

Edesio Alcobaça

CONTACT INFORMATION

NAME: Edesio Pinto de Souza Alcobaça Neto
EMAIL: edesio@usp.br or e.alcobaca@gmail.com
PERSONAL WEBSITE: ealcobaca.github.io

NETWORKS:



EDUCATION

2018-Today | PhD Candidate in COMPUTER SCIENCE AND COMPUTATIONAL MATHEMATICS, **University of São Paulo**, São Paulo, Brazil
Advisor: Prof. Dr. André C. P. L. F. de Carvalho
GPA: 10/10

2021-Today | MBA in Project Management, **University of São Paulo**, São Paulo, Brazil

2013-2018 | BSc in COMPUTER SCIENCE, **University of São Paulo** (São Paulo, Brazil) with an inter-university exchange at the **University of Porto** (Porto, Portugal)
Advisor: Prof. Dr. André C. P. L. F. de Carvalho (Brazil) & Prof. Dr. Carlos Soares (Portugal)
Outstanding student award for the best grade point average (GPA)
GPA: 9.2/10

WORK EXPERIENCE

2020-present | Tutor at MBA in Data Science at **University of São Paulo**, São Paulo, Brazil
Assisting in teaching data science, statistical, machine learning, deep learning, and other related courses

2018-present | Research Assistant at **University of São Paulo**, Machine Learning Group, São Paulo, Brazil
Advisor: Prof. Dr. André Carlos P. L. F. de Carvalho
Researching and developing AutoML techniques for end-to-end machine learning pipeline design. Developing the meta-feature extractor package (pymfe) and AutoML packages.

2017 | Research Assistant at **University of São Paulo**, Machine Learning Group, São Paulo, Brazil
Advisor: Prof. Dr. André Carlos P. L. F. de Carvalho
Developed some improvements in the meta-learning system for cancer diagnosis.

2016 | Visiting Researcher at **Institute for Systems and Computer Engineering, Technology and Science (INESC TEC)**, Porto, Portugal
Advisor: Prof. Dr. Carlos Soares
Developed a meta-learning system for recommending suitable machine learning algorithms for cancer diagnosis.

2015-2016 | Research Assistant at **University of São Paulo**, Machine Learning Group, São Paulo, Brazil
Advisor: Prof. Dr. André Carlos P. L. F. de Carvalho
Developed machine learning models for cancer diagnosis.

TECHNICAL SKILLS

Programming language	Python (6 years) • R (3 years) • Java (2 years) • C# (1 years) • C++ (2 years) • C (5 years) • SQL (2 years) • javascript (2 years)
Machine learning tasks	supervised learning (classification, regression and multi-target), unsupervised learning (clustering, association), reinforcement learning, time series forecasting, meta-learning, transfer learning, few-shot learning, recommendation system, automated machine learning and others.
Other	Git, Linux OS, SQL

RECENT RELEVANT PUBLICATIONS

Articles published in journals:

- **Alcobaça, E.**, Siqueira, F., Rivolli, A., Garcia, L. P., Oliva, J. T., & de Carvalho, A. C. P. L. F. (2020). *MFE: Towards reproducible meta-feature extraction*. **Journal of Machine Learning Research**, 21(111), 1-5.
- **Alcobaça, E.**, Mastelini, S. M., Botari, T., Pimentel, B. A., Cassar, D. R., de Carvalho, A. C. P. L. F., & Zanotto, E. D. (2020). *Explainable Machine Learning Algorithms For Predicting Glass Transition Temperatures*. **Acta Materialia**, 188, 92-100.
- Garcia, L. P. F., Rivolli, A., **Alcobaça, E.**, Lorena, A. C., & de Carvalho, A. C. P. L. F. *Boosting Meta-Learning with Simulated Data Complexity Measures*. **Intelligent Data Analysis**, 2020.
- Mantovani, R. G., Rossi, A. L., **Alcobaça, E.**, Vanschoren, J., & de Carvalho, A. C. P. L. F. (2019). *A meta-learning recommender system for hyperparameter tuning: predicting when tuning improves SVM classifiers*. **Information Sciences**.
- Cassar, D. R., Mastelini, S. M., Botari, T., **Alcobaça, E.**, de Carvalho, A. C., & Zanotto, E. D. (2021). *Predicting and interpreting oxide glass properties by machine learning using large datasets*. **Ceramics International**.

