2024. ITA. Supervisor: Dimas Betioli Ribeiro
104. Gustavo Evangelista Araújo. Síntese de fala considerando regionalismos brasileiros. Start: 2022. ICMC-USP. Funding: CAPES. Supervisor: Moacir Antonelli Ponti
105. Hanna Hortencio Pamplona. Programação de atividades em sistemas multimáquinas (provisório). Start: 2022. EP-USP. Supervisor: Débora Pretti Ronconi
106. Heitor Baldo. TBA. Start: 2021. IME-USP. Funding: CAPES. Co supervisor: André Fujita
107. Heloisa Vasques da Silva. Formulações baseadas em fluxo em arcos para extensões do problema de corte de estoque unidimensional. Start: 2022. UNESP. Funding: FAPESP. Supervisor: Silvio Alexandre de Araujo
108. Henrique Aquino. Uncertainty Quantification in CFD for nuclear power reactors. Start: 2023. ICMC-USP. Funding: CAPES. Supervisor: Roberto Federico Ausas
109. Herlisson Maciel Bezerra. Rede Long-Short Term Memory adaptada para seleção de atributos. Start: 2024. ICMC-USP. Supervisor: Cibele Maria Russo Novelli
110. Hermínio Paucar Curasma. Modelagem e implementação de uma arquitetura distribuída multinível para processamento de stream de dados. Estudo de caso em veículos aéreos não tripulados - VANTS. Start: 2021. ICMC-USP. Funding: CAPES. Supervisor: Júlio César Estrella
111. Humberto Gimenes Macedo. Desenvolvimento de Técnicas de Otimização para o Projeto Eficiente de Aerofólios. Start: 2022. Unifesp. Funding: CAPES. Supervisor: Luis Felipe Cesar da Rocha Bueno
112. Isadora Ferrão. Resilient air taxi architecture for smart cities. Start: 2021. ICMC-USP. Funding: CAPES. Supervisor: Kalinka Regina Lucas Jaquie Castelo Branco



113. Iury Batista de Andrade Santos. Aprendizado de máquina interpretável para aplicações médicas baseadas em imagens. Start: 2022. ICMC-USP. Funding: CNPq. Supervisor: André Carlos Ponce de Leon Ferreira de Carvalho
114. J Allan Antunes Lyrio. High-Fidelity Fluid-Structure Interaction Applied to Static Aeroelasticity of Typical Airliner Wings. Start: 2020. ITA. Supervisor: João Luiz Azevedo
115. Jamielli Tomaz Pereira. Regularidade em Controle ótimo com restrições mistas. Start: 2016. UNICAMP. Funding: FAPESP. Supervisor: Roberto Andreani
116. Janielly Matos Vieira. Estratégias de controle visando a redução de infecção por COVID-19. Start: 2022. UNESP. Funding: CAPES. Supervisor: Helenice de Oliveira Florentino Silva
117. Jeanfranco David Farfan Escobedo. Data Assimilation in Oil Reservoirs. Start: 2021. UNICAMP. Funding: Shell Inc. Supervisor: Anderson de Rezende Rocha
118. Jessica Suzana Barragan Alves. Modelos de resposta discreta com funções de ligação da família Gumbel. Start: 2019. ICMC-USP. Funding: CAPES. Supervisor: Jorge Luis Bazan Guzman
119. Jesus Enrique Quispre. TBA. Start: 2023. PUC-Chile. Supervisor: Pedro Luiz Ramos
120. Jianglong Yan. Development of complex network-based Graph Neural Networks (GNNs). Start: 2023. FFCLRP-USP. Funding: CNPq. Supervisor: Zhao Liang
121. Jing Yang. Event Reconstruction from Heterogeneous Visual Data. Start: 2019. UNICAMP. Funding: FAPESP. Supervisor: Anderson de Rezende Rocha
122. João Alexandre Matta de Souza. Geometria Hiperbólica e Estrutura 3D de Proteínas. Start: 2024. UFPE. Funding: CAPES. Co supervisor: Carlile Campos Lavor
123. João Phillipe Cardenuto. Detecting forgeries in scientific images. Start: 2020. UNICAMP. Funding: FAPESP. Supervisor: Anderson de Rezende Rocha
124. João Renato Ribeiro Manesco. Detecção Invariante à Domínio de Aparatos Médicos em Imagens de Radiografias Simples do Tórax. Start: 2024. UNESP. Funding: FAPESP. Supervisor: João Paulo Papa
125. Johann Eduardo Castro Bolivar. Efeitos de produtos químicos sobre características de escoamento bifásico e trifásico em tubulação vertical e inclinada. Start: 2020. USP. Funding: FIPAI. Supervisor: Oscar Mauricio Hernandez Rodriguez
126. Jonas Coelho Kasmanas. Análise e Classificação de Microbiomas Humanos: Detecção de Bioindicadores e Otimização por meio de Aprendizado de Máquina. Start: 2019. ICMC-USP. Funding: FAPESP. Supervisor: André Carlos Ponce de Leon Ferreira de Carvalho
127. Jonathan Vasquez. Modelo Com Fração De Cura Com Efeito De Threshold: Métodos Alternativos. Start: 2020. UFSCar. Supervisor: Vera Lucia Damasceno Tomazella
128. Jorge Enrique Arrollo Caballero. Estudo da dinâmica do escoamento bifásico em tubulação em inclinações ascendentes e descendentes através de PIV/PLIF. Start: 2024. USP. Funding: FUSP. Supervisor: Oscar Mauricio Hernandez Rodriguez
129. José Dori Nascimento. Event filtering: determining pieces of evidence pertaining to a given event. Start: 2020. UNICAMP. Funding: FAPESP. Supervisor: Anderson de Rezende Rocha



130. José Gescilam Sousa Mota Uchôa. Impacto do uso e ocupação do solo e das mudanças climáticas nos fluxos hidrológicos entre as águas subterrâneas e as águas superficiais em área de afloramento do Sistema Aquífero Guarani. Start: 2024. EESC-USP. Funding: FAPESP. Supervisor: Edson Cezar Wendland
131. Jose Luis Orozco. Genetic algorithm in Wolbachia-based biocontrol optimization. Start: 2022. Universidad Del Valle. Funding: Ministerio de Ciencia Tecnología e Innovación. Co supervisor: Helenice de Oliveira Florentino Silva
132. Juliana Marques de Souza. Segmentação Semântica de Imagens via Redes Profundas do Tipo Vision Transformer. Start: 2023. UNESP. Funding: CAPES. Supervisor: Wallace Correa de Oliveira Casaca
133. Junior Cesar Bonafim. Formulações p-step para o problema do caixeiro e o problema de caminho mínimo. Start: 2019. UFSCar. Supervisor: Pedro Augusto Munari Junior
134. Juniormar organista. Simulação de escoamentos bifásicos com método da interface imersa. Start: 2018. ICMC-USP. Supervisor: Leandro Franco de Souza
135. Kamila Katayama Lyra. Dashboards como ferramenta de tomada de decisão sobre tecnologias educacionais. Start: 2017. ICMC-USP. Supervisor: Seiji Isotani
136. Karelia Alexandra Vilca Salinas. Crime Prediction. Start: 2020. ICMC-USP. Funding: FAPESP. Supervisor: Luis Gustavo Nonato
137. Katy Rocio Cruz Molina. Modelos de sobrevivência induzido por fragilidade discreta com dados de censura intervalar. Start: 2020. UFSCar. Supervisor: Vera Lucia Damasceno Tomazella
138. Kleber de Santana Souza. Problemas de empacotamento com peças irregulares. Start: 2021. ICMC-USP. Supervisor: Franklina Maria Bragion de Toledo
139. Kleber Sartorio. TBA. Start: 2021. ICMC-USP. Supervisor: Rodolfo Ipolito Meneguette
140. Laila Letícia. Análise de redes temporais. Start: 2023. UFSCar. Supervisor: Francisco Aparecido Rodrigues
141. Laíza Ribeiro Silva. TBA. Start: 2020. ICMC-USP. Supervisor: Seiji Isotani
142. Larissa Macul. Formulações de Elementos Finitos Mistos Híbridas para Escoamentos. Start: 2024. UNICAMP. Supervisor: Maicon Ribeiro Correa
143. Laurindo Daniel Silva da Rocha. Coordenadas Conformes em Microscopia Eletrônica. Start: 2020. UNICAMP. Supervisor: Carlile Campos Lavor
144. Leandro Rocha. Simetrias em Geometria de Distâncias. Start: 2022. UNICAMP. Supervisor: Carlile Campos Lavor
145. Leonardo Carneiro Feltran. Manutenção Preditiva em Caminhões Utilizando Aprendizado de Máquina. Start: 2022. ICMC-USP. Funding: CAPES. Supervisor: André Carlos Ponce de Leon Ferreira de Carvalho
146. Leonardo Claudio de Paula e Silva. Arquitetura e Desenvolvimento de um Sistema de Geração Procedural de Múltiplos Conteúdos para Jogos Eletrônicos em Tempo Real. Start: 2022. ICMC-USP. Funding: CNPq. Supervisor: Claudio Fabiano Motta Toledo



