

# Cédric Vincent-Cuaz

3RD YEAR PHD STUDENT IN MACHINE LEARNING - LOOKING FOR A POSTDOCTORAL POSITION.

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## Summary

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I am a third year PhD student in Machine Learning under the supervision of Rémi Flamary and Marco Corneli at the Université Côte d'Azur, and part of the 3IA Côte d'Azur and Inria Sophia-Antipolis. In this context, I teach a variety of topics related to artificial intelligence to master's students, and study Machine Learning applications of Optimal Transport theory to structured data such as networks.

## Education

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### 3IA Côte D'Azur, MAASAI team Inria Sophia

Université Côte d'Azur, Nice, France

PHD STUDENT, OPTIMAL TRANSPORT FOR STRUCTURED DATA

2020-Now

### ENSAE, Institut Polytechnique de Paris

Université Paris-Saclay, Saclay,  
France

MSc, STATISTICS & ECONOMY, SPECIALIZED IN STATISTICS & MACHINE LEARNING

2015-2019

## Research Activities

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### PUBLICATIONS

- [Online Graph Dictionary Learning](#). Cédric Vincent-Cuaz, Titouan Vayer, Rémi Flamary, Marco Corneli, Nicolas Courty. ICML 2021. [h5-index: 237]
- [Semi-relaxed Gromov-Wasserstein divergence and applications on graphs](#). Cédric Vincent-Cuaz, Rémi Flamary, Marco Corneli, Titouan Vayer, Nicolas Courty. ICLR 2022. [h5-index: 286]
  - Also accepted and presented at CAp 2022 (French conference).
  - Extension: [Semi-relaxed Gromov-Wasserstein divergence for graphs classification](#), Cédric Vincent-Cuaz, Rémi Flamary, Marco Corneli, Titouan Vayer, Nicolas Courty. Grets2022 (French conference).
- [Template based Graph Neural Network with Optimal Transport Distances](#). Cédric Vincent-Cuaz, Rémi Flamary, Marco Corneli, Titouan Vayer, Nicolas Courty. Neurips 2022. [h5-index: 278]

### LIBRARY CONTRIBUTOR

- [POT Python Optimal Transport Library](#). Rémi Flamary & al. Journal of Machine Learning Research, 22(78):1-8, 2021.

### REVIEWER

- Thirty-sixth Conference on Neural Information Processing Systems, Neurips 2022.
- Neurocomputing Journal 2022.

### MAIN VENUES

- 27ème Colloque Francophone de Traitement du Signal et des Images, GRETSI 2022. Talk at the Optimal Transport session.
- Conférence sur l'Apprentissage automatique, CAp 2022. Talk and poster session.
- 53e Journées de Statistique de la Société Française de Statistique, JDS 2022.
- Tenth International Conference on Learning Representations, ICLR 2022. Online poster session.
- Statlearn spring school and workshop, STATLEARN 2022. Courses and poster sessions.
- Invited speaker at DANTE team's seminar, ENS Lyon 2022. Talk.
- Workshop on Recent Advances in Graph Machine Learning, GdR ISIS 2022. Talk.
- 52e Journées de Statistique de la Société Française de Statistique, JDS 2021. Supporting organization.
- 1st edition of the 3IA doctoral Workshop, 2021. Poster session.
- Annual Scientific Meeting of 3IA Côte d'Azur, 2021. Poster session.
- Thirty-eighth International Conference on Machine Learning, ICML 2021. Online Spotlight and Poster session.