Articles published in conferences:

- **Alcobaça, E.**, Mantovani, R. G., Rossi, A. L., & de Carvalho, A. C. P. L. F. (2018, October). *Dimensionality Reduction for the Algorithm Recommendation Problem*. In **2018 7th Brazilian Conference on Intelligent Systems (BRACIS)** (pp. 318-323). IEEE.

Articles under review in journals:

- Mantovani, R. G., Rossi, A. L. D., **Alcobaça, E.**, Gertrudes, J. C., Junior, S. B., & de Carvalho, A. C. P. D. L. F. (2020). *Rethinking Default Values: a Low Cost and Efficient Strategy to Define Hyperparameters*. **arXiv preprint arXiv:2008.00025**.
- Mastelini, S. M., Cassar, D. R., **Alcobaça, E.**, Botari, T., de Carvalho, A. C., & Zanotto, E. D. (2021). *Machine learning unveils composition-property relationships in chalcogenide glasses*. **arXiv preprint arXiv:2106.07749**.

Reviewed Workshop Papers and Abstracts:

- Pereira, G. T., Santos, M. D., **Alcobaça, E.**, Mantovani, R., & de Carvalho, A. C. P. L. F. (2019). *Transfer Learning for Algorithm Recommendation*. Latinx Workshop. In **Neural Information Processing Systems (NIPS)**, 2019. **arXiv preprint arXiv:1910.07012**.

RESEARCH INTERESTS

Machine Learning • Automated Machine Learning (AutoML) • Neural architecture search • Optimization for Machine Learning • Computational Mathematics • Bioinformatics

AWARDS

2018	Undergraduate with Honors Award in Computer Science of the University of São Paulo. <i>GPA: 9.2/10</i>
2013-2017	Five outstanding student awards for students with the highest GPA during the year academic of the University of São Paulo.
2016	Exchange Scholarship Award for students with outstanding curriculum from the University of São Paulo International Cooperation Office (AUCANI)

SCHOLARSHIPS

01/2019-06/2020	The São Paulo Research Foundation (FAPESP) scholarship
01/2018-12/2018	Coordination for the Improvement of Higher Education Personnel (CAPES) scholarship
04/2017-12/2017	The São Paulo Research Foundation (FAPESP) scholarship for scientific initiation
08/2015-08/2016	National Council for Scientific and Technological Development (CNPq) scholarship for scientific initiation

OTHER ACTIVITIES

Teaching Assistant:

2021	Neural Networks and Deep Architectures, MBA course, University of São Paulo.
2021	Massive Parallel Processing for Data Analysis, MBA course, University of São Paulo.
2021	Time Series, MBA course, University of São Paulo.
2021	Machine Learning, MBA course, University of São Paulo.
2021	Statistics for Data Science, MBA course, University of São Paulo.
2021	Introduction to Data Science, MBA course, University of São Paulo.
2021	Programming to Data Science, MBA course, University of São Paulo.
2020	Machine Learning, MBA course, University of São Paulo.
2019	Undergraduate Project I (SCC0293), Bachelor's degree in Computer Science at the University of São Paulo
2019	Introduction to Computer Science II (SCC0201), Bachelor's degree in Computer Science at the University of São Paulo

Machine Learning Tools:

pymfe	<i>Python meta-feature extraction package.</i>
	Help the users extracting characteristics from the datasets and machine learning models to use in meta-learning experiments.
	Published in the Journal of Machine Learning Research (JMLR)
	Github: https://github.com/ealcobaca/pymfe
	Open Source software

LANGUAGE SKILLS

PORTUGUESE:	Native
ENGLISH:	Professional working proficiency
SPANISH:	Functional