

# Cindy Trinh

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## Work Experience

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### Data Scientist, Marketing

June 2021 – Present

*Cdiscount – E-commerce company*

*Bordeaux, France*

- Designed, developed and deployed a machine learning-based recommender system suggesting similar products to more than 1 million customers each day. Improved conversion rate by 20 % and asserted performance on other metrics such as advertisement space fill rate and diversity of recommended products (**Python, SQL, NLP, scikit-learn**)
- Performed data analysis to design, develop and deploy a solution that reduced expenses due to cache and lag of servers by more than 20k€/month (**Python, SQL**)
- Designed, developed and deployed an end-to-end algorithm based on time series prediction to help customer automatically allocate advertising budget on days with highest conversion rates (**Prophet, Python, SQL**)
- Optimized our most-used machine learning API cutting its response time by two third and making it scalable (**FastAPI**)
- Adapted three of our machine learning systems through data analysis, code rearchitecture and development, allowing for their integration and use by other e-commerce platforms seeking to adopt our technology (**Python, SQL**)

### AI Developer Intern

Apr 2019 – Jul 2019

*Wintics – Startup in Computer Vision which analyzes urban video streams*

*Paris, France*

- Developed a pipeline for fine-tuning neural networks which doubled the speed of the process (**Python, Bash**)
- Prototyped a parking spot detector showcasing neural network capabilities to potential customers (**Python, OpenCV**)
- Conducted a literature review and benchmarked state-of-the-art video object tracking algorithms
- Automated the monitoring system of a mini-computer (Jetson Nano) (**Python, Bash**)

## Education

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### Ecole Normale Supérieure (ENS) Paris-Saclay

Oct 2019 – Dec 2020

*Master's degree in "Mathematics, Computer Vision, Machine Learning" ("MVA") - with honors*

*Paris, France*

### Ecole Centrale de Lille

Sep 2016 – Sep 2019

*Master of Engineering in "Data Science", "Applied Mathematics"*

*Lille, France*

## Research and Publications

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### Research Intern

Jul 2020 – Nov 2020

*CentraleSupélec – Supervisor: Prof. Richard Combes*

*Paris, France*

- Designed a multi-player multi-armed bandits algorithm which significantly outperforms state-of-the-art algorithms
- Implemented and benchmarked state-of-the-art algorithms of multi-player multi-armed bandits (**Python, Cython**)
- "A High Performance, Low Complexity Algorithm for Multi-Player Bandits Without Collision Sensing Information." *Cindy Trinh, Richard Combes.*
- "Towards Optimal Algorithms for Multi-Player Bandits without Collision Sensing Information." *Wei Huang, Richard Combes, Cindy Trinh.* Conference on Learning Theory (COLT) 2022.

### Research Assistant

Dec 2018 – Jun 2019

*Inria Lille, University of Lille, Team SequeL – Supervisor: Prof. Emilie Kaufmann*

*Lille, France*

- Extended Unimodal Thompson Sampling algorithm to Rank-one bandits, and proved the optimality of Unimodal Thompson Sampling algorithm for Unimodal and Rank-one bandits
- Implemented and benchmarked state-of-the-art rank-one bandits algorithms (**Python, Julia**)
- "Solving Bernoulli Rank-One Bandits with Unimodal Thompson Sampling." *Cindy Trinh, Emilie Kaufmann, Claire Vernade, Richard Combes.* Algorithmic and Learning Theory (ALT) 2020.

### Research Intern

May 2018 – Aug 2018

*Heriot-Watt University – Supervisor: Prof. Marcelo Pereyra*

*Edinburgh, UK*

- Implemented and benchmarked Monte Carlo Markov Chain (MCMC) algorithms for bayesian inference (**Matlab**)
- Initiated experiments of combining Variational Auto-Encoders to MCMC algorithms (**Python, Pytorch**)

## Skills

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**Technical:** Python, SQL, scikit-learn, PyTorch, Transformers, MLflow, Luigi, Spark

**Languages:** English (Proficient), French (Native), Chinese Mandarin (Basics), Chinese Teo-chew (Native)