

Victor Quach

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EDUCATION

Massachusetts Institute of Technology (MIT)

PhD student in Computer Science; GPA: 5.0/5.0

Cambridge, MA

Sep 2017 - Ongoing

Elective courses: Advanced Machine Learning, Advanced Natural Language Processing, Advanced Algorithms, Computer Systems Security

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

MIT Computer Science and Artificial Intelligence Laboratory (MIT CSAIL)

Cambridge, MA

Research Assistant in the Natural Language Processing group

Sep 2017 - Ongoing

- Built complete machine learning pipelines (data scraping, cleaning, model design, implementation, training, visualization, and analysis)
- **RTN:** Implemented a model for many-attribute information extraction, leveraging techniques from transfer learning, domain adaptation and semi-supervised learning
- **PGM:** Designed a framework to experiment with multi-task learning strategies for representation learning in a pre-training scenario; pretrain on part-of-speech tagging, named entity recognition, chunking, dependency parsing, language modeling and fine-tune on sentiment analysis, question answering, and SNLI
- **NLPProg:** Conducted project on Automatic Program Repair using Natural Language hints (parsing python code, AST differentiation, graph neural network with message passing)
- **BLM:** Ongoing work on Blank Language Models: non left-to-right LM for controllable text generation

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

Cambridge, MA

Teaching assistant

Jan 2019 - Aug 2019

- **6.86x Machine Learning with Python: from Linear Models to Deep Learning:** 6.86x is an online class part of MITx's MicroMaster in Statistics and Data Science offered to 1000+ students, offered for the first time this year.
 - * 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.
 - * Assembled a class project for learners to compare EM and K-means for a collaborative filtering task
 - * Revitalized a reinforcement learning problem with task descriptions in natural language for learners to experiment with tabular learning, linear Q learning and deep Q learning
- **6.883 Modeling with machine learning: from algorithms to applications:** 6.883 is an intermediary-level Machine Learning course offered to 100+ MIT undergrads and graduate students, offered for the first time this year.

École Normale Supérieure - EHESS

Paris, France

Research Intern in the Cognitive Machine Learning team

Apr 2017 - Aug 2017

- **Deep Logic:** Designed, implemented and benchmarked hierarchical neural architectures on logical reasoning tasks with PyTorch. Experimented with hypernetworks in a meta-learning setting.

Theodo

Paris, France

Software Engineer Intern

Jun 2016 - Sep 2016

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

PROJECTS

- **🔗 Botafogo (CSS):** Responsive Wordpress theme for the ballroom dance team's website
- **🔗 Kinder (TypeScript):** Cloud-managed engine automating game actions through high-level scripts (MMORPG bots), 1000+ users.
- **🔗 IE-Turk (jQuery):** (200+ stars) Annotation tool for information extraction and named entity recognition with Mechanical Turk
- **🔗 Zip Trees benchmark (C++):** Implementation and benchmark of random binary search trees: skip lists, treaps and zip trees
- **🔗 LDAP Autocomplete (Vue.js / Django):** Autocompletion service for easy signing up backed by queries to the BR's LDAP
- **🔗 OpenData RATP (PHP):** Demo for using WSDL format and SOAP protocol to query RATP's API
- **🔗 Topological Data Analysis (D3.js / Python):** Visualization of the topological structure of NBA data using the Mapper Algorithm
- **🔗 Cashier Web App (AngularJS / Django):** Cashier app for grocery's transactions, still in use at Polytechnique's local minimarket

SKILLS / TOOLBOX

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

LEADERSHIP AND AWARDS

Finalist of the Data Science Game (DSG 2018), Ranked 37/2306 at Battle Dev (France's top coding competition - 2017), President of Binet Réseau (Student association that provides SysAdmin services, training and support - 2015) **Bronze medal at the International Mathematical Olympiad** (IMO 2012), Second national prize in Mathematics (Concours Général - 2012), Third national prize in Biology (Concours Général - 2012), Regional Awards in Physics (Concours Général - 2012), Bronze medal at the Balkan Mathematical Olympiad (BMO 2012), **Winner of the French Math Olympiads** (First National Prize at Olympiades Académiques de Mathématiques - 2011)