147. Leonildo José de Melo de Azevedo. Estratégias para a fusão de dados em Internet das Coisas. Start: 2018. ICMC-USP. Supervisor: Júlio César Estrella
148. Letícia Maria Miquelin. Modelos métodos de solução para otimização energética em redes de abastecimento. Start: 2019. UNESP. Funding: CAPES. Supervisor: Edilaine Martins Soler
149. Livia Teresa Minami Borges. Métodos híbridos para resolução de problemas de despacho. Start: 2020. UNESP. Supervisor: Edilaine Martins Soler
150. Loriz Francisco Sallum. Reconstrução de redes complexas. Start: 2022. ICMC-USP. Funding: CNPq. Supervisor: Francisco Aparecido Rodrigues
151. Luan Vinicius de Carvalho Martins. Graph Neural Networks for Medical Data Visualization. Start: 2020. FFCLRP-USP. Funding: CAPES. Supervisor: Zhao Liang
152. Lucas Augusto Vieira Brito. modelo probabilísticos baseados em grafos para dados heterogêneos e aplicações. Start: 2020. ICMC-USP. Funding: CAPES. Supervisor: Alexandre Cláudio Botazzo Delbem
153. Lucas Pereira Lopes. New machine learning tools. Start: 2019. IME-USP. Supervisor: Nikolai Valtchev Kolev
154. Luis Eduardo Bertotto. Caracterização espaço-temporal da dinâmica da água em perfil vertical de solo não saturado, utilizando a medição de temperatura em fibra óptica aquecida. Start: 2023. EESC-USP. Funding: FAPESP. Supervisor: Edson Cezar Wendland
155. Luiz Eduardo Manzoli Elias. Predição de Crimes. Start: 2022. ICMC-USP. Supervisor: Luis Gustavo Nonato
156. Luiz Otávio Toratti. Discrete differential geometry. Start: 2021. ICMC-USP. Supervisor: Afonso Paiva Neto
157. Luiza Lober de Souza Piva. Dinâmica de sistemas não lineares através de aprendizado de máquina. Start: 2022. ICMC-USP. Funding: CNPq. Supervisor: Francisco Aparecido Rodrigues
158. Marcelo Henrique de Almeida. Não Definido. Start: 2021. ICMC-USP. Supervisor: Francisco Louzada Neto
159. Márcia Lorena Alves. Inferência em redes complexas. Start: 2021. ICMC-USP. Supervisor: Francisco Aparecido Rodrigues
160. Marco Antonio Colombo da Silva. TBA. Start: 2020. ICMC-USP. Supervisor: Rodolfo Ipolito Meneguette
161. Marcos Jardel Henriques. TBA. Start: 2017. ICMC-USP. Supervisor: Francisco Louzada Neto
162. Marcos Vinicius dos Santos Ferreira. Análise de Série Temporal Fuzzy a partir da modelagem de componentes determinísticos e estocásticos. Start: 2020. UFBA. Supervisor: Ricardo Araújo Rios
163. Maria Clara Fava. Previsao de inundacoes urbanas usando sistemas de informacoes voluntarias. Start: 2015. EESC-USP. Funding: CAPES. Supervisor: Eduardo Mendiondo
164. Maria Luiza Teixeira Santos. O problema de distribuição de cestas básicas. Start: 2024. ICMC-USP. Funding: CAPES. Supervisor: Franklina Maria Bragion de Toledo
165. Marina Batalini de Macedo. Reúso de Águas Pluviais visando a Segurança do Nexó Água-Energia-Alimentos. Start: 2017. EESC-USP. Funding: CNPq. Supervisor: Eduardo Mendiondo



166. Marina G. de Oliveira. Modelo de regressão bivariado para dados funcionais. Start: 2019. UFSCar. Funding: CAPES. Co supervisor: Carlos Alberto Ribeiro Diniz
167. Marina Gandolfi. Modelo Skellam Modificado. Start: 2018. UFSCar. Funding: CAPES. Supervisor: Katiane Silva Conceição
168. Marlon Jeske. Ciência de dados para o planejamento da implementação de redes mesh. Start: 2019. Unifesp. Funding: CNPq. Supervisor: Mariá Cristina Vasconcelos Nascimento Rosset
169. Mateus Paranaíba Ribeiro. Simulação da camada-limite atmosférica utilizando Large-eddy simulation. Start: 2020. ICMC-USP. Funding: CAPES. Supervisor: Livia Souza Freire Grion
170. Matheus de Padua Severino. Mixing-controlled supersonic combustion: effects of hydrodynamic instabilities. Start: 2020. ICMC-USP. Supervisor: Leandro Franco de Souza
171. Maurício Rocha Gonçalves. Análise de flexibilidade em problemas de dimensionamento de lotes. Start: 2020. UNESP. Funding: FAPESP. Supervisor: Sílvio Alexandre de Araujo
172. Maycon César Calixto Assis. TBA. Start: 2023. UNESP. Funding: CAPES. Supervisor: Sílvio Alexandre de Araujo
173. Maysam Hedyehloo. Rigidity of maximizing unstable entropy measures. Start: 2022. Institute for research in fundamental sciences. Co supervisor: Ali Tahzibi
174. Michele Maciel Sacramento. Modelos de sobrevivência induzidos por fragilidade. Start: 2019. ICMC-USP. Supervisor: Vicente Garibay Cancho
175. Milton Miranda Neto. Não Definido. Start: 2019. ICMC-USP. Supervisor: Francisco Louzada Neto
176. Mônica Paula de Souza Martins. Abandono em Cálculo I: Investigando essa Realidade. Start: 2019. UNICAMP. Supervisor: Lucio Tunes dos Santos
177. Murilo Cunha dos Santos. Reconhecimento de padrões de dados heterogêneos de múltiplas fontes em tempo real. Start: 2020. ICMC-USP. Funding: CAPES. Supervisor: Alexandre Cláudio Botazzo Delbem
178. Naiara Caroline Aparecido dos Santos. Novos desenvolvimentos na contagem de dados para variáveis latentes. Start: 2019. ICMC-USP. Funding: CAPES. Supervisor: Jorge Luis Bazan Guzman
179. Natan Hilário da Silva. TBA. Start: 2023. ICMC-USP. Supervisor: Adriano Kamimura Suzuki
180. Nixon Jerez Lillo. Improved inference in power-law models and some extensions. Start: 2022. PUC-Chile. Supervisor: Pedro Luiz Ramos
181. Normando Amazonas. Predicting Deforestation from Transportation Data. Start: 2020. ICMC-USP. Supervisor: Luis Gustavo Nonato
182. Oliviana Xavier do Nascimento. Modelagem e resolução de problemas de empacotamento irregular em faixa bidimensional com incerteza na demanda. Start: 2018. ICMC-USP. Funding: CAPES. Supervisor: Marina Andretta
183. Osafu Augustine Egbon. Não Definido. Start: 2019. ICMC-USP. Supervisor: Francisco Louzada Neto
184. Patrice London Guedes. "Smart Automation - To Optimize Aircraft Performance and Improve Flight Safety". Start: 2021. ITA. Supervisor: Roberto Gil Annes da Silva



185. Patricia Shizue Matsumura Ueda. TBA. Start: 2022. Unifesp. Funding: CAPES. Supervisor: Ana Carolina Lorena
186. Patricia Stülp. Novos modelos bivariados para resposta limitada e discreta. Start: 2019. ICMC-USP. Funding: CAPES. Supervisor: Jorge Luis Bazan Guzman
187. Paula Cristina Rohr Ertel. Problema do caixeiro viajante baseado em proximidade. Start: 2023. IME-USP. Funding: CAPES. Supervisor: Ernesto Julián Goldberg Birgin
188. Paula Giovana Rodrigues. Cooperação em redes complexas. Start: 2021. ICMC-USP. Supervisor: Francisco Aparecido Rodrigues
189. Pedro Augusto Araujo da Silva de Almeida Nava Alves. Otimização de Metodologias de Classificação de Eletroencefalograma via Inteligência Artificial no contexto da atividade comportamental e cognitiva de bebês. Start: 2023. ICMC-USP. Funding: CAPES. Supervisor: André Carlos Ponce de Leon Ferreira de Carvalho
190. Pedro Balbão Bazão. Data Driven Computational Mechanics. Start: 2024. ICMC-USP. Funding: CAPES. Supervisor: Roberto Federico Ausas
191. Pedro José Miranda Lugo. Desenvolvimento de instabilidade hidrodinâmica em escoamento estratificado líquido-líquido. Start: 2019. USP. Funding: CAPES. Supervisor: Oscar Mauricio Hernandez Rodriguez
192. Pedro Otavio de Souza Mussatto. Controle ótimo impulsivo. Start: 2024. UNESP. Supervisor: Geraldo Nunes Silva
193. Priscylla Silva. Explainable Machine Learning. Start: 2021. ICMC-USP. Supervisor: Luis Gustavo Nonato
194. Rafael Cerqueira de Campos. Liquid animation. Start: 2017. ICMC-USP. Supervisor: Afonso Paiva Neto
195. Rafael de Lima Sterza. Estabilidade de Escoamento de Jato Viscoelástico Tridimensional. Start: 2021. ICMC-USP. Funding: CAPES. Supervisor: Leandro Franco de Souza
196. Rafael Delalibera Rodrigues. Análise de EEGs utilizando redes complexas. Start: 2018. FFCLRP-USP. Supervisor: Zhao Liang
197. Rafael Rodrigues dos Santos. Índices de variabilidade da frequência cardíaca e apneia obstrutiva do sono: diagnóstico e severidade. Start: 2020. FFCLRP-USP. Funding: CAPES. Co supervisor: Renato Tinós
198. Rafaella Silva Ferreira. Desenvolvimento de Soluções Inteligentes de Aferição Epidemiológica da Covid-19 Frente ao Desafio da Escassez de Dados no Contexto Nacional. Start: 2023. UNESP. Funding: CAPES. Supervisor: Wallace Correa de Oliveira Casaca
199. Renato da Silva Fernandes. Método de estimação para modelos de diagnóstico cognitivo. Start: 2019. ICMC-USP. Supervisor: Jorge Luis Bazan Guzman
200. Ricardo Aurélio Fragoso de Sousa. Proposta de metodologia para categorização dos vasos de pressão para fins da NR-13 por meio da Engenharia de Confiabilidade. Start: 2022. UFPE. Co supervisor: Paulo Henrique Silva



