

Caio AZEVEDO

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EDUCATION

2024 – 2027, France

PhD in Machine Learning

École des Mines de Paris & Stellantis

- CIFRE agreement between Mines Paris and Stellantis.
- Working on trajectory prediction and Vision-Language-Action models (VLAs) for autonomous driving.

2023 – 2024, France

MSc in AI and Data Science

Université Paris-Dauphine

- Shared MSc between Université Paris-Dauphine, École des Mines de Paris and École Nationale Supérieure.
- Coursework on optimization, reinforcement learning, large language models, deep learning for image analysis.

2020 – 2024, France

BSc, MSc in Computer Science: AI and Data Science

École Polytechnique

- Cycle Ingénieur Polytechnicien, class of 2020.
- Coursework on data structures and algorithms, data science, computer graphics, machine learning.

2018 – 2020, Brazil

Fundamental Courses in Engineering

Technological Institute of Aeronautics (ITA)

- The most renowned engineering institute in Brazil.
- Foundational engineering coursework in calculus, linear algebra, physics, computer science.

WORK EXPERIENCE

April 2024 – August 2024, France

Machine Learning Research Intern

Stellantis

Worked on fine-tuning trajectory prediction models to incorporate human preferences and thus improve joint prediction consistency, e.g. avoid collisions, or better score driver intentions. Reduced collision rates by as much as 36% in state-of-the-art models with negligible accuracy degradations.

March 2023 – August 2023, Japan

Machine Learning Research Intern

Osaka University

Part of the Institute for Dataability Science. Implemented a deep learning-based approach to reconstruct 3D models from multi-focus microscopic images, improving our main reconstruction metric by as much as 12.5% compared to previous methods.

June 2022 – September 2022, France

Machine Learning R&D Intern

Huawei Technologies France

Designed a new auxiliary task for self-supervised learning in trajectory prediction for autonomous vehicles that made current architectures improve on common metrics by as much as 33% and beat the state-of-the-art on a commonly used data set.

TECHNICAL SKILLS

Programming languages: Python (advanced); C++ (Intermediate).

AI & data science tools and libraries: SQL, PyTorch, Pandas, NumPy, Scikit-Learn, Lightning, Hydra, HuggingFace Transformers, vLLM.

Systems & general purpose tools: Linux, Git, Slurm.

HONORS and AWARDS

2026

1st place: KITScenes Long-Tail Challenge (WAD-CVPR)

First-place solution of autonomous driving challenge focused on zero-shot generalization to difficult traffic scenes using VLAs. Presented at the Workshop on Autonomous Driving of CVPR 2026.

2023

Research Internship Prize

Prize given by the X Foundation to the best research internships done during the 3rd year of the Cycle Ingénieur.

2020 – 2023

Bourse d'Excellence Eiffel

Excellence scholarship provided by the French Ministry of Foreign Affairs to select international students.

2021

Third prize, International Mathematics Competition

University-level mathematics competition with students from more than sixty countries.

PUBLICATIONS and PROJECTS

IV 2026

“Future-Interactions-Aware Trajectory Prediction via Braid Theory”

Azevedo, Caio. Sabatini, Stefano. Hornauer, Sascha. Moutarde, Fabien.

ITSC 2025

“Improving Consistency in Vehicle Trajectory Prediction Through Preference Optimization”

Azevedo, Caio. Achaji, Lina. Sabatini, Stefano. Poerio, Nicola. Bartyzel, Grzegorz. Hornauer, Sascha. Moutarde, Fabien.

MICCAI 2024

“Deep Volume Reconstruction from Multi-Focus Microscopic Images”

Azevedo, Caio. Santra, Sanchayan. Kumawat, Sudhakar. Nagahara, Hajime. Morooka, Ken'ichi.

Pre-print: arXiv:2210.04672, 2022

“Exploiting Map Information for Self-Supervised Learning in Motion Forecasting”

Azevedo, Caio. Gilles, Thomas. Sabatini, Stefano. Tsishkou, Dzmitry.

University projects

Retweet Number Prediction Challenge

- Developed a convolutional model to predict retweet number of a corpus of tweets using PyTorch, as part of university-level Kaggle challenge.
- 1st place among 58 teams.

Transformers for Music Generation

- Studied the application of Transformers for autoregressive music token generation.
- Implemented toy examples that successfully generated simple music sequences.

LANGUAGES

Portuguese (native), **English**, **French** (advanced), **Japanese** (intermediate).