

Cédric Rommel

RESEARCH SCIENTIST

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Research Interests

Speech processing, Metric learning, Reinforcement learning, Optimal control, Optimization, feature selection, multi-task learning, ...

Education

INRIA, École Polytechnique (CMAP)

Paris, France

PHD IN MACHINE LEARNING AND OPTIMAL CONTROL

Nov. 2015 - Oct. 2018

Data analysis for aircraft trajectory optimization

Supervised by Frédéric Bonnans and Pierre Martinon, from the COMMANDS team.

CIFRE funding by company Safety Line.

MINES ParisTech

Paris, France

MASTER OF SCIENCE AND ENGINEERING

Sep. 2011 - Jun. 2015

Mathematics, Statistics, Control Theory, Optimization, Signal Processing, Software Engineering.

Experience

Ava Accessibility

Paris, France

CHIEF SCIENTIST

Nov. 2018 - Today

- Research and engineering in the speech processing field for deaf accessibility.
- Research in real-time neural speaker diarization, neural voice embeddings, zero-shot learning and speech separation.
- Design, implementation, training, deployment and monitoring of such models.
- AI roadmap design, team management and hiring of new scientists and engineers.

Safety Line

Paris, France

MACHINE LEARNING RESEARCHER (*PhD Candidate*)

Nov. 2015 - Oct. 2018

- Designed state-of-the-art learning-to-control models for aircraft trajectory optimization.
- Research in the fields of model-based reinforcement learning, functional data density estimation, multi-task learning and feature selection.
- Implemented models into python packages used in commercial products.

French Space Agency (CNES)

Paris, France

TRAJECTORY OPTIMIZATION ENGINEER (*Internship*)

Apr. - Aug. 2015

- Designed a trajectory optimization technique tailored for a reusable rocket project.

Systems & Control Center (CAS), MINES ParisTech

Paris, France

RESEARCH ASSISTANT

Sep. 2014 - Apr. 2015

- Inference of the orientation of a ballistic missile using the data of a single magnetometer.
- Work performed under the supervision of Nicolas Petit and Lionel Magnis during his PhD Thesis.
- Implementation in Matlab.

Reviewer

NeurIPS 2019, ICML 2020

Skills

Programming: Python, Git, LaTeX, NodeJS, C++, **Machine Learning:** Tensorflow, Pytorch, scikit-learn
Java, Matlab

Languages: Portuguese, French, English, Spanish

Publications and pre-prints

- **Rommel, Cédric**, Frédéric Bonnans, Pierre Martinon, and Baptiste Gregorutti. Gaussian mixture penalty for trajectory optimization problems. *Journal of Guidance, Control, and Dynamics*, 42(8):1857–1862, 2019
- **Rommel, Cédric**, Frédéric Bonnans, Baptiste Gregorutti, and Pierre Martinon. Structured Feature Selection of Continuous Dynamical Systems for Aircraft Dynamics Identification. *HAL*, 2018
- **Rommel, Cédric**, Frédéric Bonnans, Baptiste Gregorutti, and Pierre Martinon. Quantifying the Closeness to a Set of Random Curves via the Mean Marginal Likelihood. *HAL (Submitted)*, 2018
- **Rommel, Cédric**, Frédéric Bonnans, Baptiste Gregorutti, and Pierre Martinon. Block sparse linear models for learning structured dynamical systems in aeronautics. *HAL*, 2018
- **Rommel, Cédric**, Frédéric Bonnans, Baptiste Gregorutti, and Pierre Martinon. Aircraft Dynamics Identification for Optimal Control. In *7th European Conference for Aeronautics and Space Sciences*, 2017