201. Ricardo de J. C. Assis. Uma nova alternativa de algoritmo de predição. Start: 2021. UFSCar. Supervisor: Carlos Alberto Ribeiro Diniz
202. Rodrigo Aécio Felix. Desenvolvimento e aplicação de avaliações formativas em rede de ensino utilizando testes adaptativos computadorizados. Start: 2022. ICMC-USP. Supervisor: Mariana Cúri
203. Rodrigo Dutra Garcia. Explorando Blockchain para Segurança em Códigos Abertos. Start: 2023. ICMC-USP. Supervisor: Jó Ueyama
204. Rodrigo Henrique Ramos. Discovery of cancer genes patterns using super pathways networks topology. Start: 2020. ICMC-USP. Supervisor: Adenilso da Silva Simão
205. Rodrigo Sorbilli Cardoso de Sousa. Metodologia de determinação do impacto aerodinâmico do acréscimo de gelo em aeronaves. Start: 2021. ITA. Supervisor: Roberto Gil Annes da Silva
206. Rogério da Silva Matos. Problema de roteamento de veículos com base na proximidade. Start: 2022. IME-USP. Funding: CAPES. Supervisor: Ernesto Julián Goldberg Birgin
207. Rômulo da Silva Marques. Novas Ordens para o Problema do Loop Fechado. Start: 2021. UNICAMP. Funding: CAPES. Supervisor: Carlile Campos Lavor
208. Roy Elías Alva Navarro. Modeling and simulation of installation effects on noise generated by propellers. Start: 2023. ITA. Supervisor: André Valdetaro Gomes Cavalieri
209. Samara Ferreira Dias. Estudos em Problemas de Roteamento Agrícola. Start: 2023. UNESP. Supervisor: Silvio Alexandre de Araujo
210. Samuel Rocha Silva. Liquid animation. Start: 2018. ICMC-USP. Funding: CNPq. Supervisor: Afonso Paiva Neto
211. Saulo Neves Matos. Aliando processamento de imagens e sensores para prever enchentes. Start: 2023. ICMC-USP. Funding: Fundep. Supervisor: Jó Ueyama
212. Sérgio Baldo Junior. Uso de algoritmos genéticos para explicabilidade de modelos de aprendizado de máquina. Start: 2024. FFCLRP-USP. Co supervisor: Renato Tinós
213. Shayane da Silva Carvalho. Problemas de Otimização na Área da Saúde (Coorientadora Mariá Cristina Vasconcelos Nascimento Rosset). Start: 2023. ICMC-USP. Funding: CAPES. Supervisor: Maristela Oliveira dos Santos
214. Sherlon Almeida da Silva. Self-supervised learning for visual cross-domain information retrieval based on multimodal queries. Start: 2021. ICMC-USP. Supervisor: Moacir Antonelli Ponti
215. Soroor Salavati. Rock-type classification in pre-salt fields. Start: 2020. UNICAMP. Funding: Shell Inc. Supervisor: Anderson de Rezende Rocha
216. Stephane de Freitas Schwarz. Phishing Detection. Start: 2021. UNICAMP. Funding: SINCH Inc. Supervisor: Anderson de Rezende Rocha
217. Thiago Felipe Castro Carrenho. Métodos numéricos para o sistema águas rasas acoplado à equação de Exner. Start: 2024. UNICAMP. Funding: FAPESP. Supervisor: Maicon Ribeiro Correa
218. Thyago Tenório Martins de Oliveira. Abordagem baseada em sabedoria das multidões para criação de loops internos em Sistemas Tutores Inteligentes. Start: 2019. ICMC-USP. Funding: CAPES. Supervisor: Seiji Isotani



219. Tiago Priolli Monteiro. Coupled Simulations of Leading-Edge Suction Parameter Modulated Non-Linear Unsteady Vortex Lattice Method with Wind Tunnel Validation. Start: 2016. ITA. Supervisor: Roberto Gil Annes da Silva
220. Uebert Gonçalves Moreira. Multiscale methods for fractured petroleum reservoirs. Start: 2019. ICMC-USP. Funding: Petrobras S.A.. Supervisor: Fabrício Simeoni de Sousa
221. Victor Castro Nassif de Faria. On building ensembles of diverse and competent classifiers. Start: 2022. Unifesp. Funding: FAPESP. Supervisor: Ana Carolina Lorena
222. Victor Hugo Nascimento Rocha. Detecção de Argumentos Probabilísticos. Start: 2021. EP-USP. Funding: CAPES. Supervisor: Fabio Gagliardi Cozman
223. Vinicius Cabral da Silva. Condições de otimalidade para problemas de controle. Start: 2022. UNESP. Supervisor: Geraldo Nunes Silva
224. Vinicius Lopes. TBA. Start: 2021. ICMC-USP. Funding: CNPq. Supervisor: Seiji Isotani
225. Walter Affonso Junior. Análise exergética de aeronaves de propulsão híbrido elétrica. Start: 2019. ITA. Supervisor: Roberto Gil Annes da Silva
226. Wanderley Pires Cunha. Avaliação metrológica em laboratório de configurações de propriedades de massa de engenhos espaciais com voo propulsado e autômato. Start: 2021. ITA. Supervisor: Maria Luísa Collucci da Costa Reis
227. Wilmax Marreiro Cruz. Luvas Sensitivas no Aprendizado de Piano. Start: 2016. ICMC-USP. Funding: CAPES. Supervisor: Seiji Isotani
228. Ximena Pocco. Crime Pattern Understanding. Start: 2020. ICMC-USP. Funding: FAPESP. Supervisor: Luis Gustavo Nonato
229. Ygor Arthur Cesar de Jesus. Ergodicidade de fluxos parcialmente hiperbólicos. Start: 2024. UNI-CAMP. Funding: FAPESP. Co supervisor: Ali Tahzibi
230. Yuri Verges. Line integral on discrete grids and applications. Start: 2022. IME-USP. Supervisor: Nikolai Valtchev Kolev

A.2 COMPLETED PH.D'S

1. . Alan Reis. Uma contribuição ao estudo da interação rio-aquífero em áreas tropicais, utilizando a temperatura como traçador. 2023. EESC-USP. Funding: CAPES. Supervisor: Edson Cezar Wendland
2. . Alessandra Campos dos Santos. Estimativa da evapotranspiração em uma área remanescente de Cerrado sensu stricto utilizando metodologias de Sensoriamento Remoto e Eddy Covariance. 2023. EESC-USP. Funding: CAPES. Supervisor: Edson Cezar Wendland
3. . Alex de la Cruz Huayanay. Modelos alternativos para classificação em dados desbalanceados. 2023. ICMC-USP. Funding: CAPES. Supervisor: Jorge Luis Bazán Guzmán
4. . Anderson Paulo Avila Santos. HostAssociatedMetagenomeDB: a public repository of curated and standardized metadata of non-human host-associated metagenomes. 2024. ICMC-USP. Supervisor: André Carlos Ponce de Leon Ferreira de Carvalho



