Eduardo Dadalto, Third Year PhD Student in Machine Learning

*I am a PhD Student working towards safer deep learning algorithms and
committed to making AI a beneficial technology for all.*

Eduardo Dadalto Câmara Gomes (he/him)
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Education

CentraleSupélec, L2S, Université Paris-Sacaly, CNRS   *November 2020-*
PhD in Machine Learning.   Paris, France
- Title: Securing the use of Artificial Intelligence.
- Keywords: Out-of-distribution detection, Statistical Drift, Safety AI, Computer Vision, NLP.
- Supervised by Prof. Pablo Piantanida and Florence Alberge.

Institut de Mathématiques de Toulouse, Université Toulouse III   *Sep. 2019 - Oct. 2020*
MSc. in Applied Mathematics and Operations Research.   Toulouse, France
Dissertation: "Training Binarized Deep Neural Networks" supervised by Franck Mamalet and François Malgouyres.

ISAE-SUPAERO   *Sep. 2018 - Apr. 2020*
Diplôme d'Ingénieur (double degree) in Data and Decision Science.   Toulouse, France

Instituto Tecnológico de Aeronáutica (ITA)   *Feb. 2015 - Jul. 2018*
BE (double degree) in Aerospace Engineering.   São José dos Campos, Brazil
Dissertation: "Machine Learning Applied to Communication Channels" supervised by M. Bennamar and M. Sharma.

Work Experience

IRT Saint Exupéry, DEEL Team   *Apr. 2020 - Oct. 2020*
Undergraduate Research Intern.   Toulouse, France
- Six months internship working on binarizing the weights of neural networks.
- Supervised by Franck Mamalet and Co-supervised by François Malgouyres and Adrien Gauffriau.

Publications

For an up to date list of publications, please see my Google Scholar page.

1. <u>Eduardo Dadalto</u>, Pierre Colombo, Guillaume Staerman, Nathan Noiry, Pablo Piantanida. *A Functional Perspective on Multi-Layer Out-of-Distribution Detection.* **Recently Submitted**.

2. <u>Eduardo Dadalto</u>, Marco Romanelli, Federica Granese, Siddharth Garg, Pablo Piantanida. *Trusting the Untrustworthy: A Cautionary Tale on the Pitfalls of Training-based Rejection Option.* **Recently Submitted**.

3. Pierre Colombo, <u>Eduardo Dadalto</u>, Guillaume Staerman, Nathan Noiry, Pablo Piantanida. *Beyond Mahalanobis Distance for Textual OOD Detection.* **NIPS 2022**. [LINK] [PDF]

4. <u>Eduardo Dadalto</u>, Florence Alberge, Pierre Duhamel, Pablo Piantanida. *Igeood: An Information Geometry Approach to Out-of-Distribution Detection.* **ICLR 2022**. [LINK] [PDF] [CODE]

5. Meryem Bennamar, <u>Eduardo Dadalto</u>, Pablo Piantanida. *CSI-aided Robust Neural-based Decoders.* **IEEE ISTC, 2021**. [LINK] [PDF]

Teaching

CentraleSupélec, Université Paris-Saclay   *2020-2021*
Teaching Assistant for the course Introduction to Deep Learning (3SQ2050).   Gif-sur-Yvette, France

Services

- **Reviewer:** Computer Vision and Pattern Recognition (CVPR2023).

Awards and Scholarships

Globalink MITACS Scholarship   *Oct. 2022 - Feb. 2023*
Research visitor at the International Laboratory on Learning Systems (ILLS).   Montreal, QC, Canada
- Partnership between MILA, ETS, McGill, and Université Paris-Saclay.
- Subject: Misclassification Detection for Medical Image Segmentation.
- Directed by Pablo Piantanida and Jose Dolz.

BCG Gamma Data Science Hackathon   *February 2020*
Hackathon for BCG Gamma and Instituto Tecnológico de Aeronáutica.   São José dos Campos, Brazil
- Fine tuning a YOLOv3 model for object detection on infrared drone footage.
- Best presentation award. Placed 2/10. Advised by Filipe Verri.

Software

Detectors   *January 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

- **Languages:** English (Cambridge C2 Proficiency), French (fluent), Portuguese (native), German (basics).
- **Programming Languages:** Python, Java, C, Bash, Scripting, LaTeX, Slurm, Git, Docker, GCP.
- **Libraries:** PyTorch, Transformers, Keras, TensorFlow, Scikit-Learn, Pandas, Seaborn, Matplotlib.

References

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