Edesio Pinto de Souza Alcobaça Neto

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Education

2018 – Ongoing	**Ph.D. Candidate in Computer Science and Computational Mathematics** Area of Research: **Artificial Intelligence / Machine Learning/ AutoML** Advisor: Prof. Ph.D. André Carlos P. L. F. de Carvalho *University of São Paulo, São Carlos/SP, Brazil*
2021 - Ongoing	**MBA in Project Management** *University of São Paulo, São Paulo/SP, Brazil*
2013 - 2018	**BSc in Computer Science** with an inter-university exchange, University of Porto, Portugal *University of São Paulo, São Carlos/SP, Brazil*

Work Experience

2018 - Ongoing	**Research Assistant** *University of São Paulo, São Carlos/SP, Brazil* • Research and develop AutoML techniques for end-to-end machine learning pipeline design. Develop the meta-feature extractor package (pymfe) and AutoML packages with automated testing and documentation. Collaborate in research and development to Center of Mathematical Sciences Applied to Industry (CEMEAI) at USP. Assist in teaching and managing undergraduate students in research. Collaborate with national and international researchers.
2020 - Ongoing	**Tutor of MBA in Data Science** *CEMEAI, University of São Paulo, São Carlos/SP, Brazil* • Assist in teaching data science, statistics, machine learning, neural networks and deep architectures, massively parallel processing for data analysis, and other related courses. Support students in learning and applying data science in real-world scenarios. Prepare and revise material for teaching.
2017	**Undergraduate Research Assistant** *University of São Paulo, São Carlos/SP, Brazil* • Developed and analyzed a meta-learning system (AutoML) to recommend machine learning algorithms for cancer diagnosis using gene expression data.
2016	**Visiting Researcher** *Institute for Systems and Computer Engineering, Technology and Science (INESC TEC), Porto, Portugal* • Developed and analyzed a meta-learning system (AutoML) for recommending suitable machine learning algorithms for multiple domains.
2015 - 2016	**Undergraduate Research Assistant** *University of São Paulo, São Carlos/SP, Brazil* • Developed and analyzed machine learning models for cancer diagnosis by using gene expression data.

Technical Skills

Programming languages	*Advanced:* Python	*Intermediate:* R, Java, C/C++	*Basic:* Matlab, Octave, Javascript
Machine learning skills	Data cleansing and collecting, Data visualization, Exploratory data analysis, Supervised learning (classification, regression, and multi-target), Unsupervised learning (clustering), Automated machine learning (AutoML), Meta-learning, Transfer learning, Few-shot learning, Recommendation system
Data Science Tools	scikit-learn, imbalanced-learn, tensorflow/keras, statsmodels, scipy, mlr, caret, numpy, pandas, plotly, seaborn, matplotlib, ggplot2, river, and others
Courses	Big Data Analysis with Scala and Spark (learning)
Others	Git, Linux, pytest, Docker, SQL, MySQL, Oracle, PostgreSQL, Jupyter

Awards

2018	Undergraduate with Honors Award in Computer Science. *GPA:* $9.2/10$
2013-2017	Five outstanding student awards for students with the highest GPA during the academic year.
2016	Exchange Scholarship International Cooperation Office (AUCANI)

Language Skills

PORTUGUESE:	Native
ENGLISH:	Professional working proficiency
SPANISH:	Limited working proficiency

Research Interests

Machine Learning ● Automated Machine Learning (AutoML) ● Neural Architecture Search (NAS) ● Meta-learning ● Optimization for Machine Learning ● Computational Mathematics ● Bioinformatics

Recent Relevant Publications

2020	**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.
2020	**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.
2019	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**.
2018	**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.

Other Activities

Teaching Assistant:

2021	*Neural Networks and Deep Architectures*, MBA course, University of São Paulo
	Massively Parallel Processing for Data Analysis, MBA course, University of São Paulo
	Time Series, MBA course, University of São Paulo
	Machine Learning, MBA course, University of São Paulo
	Statistics for Data Science, MBA course, University of São Paulo
	Introduction to Data Science, MBA course, University of São Paulo
	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, University of São Paulo
2019	*Introduction to Computer Science II (SCC0201)*, Bachelor's degree, University of São Paulo

Relevant Machine Learning Tool Developed:

pymfe	*Python meta-feature extraction package.*
	Published in the Journal of Machine Learning Research (JMLR)
	Github: `https://github.com/ealcobaca/pymfe`
	Open Source software