5. . André Simões Ballarin. Future perspectives of extreme events and water availability in Brazilian catchments. 2024. EESC-USP. Funding: FAPESP. Supervisor: Edson Cezar Wendland
6. . Angelo Garangau Menezes. Continual Object Detection with Deep Neural Networks. 2023. ICMC-USP. Funding: CAPES. Supervisor: André Carlos Ponce de Leon Ferreira de Carvalho
7. . Arianne Alves da Silva. Roteamento de Estoque e Transporte de Carga Multimodal: Otimização Bi-objetivo com Considerações Ambientais e Econômicas. 2024. ICMC-USP. Supervisor: Maristela Oliveira dos Santos
8. . Caio Flávio Martinez Fontoura Junior. Avaliação de Métricas de Inpainting Digital para Aferição da Qualidade na Extração de Feições em Imagens de Sensoriamento Remoto. 2024. UNESP. Funding: CAPES. Supervisor: Wallace Correa de Oliveira Casaca
9. . Caio Lopes Borges Andrade. Uso de Aprendizado de Máquina na identificação de plasmócitos em lâminas de aspirado de medula óssea de casos de Mieloma Múltiplo. 2023. UFBA. Funding: CAPES. Co-supervisor: Ricardo Araújo Rios
10. . Caio Paziani Tomazella. Modelos e Métodos de Solução para o problema de Dimensionamento de Lotes e Compra de Matéria Prima . 2024. ICMC-USP. Supervisor: Maristela Oliveira dos Santos
11. . Carlos Alberto Valentim Junior. Fractional Mathematical Oncology: cancer dynamics from an interdisciplinary viewpoint. 2023. FZEA - USP. Funding: CAPES. Supervisor: José Antonio Rabi
12. . Claudia Evelyn Escobar Montecino. Using VAE for Incomplete Educational Data. 2023. ICMC-USP. Funding: CAPES. Supervisor: Mariana Cúri
13. . Daniel Felipe da Silva Santos. Rastreamento de Pessoas em Vídeo Utilizando Aprendizado em Profundidade. 2024. UNESP. Funding: Petrobras. Supervisor: João Paulo Papa
14. . Dimaghi Schwambach. Hydrological and erosional dynamics: Responses to changes in land uses and climate in the Cerrado biome. 2024. EESC-USP. Funding: FAPESP. Supervisor: Edson Cezar Wendland
15. . Éder Silva de Brito. Reliability analysis of repairable systems considering unobserved heterogeneity and competing risks. 2023. USP. Co-supervisor: Paulo Henrique Ferreira da Silva
16. . Elidiane Pereira dos Santos. FRB-BlinGui: Um Modelo Baseado em Regras Fuzzy para Previsão de Riscos de Colisão com Obstáculos em Apoio a Pessoas com Deficiência Visual. 2024. UFBA. Funding: CAPES. Supervisor: Tatiane Nogueira Rios
17. . Evandro Ortigossa. T-Explainer: uma abordagem para a explicabilidade em aprendizado de máquina baseada em gradientes. 2024. ICMC-USP. Funding: CAPES. Supervisor: Luis Gustavo Nonato
18. . Fabiano Rodrigues Coelho. Diagnóstico e seleção de modelos com resposta binária e função de ligação assimétrica. 2023. ICMC-USP. Funding: CAPES. Supervisor: Cibele Maria Russo Novelli
19. . Francis Lorena Larreal Herrera. Restauração Inexata com avaliação imprecisa da função objetivo e das restrições. 2023. UNICAMP. Co-supervisor: Luís Felipe Cesar da Rocha Bueno
20. . Gabriel Capiteli Bertocco. Self-supervised learning for fully unannotated person re-identification in real-world applications. 2024. UNICAMP. Funding: FAPESP. Supervisor: Anderson de Rezende Rocha



21. . Gean Trindade Pereira. Meta-Learning applied to Neural Architecture Search. Towards new interactive learning approaches for indexing and analyzing images from expert domains. 2024. ICMC-USP. Funding: FAPESP. Supervisor: André Carlos Ponce de Leon Ferreira de Carvalho
22. . Guilherme Brandão Martins. Floresta de Caminhos Ótimos no Auxílio a Filtragem Colaborativa. 2023. UFSCar. Funding: CAPES. Supervisor: João Paulo Papa
23. . Hugo Felipe da Silva Lui. Investigation of shock-boundary layer interactions in a supersonic axial turbine. 2024. UNICAMP. Funding: FAPESP. Supervisor: William Roberto Wolf
24. . Josimar Edinson Chire Saire. Classificação de Alto Nível Baseada em Redes Complexas. 2023. FFCLRP-USP. Funding: CAPES. Supervisor: Zhao Liang
25. . Jullian Souza Sone. A tale of two cities: public preferences for nature-based solutions and the effect of drought-related experiences on willingness to improve water security. 2023. EESC-USP. Funding: CAPES. Supervisor: Edson Cezar Wendland
26. . Kennedy Anderson Guimarães de Araujo. O problema de sequenciamento job shop flexível com flexibilidade de sequência e efeito de aprendizagem baseado em posição. 2024. IME-USP. Funding: CAPES. Supervisor: Ernesto Julián Goldberg Birgin
27. . Leo Sampaio Ferraz Ribeiro. Cross Domain Visual Search with Feature Learning using Multi-stream Transformer-based Architectures. 2023. ICMC-USP. Funding: FAPESP. Supervisor: Moacir Antonelli Ponti
28. . Maria Gabriela Valeriano. Machine Learning Models for healthcare: a data-centric approach. 2024. Unifesp. Funding: CAPES. Supervisor: Ana Carolina Lorena
29. . Pedro Arbs Paiva. An instance space analysis of classification datasets. 2023. ITA. Supervisor: Ana Carolina Lorena
30. . Pedro Henrique Toledo de Oliveira Sousa. Uma abordagem Bayesiana para representação de dados funcionais e seleção de variáveis em regressão funcional. 2023. UNICAMP. Funding: CAPES. Supervisor: Ronaldo Dias
31. . Pedro Paulo de Carvalho Brito. Control of surface imperfections on the transition of boundary layers. 2023. ITA. Funding: CNPq. Supervisor: André Valdetaro Gomes Cavalieri
32. . Robson Parmezan Bonidia. BioAutoML: Democratizing Machine Learning in Life Sciences. 2024. ICMC-USP. Funding: CAPES. Supervisor: André Carlos Ponce de Leon Ferreira de Carvalho
33. . Rodrigo Barbosa Moreira. Um Princípio do Máximo Assintótico e uma Condição de Qualificação Associada para Controle Ótimo com Restrições Mistas. 2024. UNESP. Funding: CAPES. Supervisor: Valeriano Antunes de Oliveira
34. . Rodrigo Franciquini da Silva. Spectral Analysis for Anomaly Detection in Dynamic Networks with Attributes. 2023. Unifesp. Funding: FAPESP. Supervisor: Mariá Cristina Vasconcelos Nascimento Rosset
35. . Tarcísio Costa Déda Oliveira. Closed-loop control of unsteady flows: nonlinear control techniques via extremum seeking and neural networks. 2023. UNICAMP. Funding: FAPESP. Supervisor: William Roberto Wolf



36. . Thales de Oliveira Gonçalves. Graph Neural Networks: contributions and advancements. 2024. ICMC-USP. Funding: CAPES. Supervisor: Luis Gustavo Nonato
37. . Thiago José dos Santos Vieira. Optimization of aircraft routing with crew pairing for nonscheduled air transportation. 2024. UFSCar. Funding: FAPESP. Supervisor: Pedro Augusto Munari Junior
38. . Tito Livio. Modelagem de sistemas complexo reparáveis para determinação de um política de manutenção ótima. 2023. UFSCar. Funding: . Supervisor: Vera Lucia Damasceno Tomazella
39. . Verônica Vannini. Harpia: A Hybrid System for UAV Missions. 2023. ICMC-USP. Funding: CAPES. Supervisor: Claudio Fabiano Motta Toledo
40. . Victor Hugo Andrade Soares. Techniques for cattle detection, duplicate removal and counting in large pasture areas using multiple aerial images. 2023. ICMC-USP. Co-supervisor: Moacir Antonelli Ponti
41. . Yangyang Chen. Modelos espaciais temporais via ondaletas. 2023. USP. Funding: FAPESP. Co-supervisor: Ronaldo Dias

A.3 ONGOING M.Sc.

