Rafael Seidi Oyamada

Ph.D. Candidate

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Education

Ph.D. student in Computer Science *Milan - Italy*

University of Milan *2022-now*

My research project aims at developing deep learning techniques for process mining. The main interests lie in the development of generative models for process simulation and encoding/embedding methods for process (event) data.

M.Sc. in Computer Science *Londrina, PR - Brazil*

Londrina State University *2019-2021*

During my master's I had a short experience as a teaching assistant and worked on two similar research lines on databases and ML applied to databases. I finished the program having three accepted publications and defended my thesis whose main contribution was a framework for the automatic configuration of graph databases using meta-learning.

B.Sc. in Computer Science *Londrina, PR - Brazil*

Londrina State University *2013-2018*

During my Bachelor's I developed basic skills in different areas working as a Research Intern, Mentor/Teaching Assistant, and Software Engineer. My final thesis approached the problem of detecting anomalies in software-defined networks (SDN).

Bio

Rafael is a Ph.D. student in Computer Science at the University of Milan. He received his BSc and MSc degrees in 2019 and 2021, respectively, both in Computer Science at Londrina State University. His current research interests lie primarily in deep generative models and representational learning. In particular, he works with generative models for enhancing business processes and encoding methods for log (event) data extracted from information systems. Alternative interests include databases for similarity-based retrieval, graph algorithms, and meta-learning.

Publications

1. **Oyamada, R.S.**; Tavares, G.M.; Ceravolo, P.; *CoSMo: a Framework for Implementing Conditioned Process Simulation Models*, in arXiv/2303.17879, 2023 (preprint). **Link**.
2. Barbon Jr., S.; Ceravolo, P.; **Oyamada, R.S.**; Tavares, G.M., *Trace Encoding in Process Mining: a Survey and Benchmarking*, in arXiv:2301.02167, 2023 (preprint submitted to the journal Engineering Applications of Artificial Intelligence under major review). **Link**.
3. **Oyamada, R.S.**; Shimomura, L.C.; Barbon, S.; Kaster, D.S., *A Meta-learning Configuration Framework for Graph-based Similarity Search Indexes*, Information Systems 2023. **Link**.
4. Shimomura, L.C.; **Oyamada, R.S.**; Vieira, M.R.; Kaster, D.S., *A survey on graph-based methods for similarity searches in metric spaces*, Information Systems 2021. **Link**.
5. **Oyamada, R.S.**; Shimomura, L.C.; Barbon, S.; Kaster, D.S., *Towards Proximity Graph Auto-Configuration: an Approach Based on Meta-learning*, ADBIS 2020. **Link**.

Event attendances

SNAMS - International Conference on Social Networks Analysis, Management, and Security *Milan, Italy*

Organizer. *December 2022*

IRIXYS Workshop *Gargnano, Italy*

Presentation: A Conditioned Architecture for Business Process Simulations. *October 2022*

ItaData - Italian Conference on Big Data and Data Science *Milan, Italy*

Listener. *September 2022*

Process Mining Summer School *Aachen, Germany*

Listener. *July 2022*

Unioeste Cascavel/PPGComp *Cascavel, Brazil*

Presentation: Meta-Learning for Auto-Selection and Auto-Configuration of Proximity Graphs. *November 2020*

ADBIS - European Conference on Advances in Databases and Information Systems *Lyon, France (remote)*

Presentation: Towards Proximity Graphs Auto-Configuration: an Approach Based on Meta-Learning. *August 2020*

Employment

Data Scientist (remote) *Silicon Valley, California, USA*

Radiolife *March 2021 - June 2022*

- Worked on a project where the proposed idea was the development of a device capable of detecting Covid-19 in a few seconds. My tasks included monitoring, analyzing, processing, and managing data generated by such devices to validate the product, provide insights, and deploy ML models learned from it.
- Technologies: python, C++, sklearn, WandB, micromlgen, Dash (plotly), MongoDB, and AWS.
- Theoretical background: supervised learning and ensemble methods.

Software Engineer *Londrina, PR, Brazil*

Tata Consultancy Services *June 2018 - March 2019*

- Worked on banking projects. In the first project, my tasks included supporting and maintaining the system in both front and back end. In the second one, I implemented systems from scratch.
- Technologies: javascript, react, nodeJS, PostgreSQL, and MongoDB.
- Theoretical background: design patterns, software architecture, and best practices for development.

Python Developer *Londrina, PR, Brazil*

Pedriali & Vasconcellos – Law Firm *April 2016 - April 2017*

- Worked on the development of python software and scripts to improve and optimize routine tasks in the office, in order to accelerate the employees' production. Examples of my tasks included the auto-filling of proceedings sheets, auto-scheduling, management of contracts, and web scraping.
- Technologies: Python, beautifulsoup, selenium, and excel.

Teaching Assistant (undergraduate) *Londrina, PR, Brazil*

Londrina State University *August 2014 - August 2015*

- Worked as Teaching Mentor for two years. I supported students in the disciplines of Programming Techniques (2015) and Data Structures (2016).
- Technologies: C, bash scripting, and Linux.

Information Technology Mentor *Londrina, PR, Brazil*

Londrina State University *Jan. 2018 - Apr. 2018*

- Worked on a social project for digital inclusion, where the main purpose was the introduction of IT basic concepts to the elderly and kids. We approached concepts that included web navigation, sending e-mails, social media, and file management.

Undergraduate Research Intern *Londrina, PR, Brazil*

Agronomic Institute of Parana (IAPAR) *August 2013 - August 2014*

- Worked with a device that aimed at collecting digital information (e.g. leaf weight) from coffee plants through electromagnetic waves.
- Assisted in the analysis of data collected from coffee plants.
- Techonologies: Java.

Other

- **Languages** – Portuguese (native), English (proficient, Toefl iBT score – 87), and Italian (beginner).
- **Skills** – Python · Pytorch · Numpy · Pandas · Git · Unix · Latex · PostgreSQL · AWS · DynamoDB · Microservices (Flask).
- **Theoretical background** – Supervised Learning · Meta-learning · Recommendation Systems · Graph theory · Graph databases · Similarity Search · Knolwedge Representation · Generative Models (e.g. GPT) · Encoding methods · Process Mining.