

Brener L. O. Ramos

brener@breneramos.com
Aracaju, Brazil
www.breneramos.com

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 **Physics Simulations** and more recently **Data Science**, I am looking for an opportunity to work on new challenging projects and expand my skillset to deliver the best possible result.

Experience

Graduate Researcher 2020.10 – 2022.09
Technical University of Munich
Munich, Germany

- 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 2017.02 – 2019.09
University of Campinas
Campinas, Brazil

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



Undergraduate Researcher 2014.02 – 2017.02
University of Campinas
Campinas, Brazil

- 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

- Kaggle's Spaceship Titanic Competition (Python).
- Coordinator of Science Classes at Projeto Ales (volunteer work).
- A Brief Overview of Brazilian Elections (Python).
- DIY drone controlled with a PS4 controller (Arduino).
- Automatic irrigation system (Arduino).
- Physics explainers (Blender).

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 and Plotly (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

- Neural Networks and Deep Learning by Andrew Ng.
- The Ultimate Pandas Bootcamp: Advanced Python Data Analysis by Andy Bek.
- 110+ Exercises – Python + SQL (sqlite3) – SQLite Databases.
- Python + SQL + Tableau: Integrating Python, SQL and Tableau.

Papers

- **Ramos, B.**, Trost, F., Thuerey, N., "Control of Two-way Coupled Fluid Systems with Differentiable Solvers".
- **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.