1. Abraão da Silva Guimarães. Estudo sobre um problema de planejamento de produção agrícola familiar orgânica usando técnicas de Otimização. Start: 2024. ICMC-USP. Funding: CAPES. Supervisor: Marina Andretta
2. Alex Augusto Nunes Machado. Heurísticas de Decomposição para um Problema Integrado de Dimensionamento de lotes e roteamento. Start: 2023. ICMC-USP. Supervisor: Maristela Oliveira dos Santos
3. Alex Fidalgo Zamikhowsky Lopes. Avaliação da Técnica Stacking no Contexto de Ciências Atmosféricas. Start: 2023. EACH-USP. Supervisor: Marcelo de Souza Lauretto
4. Alex Paranahyba de Abreu. Problemas de roteamento de veículos com coletas e entregas sob incertezas nos tempos de viagem e demandas. Start: 2022. UFSCar. Supervisor: Pedro Augusto Munari Junior
5. Aline Martins Nascimento Belchior. Identificação de Vieses em Bases de Dados Criminais. Start: 2024. ICMC-USP. Supervisor: Luis Gustavo Nonato
6. Amanda Vitória Alves De Paula. The Defective Gompertz and Inverse-Gaussian regression models in the presence of competing and complementary risks for modeling long-term survivors. Start: 2023. UNESP. Supervisor: Pedro Luiz Ramos
7. Amanda Zanluca. TBA. Start: 2024. UFPR. Supervisor: Anderson de Rezende Rocha
8. Ana Catarina Pais Pereira. Deep Learning Techniques Applied to The Diagnostic of Focal Cortical Dysplasia MRI. Start: 2024. Universidade de Coimbra. Co supervisor: André Carlos Ponce de Leon Ferreira de Carvalho
9. Ana Letícia Garcez Vicente. Redes Neurais para Grafos aplicadas a classificação de sintomas de autismo em dados de fMRI. Start: 2023. ICMC-USP. Funding: FAPESP. Supervisor: André Carlos Ponce de Leon Ferreira de Carvalho



10. Andrés Mauricio Ibarra Rodríguez. TBA. Start: 2024. IME-USP. Funding: CAPES. Supervisor: Ernesto Julián Goldberg Birgin
11. Andrés Rodrigues Oliveira. Geometria de Distâncias e o Alpha Fold. Start: 2023. UNICAMP. Funding: CAPES. Supervisor: Carlile Campos Lavor
12. Angelo Victor Kraemer Foletto. Combinando as camadas IoT de sensores e do portal para detectar enchentes. Start: 2021. ICMC-USP. Funding: CAPES. Supervisor: Jó Ueyama
13. Anton Bulle Labate. Infusão de Análise Sintática e Semântica em Transformers. Start: 2024. EP-USP. Funding: FUSP. Supervisor: Fabio Gagliardi Cozman
14. Arthur Dantas Mangussi. An unified approach for dealing with missing and noise data. Start: 2022. Unifesp. Funding: FAPESP. Supervisor: Ana Carolina Lorena
15. Arthur Dorigueto Delevedove. Crime Analysis. Start: 2022. ICMC-USP. Funding: CAPES. Supervisor: Afonso Paiva Neto
16. Artur Souza Freitas. Avaliação do desempenho de características sociais do nó como medida de seleção de veículos em redes veiculares de aprendizado federado. Start: 2020. ICMC-USP. Supervisor: Júlio César Estrella
17. Atila Ferreira Pessoa. Técnicas de Machine Learning aplicadas ao estudo de intrusão de vapores. Start: 2021. ICMC-USP. Supervisor: Fabrício Simeoni de Sousa
18. Beatriz Ribeiro Bello. Heurísticas para otimização energética em sistemas de distribuição de água. Start: 2022. UNESP. Funding: CAPES. Supervisor: Edilaine Martins Soler
19. Benedito Faustini. Modelos de volatilidade estocástica e metaheurísticas: um ensaio do portfólio ótimo. Start: 2021. ICMC-USP. Supervisor: Victor Claudio Bento de Camargo
20. Bernardo Mota Barbosa. Análise de risco de equipamentos da indústria do petróleo. Start: 2021. ICMC-USP. Supervisor: Antonio Castelo Filho
21. Brenda Lima Boaventura. Aprendizado de máquina no contexto do pareamento e ponderação pelo escore de propensão. Start: 2021. UFBA. Funding: FAPESB. Co supervisor: Paulo Henrique Ferreira da Silva
22. Breno Ceconello. Métodos de elementos finitos aplicados ao escamento em redes complexas. Start: 2023. UNICAMP. Funding: CAPES. Supervisor: Maicon Ribeiro Correa
23. Breno Kenji Ogata. Control Strategies for Deformable Microswimmers. Start: 2023. ICMC-USP. Funding: CAPES. Supervisor: Roberto Federico Ausas
24. Bruno Aparecido Silvestre. Avaliação formativa adaptativa com base em modelos de variáveis latentes no Moodle. Start: 2023. ICMC-USP. Supervisor: Mariana Cúri
25. Bruno Edson dos Santos. Métodos de solução para o problema de empacotamento de peças irregulares em objetos irregulares. Start: 2024. UEL. Funding: CNPq. Supervisor: Aline Aparecida de Souza Leão
26. Bruno Miquéias de Melo. Utilização de algoritmo de inteligência artificial para otimização da manutenção preventiva em bombas submersas. Start: 2023. FFCLRP-USP. Supervisor: Renato Tinós



27. Callebe Rocha Reis. Métodos de decomposição de domínio multiescala para o modelo de Stokes-Brinkman. Start: 2023. ICMC-USP. Supervisor: Fabrício Simeoni de Sousa
28. Camila Braz Soares. TBA. Start: 2023. UFBA. Co supervisor: Paulo Henrique Silva
29. Camila Machado de Araújo. Automatic Analysis of X-Ray Diffraction Patterns with Deep Learning. Start: 2022. UNICAMP. Funding: Instituto Serrapilheira. Supervisor: Anderson de Rezende Rocha
30. Carlos Alonso Rodrigues. Análise de Estabilidade de Camadas Limite Compressíveis. Start: 2021. UNICAMP. Supervisor: William Roberto Wolf
31. Cayan Dantas. TBD. Start: 2023. UNICAMP. Funding: CAPES. Supervisor: William Roberto Wolf
32. César Ambrogi Ferreira do Lago. Otimização de Medidas Mitigadoras da Drenagem Urbana usando Biorretenção. Start: 2016. EESC-USP. Funding: CAPES. Supervisor: Eduardo Mario Mendiondo
33. Chiara Cotta e Tilton. Desenvolvimento de métodos semi-empíricos para avaliação do efeito instalativo da hélice na aeronave aplicáveis às fases iniciais de projeto de uma aeronave. Start: 2023. ITA. Supervisor: Roberto Gil Annes da Silva
34. Claudio Generoso. TBA. Start: 2023. Unifesp. Supervisor: Ana Carolina Lorena
35. Connor Davis Sterrett. Learning from COVID: A Credit-Risk Pandemic Playbook. Start: 2020. ICMC-USP. Supervisor: Gleici da Silva Castro Perdoná
36. Daniel Coutinho Ayub. Não Definido. Start: 2019. ICMC-USP. Supervisor: Francisco Louzada Neto
37. Daniel Martins de Souza. Uso de Algoritmos Genéticos para Investigar a Interação de Neurônios de uma Rede Neural Recorrente em Ratos Virtuais. Start: 2024. FFCLRP-USP. Funding: CNPq. Supervisor: Renato Tinós
38. Daniel Ricardo Dallos Sanabria. Estudo experimental e análise de dados de escoamento bifásico a baixas e altas pressões em inclinações ascendentes e descendentes. Start: 2024. USP. Funding: FUSP. Supervisor: Oscar Mauricio Hernandez Rodriguez
39. Daniel Shinoda Pascoal. Marketing Mix Modeling for Online Retailers - Optimizing advertising budget allocation in a multi-geography and multi-product scenario with limited past data. Start: 2020. ICMC-USP. Supervisor: Victor Claudio Bento de Camargo
40. Débora Fonseca de Abreu Rangel. Abordando Fundamentos de Matemática no Ensino Médio,. Start: 2018. UNICAMP. Funding: CAPES. Supervisor: Lucio Tunes dos Santos
41. Débora Leandro de Andrade. Estudo do comportamento da dinâmica de voo de veículos com propulsão distribuída. Start: 2023. ITA. Supervisor: Roberto Gil Annes da Silva
42. Dérick Welman. TBA. Start: 2022. ITA. Supervisor: Ana Carolina Lorena
43. Eduardo da Silva Afonso. Explainable AI. Start: 2021. FFCLRP-USP. Supervisor: Zhao Liang
44. Eduardo de Andrade Montez. Modelos Geoespaciais Aplicados à previsão e planejamento de demanda por produto e região geográfica no e-commerce. Start: 2022. ICMC-USP. Supervisor: Cibele Maria Russo Novelli