## Academic Experience

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- Master DS4H - Minor Advanced AI (M1, M2, PhD students) [32h, Oct 2022 - Jan 2023]: Practical work supervisor introducing students to modern deep learning techniques (NN, Recommendation systems, RNN, CNN, Interpretability, Reinforcement Learning).
- Polytech Nice - M1 [20h, Feb - May 2022]: Project manager on Optimal Transport and Machine Learning applications for structured data.
- Master DSAI - M1 [7.5h, Jan 2022]: Lecture and practical sessions on Naive Bayes models in the course 'Introduction to Machine Learning'.
- Master DS4H - Minor Advanced AI (M1, M2, PhD students) [32h, Sep - Dec 2021]: Practical work supervisor introducing students to modern deep learning techniques (NN, Recommendation systems, RNN, CNN, Interpretability, Reinforcement Learning).
- Master DSAI - M1 [20h, Mar - May 2021]: Remedial teaching on Statistical Inference.
- Polytech Nice - M1 [20h, Feb - May 2021]: Project manager on Optimal Transport and Machine Learning applications for structured data.
- Master DSAI - M1 [24h, Oct 2020 - Jan 2021] : Project managers on two topics - "Latent Block Model with stochastic expectation maximization inference algorithm"; "Community Detection problems on dynamic graphs with varying communities".

## Professional Experience

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### IRT Saint-Exupéry, DEpendable & Explainable Learning

*Toulouse, France*

AI RESEARCHER, INTERN

*June 2019 - Dec 2019*

- Research on Few-Shot Learning : My study supervised by David Vigouroux aims to deepen the understanding of Few-Shot Learning models in order to make a first link with DEEL's main challenges.
- Literature review on Few-shot learning and Disentanglement learning.
- Design of evaluation frameworks to assess quality of learned embeddings for built toy datasets and real-world datasets.
- Benchmark of built features from existing and new methods, e.g. Generative Adversarial Networks (GAN, DCGAN, WGAN, SN-WGAN). Then mixed models with Crossed Mutual Information with two main objectives ( Jensen-Shannon Divergence and Wasserstein).

### Cochange, Welcome City Lab

*Paris, France*

DATA SCIENTIST, INTERN

*June 2018 - Oct 2018*

- Conducted 3 missions to open the start-up to data science expertise and develop new products for B2C and B2B. My missions aimed to build foundations to get early results and provide leads for further improvements. The internship ended with 5 days at IFTM Top Resa.
- Cost estimates to anticipate expenses during a trip: web scrapping, predictive models and completion methods
- Analysed financing methods of exchange offices to guide the marketing strategy: Data analysis, anomaly detection methods on time series (signal processing, Seq2seq)
- Predictions on most traded currencies (Forex) in France: Proofs of concept on trend reversal detection and predictive trading models.

### Cofinova

*Paris, France*

DATA ENGINEER INTERN

*France, June 2017- Sep 2017*

- Study of success determinants for a movie in France.
- Developed a pipeline to handle data flow and data preprocessing (scrapping, data mining, Docker, Spark)
- Supervised by an Econometrics research from CREST I investigated econometric methods as well as common supervised and unsupervised machine learning approaches.

### Workshop National Health Insurance Fund & ENSAE

*France, Paris*

DATA SCIENTIST

*Oct 2016 - May 2017*

- Study conducted by 3 students on Efficient Frontier optimization of assets portfolio based on CAC40.
- Benchmarked unsupervised (static and dynamic) machine learning solutions for portfolio management. Extended supervised approaches for decision making coupled with forecasting of financial time series for an adaptive financial strategy.

### Primary Health Insurance Fund of Nice

*France, Nice*

MANAGEMENT CONTROLLER INTERN

*Jun 2016 - Aug 2016*

- Improved Excel Platform created by the management controller by adding interaction tools.
- Implemented multiple iterative methods for time series forecasting to help his decision-making.

## Skills

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**Programming** Python [advanced] - Cython, SQL, Spark, R, VBA, C++ [intermediate]

**Languages** French [mother tongue], English [TOEIC B2(2018) / current level: C1], Chinese & Spanish [Beginner]

## Extracurricular Activity

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- **Sport:**
  - Practice Rock Climbing & Bouldering.
  - Practice Gymnastics.
  - Several participations to sport challenges for charity purpose (Humanis, La Croix-Rouge).