

Cindy Trinh

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Industry Experience

Data Scientist / Machine Learning Engineer

June 2021 – June 2023

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**)
- Designed, developed and deployed an end-to-end time series prediction algorithm 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

Research and Publications

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**)
- "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
- "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 image estimation (**Matlab**)
- Initiated experiments of combining Variational Auto-Encoders to MCMC algorithms (**Python, PyTorch**)

Side-Projects

Large Language Models: Trained from scratch and fine-tuned an instructions following Llama2-10M (native **PyTorch**)

Computer Vision: Trained NeRF, Gaussian splatting on smartphone videos. Trained neural transfer neural networks.

Education

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

Skills

Technical: Python, SQL, scikit-learn, PyTorch, HuggingFace, MLflow, Luigi, Spark, Docker

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