Théophile Cantelobre

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Education

Mines ParisTech – PSL 2017-2021
MS Engineering, Data science & ML specialization ("Cycle ingénieur civil"). *Paris, France*

- Generalist engineering coursework: mathematics, physics, economy, law, sociology.
- Data science & ML specialization: stochastic processes, optimization, large-scale machine learning.
- Reference: Prof. Elie Hachem.

Sorbonne Université 2020-2021
Master 2 Statistics & Machine learning (M2A). *Paris, France*

- Double degree with Mines ParisTech.
- Coursework: Statistical learning theory, Machine learning†, Deep learning†, Reinforcement learning†, First-order optimization, Online convex optimization†. †practicals & projects
- Reference: Prof. Gérard Biau, Prof. Patrick Gallinari, Prof. Maxime Sangnier.

Professional experience

Research associate: theoretical machine learning February 2020 – July 2020
Inria London & University College London — Supervisor: Benjamin Guedj *London, UK*

- Topic: PAC-Bayes bounds & algorithms for structured output prediction.
- Bibliographical review. Theoretical, methodological, and experimental contributions.
- Submitted preprint [1] as first author.

R&D Intern: autonomous navigation for marine robotics. July 2019 – December 2019
Schlumberger-Doll Research — Manager: Arnaud Croux *Cambridge, MA, US*

- Design & implementation of a UKF-M algorithm with a precise physics model (C++, Python, ROS).
- Design & implementation of a localization algorithm using a Lidar & a prior map (Python, ROS, Open3D).
- Published paper [2] in internation conference as first author.

Research associate: statistical signal processing. September 2018 – February 2019
CEA Fundamental research (IRFU) — Manager: David Lhuillier *Gif-sur-Yvette, France*

- Topic: gravitational wave detection and characterization with the LISA platform.
- Bibliography review. Implemented a MCMC-based pipeline for simulated signal characterization (Python).

Peer-reviewed publications & Preprints

[1] A PAC–Bayesian Perspective on ILE Structured Prediction. 2020
Th. C., B. Guedj, M. Pérez-Ortiz, J. Shawe-Taylor | Preprint. *Open-access link*

[2] A Real–Time UKF on Manifolds for Challenging AUV Navigation. 2020
Th. C., C. Chahbazian, A. Croux, S. Bonnabel | IROS 2020 *Open-access link*

Teaching experience

Teaching assistant: Complex analysis – 10 hours intensive course 2020
Mines ParisTech - PSL *Paris, France*

Teaching assistant (colleur): mathematics (MPSI) – 3 semesters, 2 hours/week 2017-2019
Lycée Louis le Grand *Paris, France*

Community service

Reviewer since 2020
IEEE Robotics & Automation Letters

Commercial manager (non–profit) 2018-2019
Junior Entreprise Mines ParisTech (JuMP) *Paris, France*

- Managed sales & missions in R&D, development, and strategy.
- Responsible for 70,000 euros revenue for student non-profit.

Technical Skills

Programming languages: Python, C++, R
Librairies: Scipy suite, Scikit-learn, Pytorch, Matplotlib
International background: English & French native speaker, basic Spanish.