

Eduardo Dadalto

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Core Expertise

- **AI Evaluation:** Metrics design, large-scale evaluation workflows, data processing infrastructure, data lineage and versioning, performance monitoring, sim2real gap computation.
- **AI Safety:** Conformal risk control, conformal prediction, confidence calibration, uncertainty quantification, robustness testing, out-of-distribution/anomaly detection, operational design domain definition.
- **Experimental Design:** Bayesian hyperparameter optimisation, statistical hypothesis testing, ablation studies.

Professional Experience

Helsing

Mar. 2025 -

AI Research Engineer

Paris, France

- Built AI safeguard models end-to-end, deploying them in the HX-2 product, showcasing double digit mission success rate improvements in hard scenarios.
- Developed an ONNX library for edge deployment of conformal prediction and confidence calibration methods.
- Implemented scalable workflows for AI product performance and safety evaluation across the company, ensuring robust deployment and fast R&D iteration cycles.

Future Frame

Apr. 2024 - Nov. 2024

Co-founder

San Francisco, CA, USA & Paris, France

- Pre-trained and fine-tuned transformer models on structured data; released an API platform to customers.
- Raised pre-seed funding from Transpose VC and Entrepreneur First.

Mila - Quebec AI Institute & International Laboratory on Learning Systems

Oct. 2022 - Jan. 2023

Graduate Research Intern

Montreal, QC, Canada

- Developed misclassification detection algorithms for medical image segmentation.
- Advised by Pablo Piantanida and Jose Dolz, in collaboration with Federica and Balamurali.

IRT Saint Exupéry, DEEL Team & Airbus

Apr. 2020 - Oct. 2020

Undergraduate Research Intern

Toulouse, France

- Trained binary-weight neural networks via projected gradient descent for embedded computer vision.
- Supervised by Franck Mamalet and co-supervised by François Malgouyres and Adrien Gauffriau (Airbus).

Education

CentraleSupélec, Université Paris-Saclay, CNRS & IBM Research

Nov. 2020 - Mar. 2024

PhD in Machine Learning, Computer Science Department

Paris, France

- Thesis: Improving artificial intelligence reliability through out-of-distribution and misclassification detection.
- Keywords: Safety in AI, Out-of-Distribution Detection, Uncertainty Estimation, Computer Vision, NLP.
- Advisors: Pablo Piantanida and Florence Alberge. Committee Members: Nicolas Vayatis, Yann Chevaleyre, Yves Grandvalet, and Nicolas Thome.

Institut de Mathématiques de Toulouse, Université Toulouse III

Sep. 2019 - Oct. 2020

MSc in Applied Mathematics

Toulouse, France

Dissertation: "Training Binarized Deep Neural Networks." Advisors: Franck Mamalet and François Malgouyres.

ISAE-SUPAERO

Sep. 2018 - Apr. 2020

Diplôme d'Ingénieur, Major in Data & Decision Sciences

Toulouse, France

Selected Coursework: Supervised, Unsupervised, Deep, and Reinforcement Learning with Emmanuel Rachelson.

Double Degree with a full tuition fee waiver scholarship.

Instituto Tecnológico de Aeronáutica (ITA)

Feb. 2015 - Jul. 2018

BE in Aerospace Engineering

São José dos Campos, Brazil

Dissertation: "Machine Learning Applied to Communication Channels." Advisor: Meryem Bennamar.

Publications

For a full list of publications, please visit my Google Scholar page.

C: Conference · J: Journal · W: Workshop

- C1. [Eduardo Dadalto](#), Marco Romanelli. *Optimal Zero-shot Regret Minimization for Selective Classification With Out-of-Distribution Detection*. **UAI 2025**. [link]
- C2. [Eduardo Dadalto](#), Marco Romanelli, Georg Pichler, Pablo Piantanida. *A Data-Driven Measure of Relative Uncertainty for Misclassification Detection*. **ICLR 2024**. [ARXIV] [PDF] [CODE]
- J3. [Eduardo Dadalto](#), Florence Alberge, Pierre Duhamel, Pablo Piantanida. *Combine and Conquer: A Meta-Analysis on Data Shift and Out-of-Distribution Detection*. **TMLR 2024**. [ARXIV] [PDF] [CODE]
- C4. Maxime Darrin, Guillaume Staerman, [Eduardo Dadalto](#), Jackie CK Cheung, Pablo Piantanida, Pierre Colombo. *Unsupervised layer-wise score aggregation for textual ood detection*. **AAAI 2023**. [ARXIV] [PDF]
- C5. Pierre Colombo, [Eduardo Dadalto](#), Guillaume Staerman, Nathan Noiry, Pablo Piantanida. *Beyond Mahalanobis Distance for Textual OOD Detection*. **NeurIPS 2022**. [ARXIV] [PDF]
- C6. [Eduardo Dadalto](#), Florence Alberge, Pierre Duhamel, Pablo Piantanida. *Igeood: An Information Geometry Approach to Out-of-Distribution Detection*. **ICLR 2022**. [ARXIV] [PDF] [CODE]

Patents

- P1. [Eduardo Dadalto](#), M. Donini, G. Detommaso. *Method and System for Improving Object Tracking*. Filed. 2026.