45. Eduardo Santos Carlos de Souza. Segmentação e Classificação de Terreno a Partir de Imagens Aéreas em Cenários com Poucos Recursos. Start: 2020. ICMC-USP. Funding: CNPq. Supervisor: André Carlos Ponce de Leon Ferreira de Carvalho
46. Eduardo Soares Zanutti. A otimização de sortimento e de preços na indústria de moda rápida: uma abordagem de modelos lineares generalizados hierárquicos. Start: 2023. ICMC-USP. Supervisor: Victor Claudio Bento de Camargo
47. Eleandro Santana Bernachi. Aproximação Numérica de Funções Transcendentes. Start: 2018. UNICAMP. Supervisor: Lucio Tunes dos Santos
48. Fausto Marques Pinheiro Junior. Métodos Estatísticos em Geometria de Distâncias. Start: 2023. UNICAMP. Funding: CAPES. Supervisor: Carlile Campos Lavor
49. Felipe Alves Siqueira. Deep Learning applied to Portuguese text data. Start: 2022. ICMC-USP. Funding: CAPES. Supervisor: André Carlos Ponce de Leon Ferreira de Carvalho
50. Felipe Augusto Arguello de Souza. Observatório Cidadão para a Segurança Hídrica. Start: 2017. EESC-USP. Funding: CNPq. Supervisor: Eduardo Mario Mendiondo
51. Felipe Dutra Lisboa. Uma Abordagem para Detecção de Novas Classes para Aprendizado Contínuo. Start: 2023. UNESP. Supervisor: André Luis Debiaso Rossi
52. Felipe Guilermmo Santuche Moleiro. Animação de fluidos usando técnicas de machine learning. Start: 2024. ICMC-USP. Funding: CAPES. Supervisor: Fabrício Simeoni de Sousa
53. Felipe Marins Beloso. Tópicos Interdisciplinares de Matemática Geografia. Start: 2018. UNICAMP. Funding: CAPES. Supervisor: Lucio Tunes dos Santos
54. Fernanda Bartolo dos Santos Saran. Modelagem estatística da impunidade: métodos inferenciais e preditivos para dados de crimes no estado de São Paulo. Start: 2024. ICMC-USP. Supervisor: Cibele Maria Russo Novelli
55. Gabriel Couto Tabak. Item Response Theory: Autoencoders. Start: 2022. ICMC-USP. Supervisor: Mariana Cúri
56. Gabriel Gomes Ribeiro. TBA. Start: 2023. UFBA. Co supervisor: Paulo Henrique Silva
57. Gabriel Grandemagne. TBA. Start: 2024. UFRS. Co supervisor: Anderson de Rezende Rocha
58. Gabriel Lucas da Silva. Smoke animation. Start: 2021. ICMC-USP. Supervisor: Afonso Paiva Neto
59. Gabriel Pires. Otimização de portfólios utilizando aprendizado contínuo. Start: 2023. UNESP. Supervisor: André Luis Debiaso Rossi
60. Gabriel Vinicius Bacci. O Problema de Roteamento de Veículos Ativos e Passivos. Start: 2024. ICMC-USP. Supervisor: Maristela Oliveira dos Santos
61. Gabriela Nunes Martins. Um estudo do problema de designação de locais de armazenagem no contexto de e-commerce. Start: 2021. Unifesp. Supervisor: Mariá Cristina Vasconcelos Nascimento Rosset
62. George Anderson Alves dos Santos. Desenvolvimento de metodologias estatísticas para modelagem e monitoramento da degradação da performance de sistemas reparáveis. Start: 2023. UFBA. Funding: FAPESB. Supervisor: Paulo Henrique Silva



63. Gilsiley Henrique Darú. Análise de dados aplicados à distribuição geográfica de redes de transporte. Start: 2021. ICMC-USP. Supervisor: Antonio Castelo Filho
64. Gilson Vicente Soares Júnior. Estimativa do recalque devido à construção de túneis aplicando aprendizado de máquina a dados de sensoriamento remoto. Start: 2023. ITA. Supervisor: Dimas Betioli Ribeiro
65. Giuliano Pantarotto. Entropia e algoritmo de busca com erros. Start: 2023. ICMC-USP. Funding: CAPES. Supervisor: Ali Tahzibi
66. Guilherme Augusto Souza da Luz. Investigação da Estabilidade de escoamentos Viscoelásticos no Regime Laminar-Turbulento. Start: 2023. UNESP. Supervisor: Analice Costacurta Brandi
67. Guilherme Hidaca. Utilização de sensor de impedância elétrica do tipo malha de fios para estudo de padrões de escoamento gás-denso/líquido. Start: 2023. USP. Funding: CAPES. Supervisor: Oscar Mauricio Hernandez Rodriguez
68. Guilherme Mauri Faria da Cunha. Detecção automática de defeitos em processo de estampagem através da visão computacional. Start: 2023. ICMC-USP. Supervisor: Fabrício Simeoni de Sousa
69. Gustavo Contini Torres. Using machine learning to predict conditions of social vulnerability in Uganda. Start: 2020. ICMC-USP. Supervisor: Victor Claudio Bento de Camargo
70. Gustavo de Moura Souza. Aprendizado por Reforço em Processos Decisórios Markovianos aplicado em Jogos de Estratégia de Tempo Real. Start: 2021. ICMC-USP. Supervisor: Claudio Fabiano Motta Toledo
71. Gustavo Freire. Otimização Multiobjetivo como estratégia para diminuição do tempo de resposta em aplicações de Internet das Coisas. Start: 2021. ICMC-USP. Supervisor: Júlio César Estrella
72. Helder José Bastos Ramos. Um Novo Método De Aprendizado Federado Com Detecção De Mudança De Comportamento. Start: 2023. UFBA. Supervisor: Ricardo Araújo Rios
73. Herlisson Maciel Bezerra. Modelagem não-supervisionada de dados georreferenciados. Start: 2023. ICMC-USP. Supervisor: Cibele Maria Russo Novelli
74. Hiago Vinícius Benedito dos Santos. Anti-vírus descentralizado. Start: 2024. ICMC-USP. Supervisor: Jó Ueyama
75. Humberto Prates. Fuzzy Large Language Models to improve interpretability of source code. Start: 2023. UFBA. Supervisor: Tatiane Nogueira Rios
76. Igor Martinelli. Avaliação de dados de treinamento utilizando métricas de dinâmica do treinamento. Start: 2023. ICMC-USP. Supervisor: Moacir Antonelli Ponti
77. Ivalbert Pereira dos Santos. Aceleração dos modelos de vetores de suporte para dados massivos: métodos de seleção de vetores. Start: 2020. UFBA. Supervisor: Anderson de Rezende Rocha
78. Jadson Crislan Santos Costa. Open-set Spoofing Detection. Start: 2023. UNICAMP. Funding: Gri-aule Biometrics. Supervisor: Anderson de Rezende Rocha
79. João Gabriel Campos. Corpus para Geração de Texto em Português. Start: 2020. EP-USP. Supervisor: Fabio Gagliardi Cozman



80. João Guilherme Pereira. Análise de sinais EEG via redes complexas. Start: 2021. FFCLRP-USP. Funding: FAPESP. Supervisor: Zhao Liang
81. João Marcos Agapito Froes. Estudo experimental do efeito de transientes rápidos na hidrodinâmica de escoamento bifásico com gás denso. Start: 2024. USP. Funding: CAPES. Supervisor: Oscar Mauricio Hernandez Rodriguez
82. João Matheus Siqueira Souza. Explorando a relação entre patrulhamento e crime. Start: 2022. ICMC-USP. Supervisor: Luis Gustavo Nonato
83. João Victor Duda do Amaral. Heurísticas para o Problema de Produção e Distribuição de Cartões de Crédito. Start: 2022. ICMC-USP. Funding: CNPq. Supervisor: Maristela Oliveira dos Santos
84. João Vitor Mariano Correia. Modelos de Linguagem Pré-treinados Enriquecidos aplicados a Recuperação da Informação. Start: 2023. UNESP. Supervisor: João Paulo Papa
85. Jorge André D. Barreto. TBD. Start: 2021. ICMC-USP. Supervisor: Rodolfo Ipolito Meneguette
86. Jorge Andres Piñero Delgadillo. Preliminary Study of the high-pressure behavior under the wing generated during Wing-In-Ground craft cruise flight. Start: 2022. ITA. Supervisor: Roberto Gil Annes da Silva
87. Jose Alberto Coretti. TBA. Start: 2021. ICMC-USP. Supervisor: Rodolfo Ipolito Meneguette
88. Jose Alexandre Ferreira da Silva. Não Definido. Start: 2020. ICMC-USP. Supervisor: Francisco Louzada Neto
89. José Marques. Modelagem Matemática para a previsão de jogos de futebol. Start: 2024. Unifesp. Supervisor: Luis Felipe Cesar da Rocha Bueno
90. Juan Sebastian Castano Franco. Estudo de variantes do algoritmo de Lloyd para encontrar conjuntos de pontos uniformemente espaçados. Start: 2023. IME-USP. Funding: CNPq. Supervisor: Ernesto Julián Goldberg Birgin
91. Júlia Demori Guizardi. TBA. Start: 2024. IME-USP. Funding: CAPES. Supervisor: Ernesto Julián Goldberg Birgin
92. Juliana dos Santos Poloni. Avaliação do conceito de Criticidade de Bacias Hidrográficas Brasileiras: Contribuições para Gestão de Recursos Hídricos e Segurança Hídrica. Start: 2023. EESC-USP. Funding: CNPq. Supervisor: Edson Cezar Wendland
93. Juliana Shibaki Camargo. Uso de técnicas de aprendizado de máquina para combinar métodos de previsão. Start: 2020. ICMC-USP. Co supervisor: Marinho Gomes de Andrade Filho
94. Kennedy Bacule dos Santos. Aprendizagem profunda para dados de sobrevivência e genética. Start: 2021. ICMC-USP. Funding: CAPES. Supervisor: Mariana Cúri
95. Lais Milene Gomes Dionizio. Estudo do ambiente de flow-shop resumable com buffer ilimitado. Start: 2022. EP-USP. Supervisor: Débora Pretti Ronconi
96. Larissa Carolina Correa Neves. TBA. Start: 2023. ICMC-USP. Supervisor: Adriano Kamimura Suzuki
97. Larissa Oliveira Moutinho da Silva. Propagação de rumores em redes com triângulos. Start: 2022. ICMC-USP. Supervisor: Thomas Kaue Dal Maso Peron



