

# Victor Quach

Applying to the CS department

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<http://varal7.fr>

## Education

### Master's degree in Computer Science and Mathematics

#### École polytechnique

2014 - ongoing | Palaiseau, France

One of France's top universities for Sciences and Engineering

- Currently ranking 21st (top 6%)
- Relevant courses: *Artificial Intelligence in Mathematical Reasoning, Advanced Algorithms, Topological Data Analysis, Cryptology, Algebraic Number Theory, Text Mining and NLP*

GPA  
3.92 / 4

### Classe préparatoire aux Grandes Écoles

#### Louis-le-Grand

2012 - 2014 | Paris, France

Roughly equivalent to an undergraduate program in math/physics preparing to national competitive entrance exams

- Ranked 11th (top 1% among all candidates) at ENS Ulm (Paris). Ranked 29th (top 4%) at École polytechnique.

GPA  
4.0 / 4

## Experience

### Web Developer intern

#### Theodo

June 2016 - Sep 2016 | Paris, France | <http://www.theodo.fr/en/>

Theodo is an agile software development company solving their customer's business problems by building Web applications

- Developed a Symfony application (200,000+ lines) for ELSAN, a medical company and increased app usage by 100% in 2 months
- Practised Lean and Scrum among a team of five

### Officer cadet - Leadership training

#### Compagnie de Gendarmerie Nationale

Dec 2014 - Apr 2015 | Clermont, France

- Assisted the unit commander in leading 100+ gendarmes for law enforcement
- Planned and coordinated an anti-delinquency operation involving 4 teams

## Projects

### Topological Data Analysis of NBA Statistics

Oct 2016 - ongoing

A 3-people research project based M. Alagappan's works: "From 5 to 13: Redefining the Positions in Basketball"

- Using the Mapper Algorithm to understand the topological structure of the data (~400 players against 7 parameters)

### Cashier Web Application

Apr 2016 | <https://github.com/BinetReseau/superette-khube/>

Developed an application to register a grocery's transactions using Django REST Framework (Python) and AngularJS (Javascript)

- Now used daily by Polytechnique's local minimarket

### Ticket Dependency Graph

Aug 2016 | <https://github.com/Varal7/ticket-dependency-graph>

Trello add-on for handling dependencies between cards

- Conceived and implemented an interactive graph for storing and displaying dependencies using Vue.js & GoJs

### Write in the sky with fireworks

Sep 2015 - Apr 2016 | <https://github.com/Varal7/skyprint/>

One-year entrepreneurial scientific group project of 6 students.

- Conceived a 3D-printed prototype of 6 cannons synced by Raspberry Pis over UDP sockets
- Designed a web interface for receiving user input, displaying approximate solutions and path simulation

### MITM attack

June 2016 | <https://github.com/Varal7/mitm-attack/>

A man-in-the-middle attack for the *Hacking* course

- Used our own Wi-Fi router, custom DNS server, Squid proxy and ICAP protocol to intercept victims' passwords

### Proving Kronecker–Weber theorem

Sep 2013 - May 2014

Sophomore research project based on J.W. Cassel's works

- Got best grade (20/20) when presenting at ENS Ulm

# Volunteer

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## IT Student Society President

### Binet Réseau, École polytechnique

Dec 2015 - Dec 2016 | Palaiseau, France | <https://github.com/BinetReseau/>

Binet Réseau is a student association in charge of maintaining 10+ Linux servers for 1000+ students and providing technical support. We assist the school's IT System Department and provide custom DHCP and DNS servers to the students.

We provide hosting (54 To) for data storage and web projects and develop our own applications using Django and Angular.

- Led a team of 20 members as president of the association : recruitment, communication, long-term planning and training
  - Initiated mentorships between more advanced students and beginners
  - Binet Réseau ranked "Most attractive association to be part of" in Polytechnique in 2016
  - Gave crash courses in Git and Web Technologies for classes of 60+ students
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## Teacher at mathematical olympiad camps

### Animath

2013 - 2015 | Paris, France | <http://www.animath.fr/>

- Trained high school students for the International Mathematical Olympiad
  - Taught during three 10-day camps to nationwide selected students. Themas included: number theory, algebra, combinatorics
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## Awards

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**"Bronze medal"** - 2012  
International Mathematical Olympiad (Mar-Del-Plata)

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**"Bronze medal"** - 2012  
Balkan Mathematical Olympiad (Antalya)

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**"Second national prize"** in Mathematics - 2012  
Concours Général (France)

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**"Third national prize"** in Biology - 2012  
Concours Général (France)

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**"Regional award"** in Physics - 2012  
Concours Général (France)

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**"First national prize"** - 2011  
Olympiades Académiques de Mathématiques

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**"Outstanding Investment"** - 2016  
École polytechnique

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## Languages

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**French**  
Native

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**English**  
Proficient TOEFL Score: 111/120

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**German**  
Intermediate

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**Chinese**  
Beginner

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**Vietnamese**  
Beginner

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**Latin**  
Intermediate

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**Ancient Greek**  
Beginner

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## Outside activities

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**Piano**  
Played the piano for 12 years

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**Singing**  
Member of the school's vocal choir

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**Volley-Ball**  
Member of the school volley-ball's team

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**Blood giver**

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