Preprints

1. [Eduardo Dadalto](#), Marco Romanelli, Federica Granese, Siddharth Garg, Pablo Piantanida. *Trusting the Untrustworthy: A Cautionary Tale on the Pitfalls of Training-based Rejection Option*. 2023.
2. [Eduardo Dadalto](#), Pierre Colombo, Guillaume Staerman, Nathan Noiry, Pablo Piantanida. *A Functional Perspective on Multi-Layer Out-of-Distribution Detection*. 2023.

Workshops

- W1. [Eduardo Dadalto](#), Marco Romanelli, Georg Pichler, Pablo Piantanida. *A Data-Driven Measure of Relative Uncertainty for Misclassification Detection*. **NeurIPS Workshop on Mathematics of Modern Machine Learning**. 2023.
- W2. [Eduardo Dadalto](#), Florence Alberge, Pierre Duhamel, Pablo Piantanida. *Igeood: An Information Geometry Approach to Out-of-Distribution Detection*. **NeurIPS Workshop on Distribution shifts: connecting methods and applications (DistShift)**. 2021.

Teaching

CentraleSupélec, Université Paris-Saclay

Teaching Assistant (TA) for the course *Introduction to Deep Learning (3SQ2050)*.

2021-2023

Gif-sur-Yvette, France

Awards and Scholarships

Nordic Probabilistic AI Summer School (ProbAI)

June 2023

Norwegian University of Science and Technology, Trondheim, Norway

- Coursework on probabilistic modeling, variational inference, and generative models, sponsored by DeepMind.

Globalink MITACS Scholarship

Oct. 2022 - Feb. 2023

Awarded for a winning project in a four-month full mobility scholarship program, Montreal, QC, Canada

- Partnership between Mila, ÉTS, McGill, Inria, CNRS, and Université Paris-Saclay.

BCG Gamma Data Science Hackathon

February 2020

Organized by BCG Gamma and Instituto Tecnológico de Aeronáutica, São José dos Campos, Brazil

- Fine-tuned a YOLOv3 model for object detection on infrared drone footage.
- Received the Best Presentation Award. Advised by Filipe Verri.

Services & Volunteering

- **Reviewer:** Neural Information Processing Systems (NeurIPS 2022, 2023, ...), Computer Vision and Pattern Recognition (CVPR 2023), International Conference on Learning Representations (ICLR 2024, ...), Conference on Artificial Intelligence (AAAI 2023).
- **Presentations:** Experienced at giving talks to large audiences at academic conferences and industry events.
- **Teaching:** Volunteered as a high school math teacher at a Brazilian public school (2011).

Research Grants

- Compute research grant (AD011012803R) at Jean-Zay a French HPC/AI cluster. 2021 - 2024
- PhD funding from the PSPC AIDA project (2019-PSPC-09) granted by BPI-France. 2020 - 2024

Open Source

Detectors

May 2023

Open source package to accelerate research on out-of-distribution (OOD) detection for computer vision applications.

Todd / ToddBenchmark

February 2023

Open source package to accelerate research on out-of-distribution (OOD) detection for textual applications.

Skills & Tools

- **Languages:** English (fluent), French (fluent), Portuguese (native language), German (notions), Spanish (notions).
- **Programming:** Python (PyTorch, Numpy, Tensorflow/Keras, Scikit-Learn, Transformers, MAPIE, Polars, Optuna, etc.), Go, C, CUDA (basics), JavaScript, HTML, SQL, \LaTeX , git, Linux, agentic AI tools (Claude Code, Cursor), etc. Large-scale experiments: Slurm, Metaflow, ArgoCD. Edge deployment: Rust (Tokio), ONNX, TensorRT. Cloud: Docker, Terraform IaC, AWS, GCP.

Miscellaneous

- **Certificates:** Cambridge C2 Proficiency.
- **Academic contests:** Brazilian Astronomy Olympiad (3× gold medalist); UN mock debating at FAAP/SP.
- **Side projects:** Co-created Prompt Riddle, an online indie enigma-solving game with 5k+ players.
- **Sports:** brazilian jiu-jitsu, futsal.
- **Rocketry:** Launched and recovered a rocket that reached a 10,000 ft apogee as part of the ITA's Rocket Design team during the 2017 IREC competition (placed 7th/109 teams) in Las Cruces, NM, USA, which was sponsored by Virgin Galactic. I was responsible for the aerodynamics of the rocket and helped build the GPS localization module.
- **Personal interests:** Traveling, board games & puzzles.