Clément Pit-Claudel

143 Albany Street, Apt 413B, Cambridge MA 02139, USA
cpitcla@mit.edu – http://pit-claudel.fr/clement – +1 857 210 3020

MIT graduate student specializing in programming languages, synthesis, and verification.

Education

2014 – present **MIT**, Cambridge (Research focusing on formal logic, programming languages, and verification)
Currently studying towards a PhD in Computer Science, advised by Adam Chlipala. MSc completed in 2016.

2011 – 14 ***École Polytechnique***, Palaiseau (Specialization in computer science)
Diplôme d'ingénieur Modules include randomized algorithms, computer-aided reasoning, networking, algorithm design, compilation, information theory, harmonic analysis, and molecular biology. **GPA**: 4.35/4.4

2009 – 11 ***Lycée Louis-le-Grand***, Paris (Specialization in mathematics and computer science)
Classes préparatoires (MP Info). Modules include Mathematics, Physics and Computer Science.

Publications

2016 **Compilation Using Correct-by-Construction Program Synthesis** (web-friendly, pdf, bib)
Clément Pit-Claudel. *Master's Thesis at MIT; William A. Martin Memorial Thesis Award for Outstanding Thesis in CS*

Trigger Selection Strategies to Stabilize Program Verifiers (pdf, bib)
Rustan Leino, Clément Pit-Claudel. *Computer Aided Verification: 28th International Conference*

Company-Coq: Taking Proof General one step closer to a real IDE (pdf, bib)
Clément Pit-Claudel, Pierre Courtieu. *CoqPL'16: The Second International Workshop on Coq for PL*

2015 **Fiat: Deductive Synthesis of Abstract Data Types in a Proof Assistant** (pdf, bib)
Benjamin Delaware, Clément Pit-Claudel, Jason Gross, Adam Chlipala. *Proceedings of the 42nd ACM SIGPLAN-SIGACT Symposium on Principles of Programming Languages (POPL 2015)*

Professional experience

2015 **Improved the predictability of the *Dafny* program verifier,** generating triggers to prevent spurious quantifier instantiations and avoid matching loops in the SMT solver.
Microsoft Research – 3 months internship in Redmond, WA supervised by K. Rustan M. Leino

2013 **Designed and implemented a fast upper body limb detection and tracking framework** based on Bayesian inference in graphical models.
华为 | **Huawei** – 6 weeks internship in Shenzhen, China

Improved the performance of the *Psyche* theorem prover, extending its DPLL module to allow restarts.
École Polytechnique – 3 months research project supervised by Stéphane Lengrand

2011 – 12 **Organized and taught training sessions in mathematics and physics** targeted at motivated teenagers from low-income neighborhoods, to increase their chances of getting into college.
Association Tremplin – 8 months internship in Paris, France

2009 **Built a Fortran static analyzer** to analyze control flow, build call graphs, and locate dead code
CSSI Communication & Systèmes – 1 month internship in *Le Plessis Robinson*, France

Entrepreuneurial initiatives

2013 – present **Launched *YìXué Chinese Dictionary*,** a paid English-Chinese dictionary for Windows Phone. YìXué was featured three times on Microsoft's app store.

2009 – present **Created *Create Synchronicity*,** an open source backup & synchronization app (**350k downloads, 2k daily users,** translated to 29 languages). Featured in *PC Magazine*'s *Best free software of 2011* list and included in *Computer Bild*'s *Open Source DVD*.

Community service

Member of the **artifact evaluation committee** of POPL 2016.

Co-organized the 26th French national session of the European Youth Parliament, raising 20k€ and coordinating the logistics to host 250 persons for 4 days.

Extra-curricular activities

Blogged about mathematics and programming, getting featured in the *Code Project's Insider* daily newsletter.

Launched a twitter feed about Chinese linguistics and etymology, with over 500 subscribers.

Launched or contributed to various free software projects: wrote plugins and translations for Rockbox (a free audio player firmware) and contributed to multiple Emacs packages (wrote company-coq, F*-mode, and boogie-friends; co-maintained Flycheck and Proof-General)

Awards

Ranked 3rd in the computer science **competitive entrance exam** of the *École Normale Supérieure (ENS Ulm)*

Ranked 2nd in *École Polytechnique*'s ***Group Research Projects Awards*** for research on webcam-based gaze tracking.

Received the 2015 **Robert B. Guenassia Award** at MIT

Received the 2016 **William A. Martin Memorial Thesis Award for Outstanding Thesis in CS** at MIT

Received a 2017 **Frederick C. Hennie III Teaching Award** in Recognition of Outstanding Contributions to Departmental Teaching

Skills

Languages: **French** (mother tongue), **English** (fluent – TOEFL iBT 119/120), **Spanish**, **Chinese** (notions), **Japanese** (beginner)

Software design & development: Developed professional applications in C#, Emacs Lisp, Python, JavaScript, VB.Net, and C++. Other languages include Java, C, OCaml, Gallina, Clojure, PHP, HTML/CSS.