

Edesio Pinto de Souza Alcobaça Neto

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in LinkedIn

🌐 <https://ealcobaca.github.io>
🐙 GitHub

📍 São Carlos/SP - Brazil
🎓 Scholar

Education

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| 2018 – Ongoing | Ph.D. Candidate in Computer Science and Computational Mathematics
Title: Automated Machine Learning: Learning to Learn
Advisor: Prof. Ph.D. André Carlos P. L. F. de Carvalho
<i>University of São Paulo, São Carlos/SP, Brazil</i> |
| 2021 - Ongoing | MBA in Project Management
<i>University of São Paulo, São Paulo/SP, Brazil</i> |
| 2013 - 2018 | BSc in Computer Science
with an inter-university exchange, University of Porto, Portugal
<i>University of São Paulo, São Carlos/SP, Brazil</i> |

Work Experience

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| 2018 - Ongoing | Research Assistant
<i>University of São Paulo, São Carlos/SP, Brazil</i> <ul style="list-style-type: none">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
<i>CEMEAI, University of São Paulo, São Carlos/SP, Brazil</i> <ul style="list-style-type: none">Assist in teaching data science, statistics, machine learning, neural networks and deep architectures, massively parallel processing, 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
<i>University of São Paulo, São Carlos/SP, Brazil</i> <ul style="list-style-type: none">Developed and analyzed a meta-learning system (AutoML) to recommend machine learning algorithms for cancer diagnosis using gene expression data. |
| 2016 | Visiting Researcher
<i>Institute for Systems and Computer Engineering, Technology and Science (INESC TEC), Porto, Portugal</i> <ul style="list-style-type: none">Developed and analyzed a meta-learning system (AutoML) for recommending suitable machine learning algorithms for multiple domains. |
| 2015 - 2016 | Undergraduate Research Assistant
<i>University of São Paulo, São Carlos/SP, Brazil</i> <ul style="list-style-type: none">Developed and analyzed machine learning models for cancer diagnosis by using gene expression data. |

Technical Skills

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| Programming languages | Advanced: Python Intermediate: R, Java, C/C++ Basic: Matlab, Octave, Javascript |
| Machine learning skills | Supervised learning (classification, regression, and multi-target), unsupervised learning (clustering, association), meta-learning, transfer learning, few-shot learning, recommendation system, automated machine learning (AutoML), data visualization, exploratory data analysis, and others |
| Data Science Tools | scikit-learn, imbalanced-learn, river, TensorFlow/keras, statsmodels, scipy, mlr, caret, numpy, pandas, plotly, seaborn, matplotlib, ggplot2, and others |
| Others | Git, Linux, pytest, Docker, SQL, MySQL, Oracle, and Jupyter |

Awards

2018	Undergraduate with Honors Award in Computer Science. <i>GPA: 9.2/10</i>
2013-2017	Five outstanding student awards for students with the highest GPA during the year academic.
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). <i>MFE: Towards reproducible meta-feature extraction</i> . 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). <i>Explainable Machine Learning Algorithms For Predicting Glass Transition Temperatures</i> . Acta Materialia , 188, 92-100.
2019	Mantovani, R. G., Rossi, A. L., Alcobaça, E. , Vanschoren, J., & de Carvalho, A. C. P. L. F. (2019). <i>A meta-learning recommender system for hyperparameter tuning: predicting when tuning improves SVM classifiers</i> . Information Sciences .
2018	Alcobaça, E. , Mantovani, R. G., Rossi, A. L., & de Carvalho, A. C. P. L. F. (2018, October). <i>Dimensionality Reduction for the Algorithm Recommendation Problem</i> . In 2018 7th Brazilian Conference on Intelligent Systems (BRACIS) (pp. 318-323). IEEE.

Other Activities

Teaching Assistant:

2021	<i>Neural Networks and Deep Architectures</i> , MBA course, University of São Paulo <i>Massively Parallel Processing for Data Analysis</i> , MBA course, University of São Paulo <i>Time Series</i> , MBA course, University of São Paulo <i>Machine Learning</i> , MBA course, University of São Paulo <i>Statistics for Data Science</i> , MBA course, University of São Paulo <i>Introduction to Data Science</i> , MBA course, University of São Paulo <i>Programming to Data Science</i> , MBA course, University of São Paulo
2020	<i>Machine Learning</i> , MBA course, University of São Paulo
2019	<i>Undergraduate Project I (SCCo293)</i> , Bachelor's degree, University of São Paulo
2019	<i>Introduction to Computer Science II (SCCo201)</i> , Bachelor's degree, University of São Paulo

Relevant Machine Learning Tool Developed:

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