

# 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 **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

### 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

- Kaggle's Spaceship Titanic Competition (Exploratory Data Analysis, Feature Selection, Ensemble Models).
- Coordinator of Science Classes at Projeto Ales (Leadership and Communication).
- A Brief Overview of Brazilian Elections (Data Analysis and Geospatial Visualization).
- 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 and Plotly (visualization).
- SQLite and Pandas (data manipulation).

## Education

<b>University of Campinas</b>	2017.02 – 2019.09
MSc in Mechanical Engineering. GPA:3.8/4.0	
<b>University of Campinas</b>	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.