98. Larissa Passos. Estudo de modelos matemáticos o para problema da mochila bidimensional irregular. Start: 2023. UEL. Supervisor: Aline Aparecida de Souza Leão
99. Leandro Júnio de Oliveira Silva. Statistics of turbulent boundary layers developing under different pressure gradients. Start: 2022. UNICAMP. Funding: FAPESP. Supervisor: William Roberto Wolf
100. Leonardo Bahiense Lopes. Desenvolvimento De Uma Nova Arquitetura De Gnn Para Modelagem De Aminoácidos. Start: 2023. UFBA. Supervisor: Ricardo Araújo Rios
101. Leonardo Pereira de Almeida Campos. Resolução do problema de Fluxo de Potência Ótimo Reativo com a incorporação de fontes renováveis de energia. Start: 2022. UNESP. Supervisor: Edilaine Martins Soler
102. Leticia Ferreira Reis. Não Definido. Start: 2021. ICMC-USP. Supervisor: Francisco Louzada Neto
103. Lucas Akio Senaga Onuki. Count Regression Models with alternative distributions. Start: 2021. ICMC-USP. Supervisor: Jorge Luis Bazan Guzman
104. Lucas dos Santos Betioli. O Uso de Aprendizado de Máquina e Tractografia na Identificação do Hotspot para Estimulação Magnética Transcraniana. Start: 2023. FFCLRP-USP. Funding: CNPq. Co supervisor: Renato Tinós
105. Lucas Feitosa de Souza. Numerical investigation of an airfoil under light dynamic stall. Start: 2022. UNICAMP. Funding: FAPESP. Supervisor: William Roberto Wolf
106. Lucas Ferreira Moura Oliveira. Métodos de Galerkin Descontínuo para as Equações de Saint-Venant. Start: 2024. UNICAMP. Funding: CAPES. Supervisor: Maicon Ribeiro Correa
107. Lucas Henrique de Lima Antonio. TBA. Start: 2024. UNESP. Supervisor: Rodolfo Ipolito Meneguette
108. Lucas Julião. Tópicos em Logística - à definir. Start: 2022. Unifesp. Funding: CAPES. Supervisor: Luis Felipe Cesar da Rocha Bueno
109. Lucas Viana Reis. Medidas empíricas em sistemas dinâmicos. Start: 2023. ICMC-USP. Funding: FAPESP. Supervisor: Ali Tahzibi
110. Luis Henrique Morelli. Arquiteturas Neurais Leves para a Classificação de Boletins Diários de Perfuração em Poços de Petróleo. Start: 2023. UNESP. Funding: Petrobras. Supervisor: João Paulo Papa
111. Luísa Coelho Bolsoni. Modelos de Séries Temporais Financeiras com Técnicas de Ciência de Dados. Start: 2020. ICMC-USP. Supervisor: Marinho Gomes de Andrade Filho
112. Luiz Carlos Vendrame Junior. Utilização de algoritmos genéticos para definição de frete de retorno para transporte rodoviário no Porto de Santos. Start: 2023. ICMC-USP. Supervisor: Victor Claudio Bento de Camargo
113. Luiz F. de A. Silva. Classificação politômica: Um algoritmo alternativo. Start: 2022. UFSCar. Funding: CAPES. Supervisor: Carlos Alberto Ribeiro Diniz
114. Luiz Fernando Merli de Oliveira Sementille. TBA. Start: 2023. UNESP. Funding: CAPES. Supervisor: João Paulo Papa
115. Luiz Guilherme Giordani. Data science. Start: 2021. ICMC-USP. Supervisor: Afonso Paiva Neto



116. Luiz Gustavo Ribeiro. Desenvolvendo um modelo para reconhecimento de produtos de varejo usando visão computacional e Machine Learning. Start: 2020. ICMC-USP. Supervisor: Fabrício Simeoni de Sousa
117. Luiza Torello Vieira. Geração procedural de missões adaptadas a perfis de jogadores. Start: 2022. ICMC-USP. Supervisor: Claudio Fabiano Motta Toledo
118. Luna Wagner Cunha. Análise comparativa de métodos de seleção de variáveis em problemas de classificação. Start: 2022. ICMC-USP. Supervisor: Cibele Maria Russo Novelli
119. Marcelo Vinicius Temponi Soler. Integrais Elípticas e a Média Aritmética-Geométrica. Start: 2023. UNICAMP. Supervisor: Lucio Tunes dos Santos
120. Mario Muramatsu Junior. TBA. Start: 2021. IME-USP. Supervisor: André Fujita
121. Mateus Iuri Melo Popoff. Simulação da camada-limite atmosférica instável da floresta Amazônica usando Large-Eddy Simulation. Start: 2022. ICMC-USP. Funding: FAPESP. Supervisor: Livia Souza Freire Grion
122. Mateus Leonel Souto Alonso. Algoritmos de otimização qualidade-diversidade para o problema de escalonamento em enfermagem. Start: 2022. FFCLRP-USP. Supervisor: Renato Tinós
123. Matheus Anselmo da Silva. TBA. Start: 2023. UFBA. Co supervisor: Paulo Henrique Silva
124. Matheus Diniz Ferreira. Otimização da cadeia de suprimentos utilizando Big Data. Start: 2020. ICMC-USP. Supervisor: Maristela Oliveira dos Santos
125. Matheus Fideles Leite. Restauração Inexata no contexto de problemas imprecisos de otimização. Start: 2024. Unifesp. Funding: CAPES. Supervisor: Luis Felipe Cesar da Rocha Bueno
126. Matheus Henrique Felix. Modelos De Regressão Para Múltiplos Níveis De Censura À Esquerda Em Dados Sorológicos Hiv+. Start: 2022. UFSCar. Supervisor: Vera Lucia Damasceno Tomazella
127. Matheus Henrique Junqueira Saldanha. TBA. Start: 2021. ICMC-USP. Funding: CAPES. Supervisor: Adriano Kamimura Suzuki
128. Matheus Melo Monteverde. Métodos de Ajuste de Modelo DLM para altos números de Mach. Start: 2022. ITA. Supervisor: Roberto Gil Annes da Silva
129. Matheus Victal Cerqueira. Inferência causal e aprendizado de máquina em sistemas complexos climáticos. Start: 2023. ICMC-USP. Supervisor: Francisco Aparecido Rodrigues
130. Michel de Oliveira Guijarro. Análise de Influências e Mineração de Dados para Detecção de Beneficiário Final e Combate à Lavagem de Dinheiro, Redirecionados a Pessoas Expostas Politicamente (PEP). Start: 2022. ICMC-USP. Supervisor: Claudio Fabiano Motta Toledo
131. Michelangelo Redondo dos Anjos. Interpretabilidade, Performance e Estabilidade: Bagging e Boosting Aplicadas ao Risco de Crédito. Start: 2023. ICMC-USP. Supervisor: Cibele Maria Russo Novelli
132. Naiara Pereira Magro Faccioli. Auditoria de Enfermagem X Pandemia: o impacto financeiro nas contas hospitalares de um hospital referência no tratamento de pacientes com Covid-19 na cidade de Ribeirão Preto. Start: 2021. FMRP-USP. Supervisor: Gleici da Silva Castro Perdoná
133. Nathan Ferraz da Silva. TBA. Start: 2024. ICMC-USP. Supervisor: Rodolfo Ipolito Meneguette



