

Brener L. O. Ramos

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I love solving challenges, coding, teaching and understanding how things work. With more than 7 years of experience in software development with multiple languages, dealing especially with **Data Science** and **Physics Simulations**, I am looking for an opportunity to work on new challenging projects and expand my skillset to deliver the best possible result.

Python Developer | Machine Learning | Physics Simulations

Experience

Python Developer at Turing (Remote)

2023.02 – Current

- Wrote high-quality, efficient Python code for solving various tasks for an artificial intelligence project.
- Performed peer code review with constructive feedback.

Graduate Researcher at Technical University of Munich

2020.10 – 2022.09

- Designed and tested various types of neural networks, such as feed-forward, RNN, LSTM and convolutional for control problems.
- Expanded capabilities of fluid solver PhiFlow.
- Mentored the thesis of an undergraduate student and managed tutors.

Graduate Researcher at State University of Campinas

2017.02 – 2019.09

- Analyzed terabytes of fluid simulations data in order to design efficient control strategies.
- Expanded capabilities of in-house parallel (MPI) LES solver (HPC).
- Implemented data reduction techniques (POD and SPOD).
- Created visualization scripts with Python, Tecplot, Paraview and Blender.

Undergraduate Researcher at State University of Campinas

2014.02 – 2017.02

- Implemented numerical methods from scratch and analyzed their effectiveness against shock-turbulence interactions.
- Developed GUIs to easily compare all algorithms.
- Received a prize for being amongst the top 20 undergraduate research projects from University of Campinas in 2016.

Other Projects

- Overview of Brazilian Elections Dashboard (Dash, Plotly, Nginx, Gunicorn, AWS, GeoPandas).
- Kaggle's Spaceship Titanic Competition (Scikit-learn, Plotly, Pandas, XGBoost).
- Coordinator of Science Classes at Projeto Ales (Leadership and Communication).
- DIY drone controlled with a PS4 controller (Arduino).
- Automatic irrigation system (Arduino).
- Physics explainers (Blender).

Papers/Conferences

- **Ramos, B.**, Trost, F., Thuerey, N., "Control of Two-way Coupled Fluid Systems with Differentiable Solvers" – ICLR 2022 Workshop on Generalizable Policy Learning in Physical World.
- **Ramos, B. L O.**, Wolf, W., Taira, K., Yeh, C., "Active Flow Control for Drag Reduction of a Plunging Airfoil Under Deep Dynamic Stall" - Physical Review Fluids, 2019.
- **Ramos, B. L.**, Wolf, W., Taira, K., "High-Fidelity Simulation and Flow Control of a Plunging Airfoil under Deep Dynamic Stall" - AIAA Scitech 2019 Forum.

Skills

Python		Excellent
Matlab		Advanced
Fortran 95		Advanced
C++		Intermediate

- Tensorflow, Pytorch and Scikit-Learn (building, training and deploying models).
- Tensorboard and Weights and Biases (productivity and monitoring).
- Numpy and Scipy (processing).
- Matplotlib, Plotly and Dash (visualization).
- SQLite and Pandas (data manipulation).

Education

University of Campinas	2017.02 – 2019.09
MSc in Mechanical Engineering. GPA:3.8/4.0	
University of Campinas	2012.02 – 2017.02
B.E. in Mechanical Engineering	

Languages

Portuguese		Native
English		Fluent
German		Basic

Certificates

- AWS Certified Cloud Practitioner.
- Neural Networks and Deep Learning by Andrew Ng.
- The Ultimate Pandas Bootcamp: Advanced Python Data Analysis by Andy Bek.
- Python + SQL + Tableau: Integrating Python, SQL and Tableau.