Pierre-Cyril Aubin-Frankowski

Civil servant at Corps des Ponts, Eaux et Forêts
PhD Candidate in Applied Mathematics

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Education

2018 - 2021	**PhD in Applied Mathematics**, *Mines ParisTech*, Paris. **Machine learning and control theory at the CAS laboratory under the supervision of Prof. N. Petit** *Inference of dynamical systems based on vehicle trajectories*
2017 - 2018	**Master of Public Policy**, *AgroParisTech and ENPC*, Paris. **Banking and macroeconomics, Law, Environmental dialogue** *Master focusing on sustainable development and transportation issues designed for the civil servants of Corps des IPEF*
2016 - 2017	**Master of Science (M2)**, *ENS Paris-Saclay*, Cachan. **Machine Learning and Big Data - Highest honors** Specialized in convex optimization and kernel methods *Master MVA (Mathematics-Vision-Learning)*
2013 - 2016	**Master of Science**, *École polytechnique*, Palaiseau. **Major : Applied Mathematics** Minor : Quantum Physics and (Neuro)biology
2011 - 2013	**Scientific preparatory class**, *Lycée Louis-le-Grand*, Paris. MPSI, MP*

Experience

April 2018 - July 2018	**MPP internship**, *Research and Innovation Division, MTES*. Theme : AI for the scientific and technical agencies of the ministry Report on the applications of artificial intellgience at the Ministry of Environment
Mars 2017- Aug. 2017	**MS internship**, *CBIO, Ecole des Mines*. Theme : Gene regulation inference from single-cell RNA sequencing Recovering dynamics from a time-labeled point cloud of experimental measurements under the supervision of Prof. J-P.Vert
Mars 2016 - July 2016	**Research internship**, *IfA, ETH Zurich*. Theme : Modeling of cerebral autoregulation Cyclical systems identification under the supervision of Prof. J.Lygeros
Oct 2013-April 2014	**Civic service**, *Association Tremplin*. Full-time science teacher in senior high school in the outskirts of Paris

Skills

Programming Languages	Matlab, Python, C/C++, Java, OCaml
Languages	English - Proficient / Italian - Bilingual / Russian - Reading

Other

Painting (president of the Polytechnique Art Society), Opera (representative of Polytechnique Arts Society), Economic history, Foundations of quantum mechanics

Journal articles

- (Submitted) PCAF, Linearly-constrained Linear Quadratic Regulator from the viewpoint of kernel methods, June 2020
- PCAF and Jean-Philippe Vert, Gene regulation inference from single-cell RNA-seq data with linear differential equations and velocity inference, Bioinformatics, June 2020
- PCAF, Lipschitz regularity of the minimum time function of differential inclusions with state constraints, Systems & Control Letters, May 2020

Conference proceedings

- PCAF and Zoltan Szabo, Hard Shape-Constrained Kernel Machines, NeurIPS 2020, December 2020
- PCAF, Nicolas Petit and Zoltan Szabo, Kernel Regression for Trajectory Reconstruction of Vehicles under Speed and Inter-Vehicular Distance Constraints, Proceedings IFAC WC 2020, July 2020
- PCAF and Nicolas Petit, Data-driven approximation of differential inclusions and application to detection of transportation modes, Proceedings ECC 2020, May 2020