Remy SEASSAU

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Education

***MSc in Advanced Computer Science** 2022-2023 (1yr)
University of Oxford Oxford, United Kingdom

BSc, Mathematics and Computer Science Double Major 2019-2022 (3yr)
École Polytechnique, 3.89/4.0 GPA Palaiseau, France
- Graduate with honours (*cum Laude*)

Scientific Baccalaureate Jul 2019
Ecole Alsacienne Paris, France
- Graduated with highest honours

Research Experience

***Programming Languages Mentorship Workshop** Jan 2023
Scholarship to attend PLMW @ POPL 2023 Boston, USA

Bootstrapping a Verified Compiler Jul-Aug 2022 (2mo)
Supervised by Johannes Åman Pohjola @ Trustworthy Systems, UNSW Summer Research Internship

Bootstrapped a verified compiler for a driver-oriented language called Pancake. Translated a shallow embedding of the compiler into a deep embedding using HOL4.

Interactive Modular Decomposition for Logic Jan-Mar 2022 (3mo)
Supervised by Lutz Strassburger @ INRIA Bachelor Thesis Internship

Built a tool for the interactive creation and modular decomposition of graphs. Available here:
`http://www.lix.polytechnique.fr/Labo/Lutz.Strassburger/modular_decomposition/`

Automatic computation of barrier certificates Sep-Dec 2021 (4mo)
Supervised by Sergio Mover @ Laboratoire d'Informatique de l'X (LIX) Research Project

Conducted a literature review of methods for automatically finding a continuous invariant (barrier certificate) to verify the safety of a dynamical system and implemented template-based generation.

Formalization of ideals in commutative algebra Jul-Aug 2021 (2mo)
Supervised by Pierre-Yves Strub @ LIX Summer Research Internship

Formalized ideals in commutative algebra using Coq. This project was conducted for the future verification of a cryptographic protocol.

Skills

Languages	English (native), French (native), Spanish, German: Elementary Proficiency
Programming Languages	C, C++, Python, OCaml, Haskell, SML, Javascript, Prolog
Tools	Coq, HOL4, PRISM, Git, LaTeX

Awards and Honors

Highly commended Thesis (top 10%) at the Undergraduate Global Awards

Scholarship to attend Programming Languages Mentoring Workshop at POPL 2023

Marc Riedweg Award for Computer Science (High School)

Projects

Core War in Python	Computer Programming II
Formalizing Regular Expressions Using Coq	Logic and Proofs
Deep Trance	Machine Learning
Playing Tic-Tac-Toe using UDP sockets	Introduction to Networks
Smart SAT Solver in Haskell	Functional Programming
Automatic Computation of Barrier Certificates	Computer Science Project
Implementing Register Allocation	Compilers
Parallel Fast Fourier Transform	Concurrent and Distributed Algorithms

Relevant Courses

Logic and Proofs, Pierre-Yves Strub & Benjamin Werner - Undergrad Year 2 — Logic / FV

Computer Architecture, Timothy Bourke & Francesco Zappa Nardelli - Undergrad Year 2 — Systems

Introduction to Formal Languages, Emmanuel Haucourt - Undergrad Year 2 — Logic

Functionnal Programming, Noam Zeilberger - Undergrad Year 3 — PL

Compilers, Kaustuv Chaudhuri - Undergrad Year 3 — Systems / PL

Computer Science Project, Sergio Mover - Undergrad Year 3 — FV

Constraint Logic Programming, Francois Fages - Undergrad Year 3 — Logic

Concurrent and Distributed Computing, Eric Goubault - Undergrad Year 3 — Systems

Principles of Programming Languages, Sam Staton - Grad Year 1 — PL

Computer-Aided Formal Verification, David Parker - Grad Year 1 — FV

Probabilistic Model Checking, Alessandro Abate - Grad Year 1 — FV

Positions of Responsibility

Sysadmin for the Student IT Network Society

- Worked closely with the university's IT department
- Helped run a self-hosted cloud, event organizer/social network, ratemyclass and other student services

Board member of the Computer Science Society

- Organized large-audience computer science events (hackathons, talks)
- Collaborations with the student developper club and Polytechnique's IEEE branch

Board member of the Sports Bureau

- Organized a multi-university, multi-sport tournament

Board member of the Music Society

- Organized large scale musical events (concerts, music week)
- Sound engineer and equipment manager