

Victor Quach

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EDUCATION

Massachusetts Institute of Technology (MIT)

PhD in Computer Science; GPA: 5.0/5.0

Cambridge, MA

Sep 2017 - Jun 2023

Thesis Title: Generative Modeling with Guarantees

École polytechnique

Master's degree in Computer Science and Mathematics; GPA: 3.93/4.0; Rank: 21/511

Palaiseau, France

Sep 2016 - Aug 2017

Bachelor of Science in Engineering; GPA: 3.92/4.0

Sep 2014 - Aug 2016

EXPERIENCE

Algorithm Developer

Hudson River Trading

- Quant Research

NYC, NY

Aug 2023 - Present

Research Assistant

MIT Computer Science and Artificial Intelligence Laboratory (MIT CSAIL) - Regina Barzilay group

- Thesis work on **generative modeling with guarantees**.

Cambridge, MA

Sep 2017 - Jun 2023

Algorithm Developer Intern

Hudson River Trading

- Quant Research for Retail Market Making.
- Alpha and Order Execution Research for High Frequency Trading.

NYC, NY

May 2022 - Aug 2022

Software Engineering Intern

Facebook - PyTorch Core Team

- Improved performance of the PyTorch autograd engine by 16%.
- Developed an API for users to register saved tensor hooks reducing memory usage from $O(n)$ to $O(1)$ at the cost of a 5x slowdown.

Cambridge, MA

Jun 2021 - Aug 2021

Research Intern

IBM Research

- Developed a novel training scheme to improve generalizability of Transformers beyond the maximum length of their training data. Applications to question answering with long context.

Cambridge, MA

Jun 2020 - Aug 2020

Teaching assistant

MIT Department of Electrical Engineering and Computer Science (MIT EECS)

- 6.86x/6.883 Machine Learning with Python: from Linear Models to Deep Learning:** Expanded the content of the course by adding additional problems, debugging the handout code, devising better solutions and rewriting the automatic graders so they could scale to thousands of students.

Cambridge, MA

Jan 2019 - Aug 2019

Research Intern

École Normale Supérieure - EHESS - Cognitive Machine Learning team

- Designed hierarchical neural architectures on logical reasoning tasks with PyTorch.

Paris, France

Apr 2017 - Aug 2017

Software Engineering Intern

Theodo

- Developed a web application for a medical company using Symfony within an Agile team using Lean and Scrum

Paris, France

Jun 2016 - Sep 2016

PUBLICATIONS

- 📄 **Conformal Language Modeling**, ICLR 2024
- 📄 **Syfer: Neural Obfuscation for Private Data Release**, Preprint
- 📄 **Automated Chemical Reaction Extraction from Scientific Literature**, Journal of Chemical Information and Modeling, 2021
- 📄 **Blank Language Models**, Empirical Methods in Natural Language Processing, 2020

SKILLS / TOOLBOX

- Languages:** Python, C++, JavaScript, TypeScript, HTML
- Technologies:** MacOS, Linux, vim, tmux, git, nginx, Docker
- Libraries:** PyTorch, NumPy, Pandas, Scikit-Learn, Jupyter, Django, Flask, Vue.js, React

LEADERSHIP AND AWARDS

- Bronze Medal at the International Mathematical Olympiad (IMO 2012)
- Second National Prize in Mathematics (Concours Général 2012)
- Third National Prize in Life and Earth Sciences (Concours Général 2012)
- Regional Award in Physics (Concours Général 2012)
- Bronze Medal at the Balkan Mathematical Olympiad (BMO 2012)
- First National Prize at French Math Olympiads (Olympiades Académiques de Mathématiques 2011)