134. Nicolas Barbosa Gomes. Redes Neurais em Grafos para Identificação de Esclerose Lateral Amiotrófica. Start: 2024. UNESP. Funding: FAPESP. Supervisor: João Paulo Papa
135. Nikolaj Angel Peter Even. Unsteady Aerodynamic Modeling of Electric Motor Driven Propellers. Start: 2022. ITA. Supervisor: Roberto Gil Annes da Silva
136. Osvaldo Teodoro da Silva Neto. Estudos em Problemas de Roteamento Agrícola. Start: 2023. UNESP. Funding: CAPES. Supervisor: Silvio Alexandre de Araujo
137. Paulo Berardo Pessoa de Souza Filho. Análises de eddy-covariance no cerrado. Start: 2023. EESC-USP. Funding: CNPq. Supervisor: Edson Cezar Wendland
138. Percy Eduardo Palma Chavez. Organizational Information Security Adaptative Model. Start: 2022. ICMC-USP. Supervisor: Mariana Cúri
139. Philippe Dias de Almeida. Maximização de vendas em Marketplace através de cash-back. Start: 2020. ICMC-USP. Supervisor: Gleici da Silva Castro Perdoná
140. Priscila Gutierrez. Sistema de apoio a tratamento para reabilitação motora de membro superior baseado em Realidade Virtual imersiva. Start: 2021. ICMC-USP. Supervisor: Claudio Fabiano Motta Toledo
141. Públio Netto de Almeida. TBA. Start: 2022. Unifesp. Supervisor: Ana Carolina Lorena
142. Rafael Aguilar Magalhães. TBA. Start: 2024. UFPR. Supervisor: Anderson de Rezende Rocha
143. Rafael dos Santos Braz. Verificação da Transformadores de Código. Start: 2020. ICMC-USP. Funding: CAPES. Supervisor: Adenilso da Silva Simão
144. Rafael Gardel Azzariti Brasil. Resolução de problemas de Engenharia de Produção através de métodos de otimização (título provisório). Start: 2020. EP-USP. Supervisor: Débora Pretti Ronconi
145. Rafael Kenji Nissi. TBA. Start: 2020. ICMC-USP. Supervisor: Seiji Isotani
146. Rafael Pereira De Avila Ferrari. Otimização De Malha Logística Através De Modelos De Localização De Facilidades. Start: 2022. ICMC-USP. Supervisor: Maristela Oliveira dos Santos
147. Raissa Rosa dos Santos Januário. Explorando a Relação entre a Malha Viária e o Roubo de Veículos em São Paulo. Start: 2024. ICMC-USP. Supervisor: Luis Gustavo Nonato
148. Ranielly Aparecida da Silva. Aplicação de Técnicas de Ciência de Dados na Análise de Dados Públicos do Ministério da Saúde. Start: 2023. UNESP. Funding: CAPES. Supervisor: Wallace Correa de Oliveira Casaca
149. Ravelly Carvalho Zanatta. Explorando a privacidade no consenso de Proof-of-Learning: um estudo de caso na area médica. Start: 2022. ICMC-USP. Funding: CAPES. Supervisor: Jó Ueyama
150. Rayssa Freitas Carvalho. Self-Paced Curriculum Learning em Redes Neurais Artificiais. Start: 2023. ITA. Supervisor: Ana Carolina Lorena
151. Rayza Camila dos Santos Silva. Modelos de aprendizado de máquina para dados espaço-temporais de perfilagem de poços de petróleo. Start: 2024. ICMC-USP. Supervisor: Cibele Maria Russo Novelli
152. Renan de Oliveira da Cruz. TBA. Start: 2022. ICMC-USP. Supervisor: Adriano Kamimura Suzuki
153. Renan Manuel Pighini Da Silva. Análise de Estabilidade de Escoamentos do Fluidos Viscoelásticos. Start: 2022. UNESP. Supervisor: Analice Costacurta Brandi



154. Renan Silva Chun. TBA. Start: 2023. ICMC-USP. Supervisor: Adriano Kamimura Suzuki
155. Ricardo Tetti Camacho. Processos dinâmicos em redes de agentes móveis. Start: 2022. ICMC-USP. Funding: FAPESP. Supervisor: Francisco Aparecido Rodrigues
156. Richard Castro. Otimização de processos no aproveitamento de resíduo orgânico. Start: 2023. UN-ESP. Supervisor: Helenice de Oliveira Florentino Silva
157. Richard G. dos Santos. Gradient boosting modificado. Start: 2022. UFSCar. Supervisor: Carlos Alberto Ribeiro Diniz
158. Rodrigo Fernando Murça Barroso. Uso da distribuição Inversa na modelagem de dados de sobrevivência. Start: 2021. ICMC-USP. Supervisor: Vicente Garibay Cancho
159. Rodrigo Menas Tamasi. Otimização Multiobjetivo de Planos de Inspeção de Equipamentos Submarinos. Start: 2023. UNESP. Funding: FDTE. Supervisor: André Luis Debiaso Rossi
160. Rodrigo Tanaka Aki. Development of an agent framework for the game "Don't Starve". Start: 2023. ITA. Supervisor: Mariá Cristina Vasconcelos Nascimento Rosset
161. Rosemeire do Nascimento Santos. Modelos de classificação estatística para dados desbalanceados. Start: 2022. UFBA. Funding: FAPESB. Supervisor: Paulo Henrique Silva
162. Rubens Rezende Oliveira. TBA. Start: 2024. ICMC-USP. Supervisor: Rodolfo Ipolito Meneguette
163. Samara Icleia dos Santos Martins. TBA. Start: 2024. IME-USP. Funding: CAPES. Supervisor: Ernesto Julián Goldberg Birgin
164. Sofia de Almeida Prado Simanke. TBA. Start: 2021. ICMC-USP. Supervisor: Seiji Isotani
165. Teh Led Red. Modelagem via redes neurais de dados de sobrevivência de longa duração com dispersão não observada. Start: 2020. ICMC-USP. Supervisor: Vicente Garibay Cancho
166. Thales Castelo Branco. TBD. Start: 2022. UNICAMP. Supervisor: William Roberto Wolf
167. Thiago Ferreira Miranda. Testes adaptativos para Avaliações formativas. Start: 2023. ICMC-USP. Supervisor: Mariana Cúri
168. Thiago Rafael Mariotti Claudio. Problema de Alocação de Médicos em Unidades de Diagnóstico por Imagem. Start: 2024. ICMC-USP. Supervisor: Maristela Oliveira dos Santos
169. Tiago Chaiveri da Costa. Desenvolvimento de softwares para avaliação de atividades físicas em gestantes no SUS. Start: 2022. FMRP-USP. Funding: CAPES. Supervisor: Gleici da Silva Castro Perdoná
170. Veronica Nazaré Ramos Viana. Gestão da recarga de aquíferos em diferentes regiões do Brasil e a disponibilidade para uso agrícola. Start: 2024. EESC-USP. Funding: CAPES. Supervisor: Edson Cezar Wendland
171. Victor Chavauty Villela. TBA. Start: 2021. IME-USP. Supervisor: André Fujita
172. Victor de Sá Nunes. Medição da dificuldade de cada instância em problemas de regressão. Start: 2023. Unifesp. Supervisor: Ana Carolina Lorena
173. Victor Eduardo Lachos Olivares. Novos desenvolvimentos em modelos mistos para resposta limitada. Start: 2022. ICMC-USP. Supervisor: Jorge Luis Bazan Guzman



174. Victor Hugo F. Francheto. Redes Complexas: Uma abordagem interdisciplinar para compreensão e modelagem de fenômenos complexos. Start: 2023. ICMC-USP. Supervisor: Thomas Kaue Dal Maso Peron
175. Vinicius Alencar Oliveira. Uso de redes complexas e espaço de fases para detecção de tendências em séries temporais. Start: 2021. EACH-USP. Supervisor: Marcelo de Souza Lauretto
176. Vinícius Araújo Brasil. Q-svr: aprendizado por reforço via aproximação da função ação-valor com máquinas de vetores suporte com múltiplas saídas. Start: 2021. UFPR. Supervisor: Anderson de Rezende Rocha
177. Vitor Correa Yoshida. TBA. Start: 2022. ICMC-USP. Supervisor: Adriano Kamimura Suzuki
178. Vittoria de Paula. Otimização de Relações Empresariais e Clientes no E-commerce: Mensuração e Impacto das Estratégias de Branding. Start: 2023. ICMC-USP. Supervisor: Cibele Maria Russo Novelli
179. Walison Adrian de Oliveira. Métodos heurísticos para problemas de nesting com reaproveitamento de placas. Start: 2024. ICMC-USP. Funding: FAPESP. Supervisor: Marina Andretta
180. Wilker Duarte Teixeira. Problema De Roteirização De Veículos Com Frota Fixa. Start: 2020. EP-USP. Co supervisor: Débora Pretti Ronconi

A.4 COMPLETED M.Sc.

1. . Aguiar Ribeiro Junior. Alocação de Recursos em Nuvens Veiculares baseada em Teoria dos Jogos. 2023. ICMC-USP. Supervisor: Rodolfo Ipolito Meneguette
2. . Alexis Aldo Mendoza Villarroel. Sedentary lifestyle detection via biosignals, machine learning and visual analysis. 2024. UNICAMP. Funding: Samsung Eletrônica da Amazônia. Supervisor: Anderson de Rezende Rocha
3. . Aline Marra Campos. Redução de perdas em sistemas de abastecimento público de água: Uma contribuição teórica. 2024. EESC-USP. Funding: CAPES. Supervisor: Edson Cezar Wendland
4. . Ana Claudia Guimarães Santos. Modeling and predicting user types changes in gamified systems. 2023. ICMC-USP. Supervisor: Seiji Isotani
5. . Ana Rosalia Huaman Reyna. Desenvolvimento de um sistema de detecção e rastreamento de veículos para análise de anomalias de tráfego em rodovias utilizando estruturas espaciais e temporais por meio de Visão Computacional. 2023. ICMC-USP. Funding: CAPES. Supervisor: Rodolfo Ipolito Meneguette
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