

# François HUBLET

A PhD candidate at ETH Zürich from June 2021, I hold two Master's degrees in CS from ETH Zürich, Switzerland, and École polytechnique, France, as well as a BA in Classics from Université de Toulouse. Interested in formal methods in computer science and their applications. I have gathered experience in project management as well as a keen appreciation for multicultural working environments, incl. a working knowledge of 6 languages.

## Education

- 2019–2021 **MSc, Computer science**, ETH Zürich, Zürich (Switzerland).  
 General computer science track.  
 Master's thesis: *The Databank Model* (Prof. David BASIN). Grade: 6/6.  
 ETH Zürich's CS department is consistently ranked among the top 10 worldwide. GPA: 5.8/6.  
**Courses:** *Concepts of Object-Oriented Programming; Algorithmic Game Theory; Geometry and Algorithms; Algorithms Lab; Research in Computer Science; Formal Methods for Information Security; Program Analysis for System Security and Reliability; Distributed Algorithms; Computational Intelligence Lab; Philosophy of Algorithms.* (non-exhaustive)
- 2016–2020 **MSc, Computer science**, École polytechnique, Palaiseau (France).  
 Specialization track: Algorithms and the Foundations of Programming Languages.  
 L'École polytechnique is France's leading school of engineering and science.  
 Ranked 4th of 750 at entry examination of the MP-I (math, physics and informatics) stream.  
 Ranked 34th of 540 at the end of year 2. Overall GPA: 3.93.  
**Courses:** *CS Advanced Algorithms; Computational Logic; Randomization in Computer Science; Information Theory; Compilers; Algorithm Design and Analysis; Fundamentals of Computer Logic; Cybersecurity. Math Numerical Approximation and Optimization; Modelling Random Events; Algebra and Galois Theory; Differential Calculus and Complex Analysis; Distributions.* (non-exhaustive)
- 2017–2018 **BA (Licence), Classics**, Université Toulouse-II, Toulouse (France).  
 Latin, Ancient Greek, ancient literature, comparative linguistics.  
 Graduated *cum laude* (15.1/20) within one year of distance learning.
- 2014–2016 **Classes préparatoires**, Lycée Louis-le-Grand, Paris (France).  
 Intensive training in mathematics, physics and computer science.  
 This 2-year curriculum is required to pass entry examinations to France's *Grandes Écoles*.
- 2014 **Baccalauréat in science**, Lycée Saint-Joseph, La Roche-sur-Yon (France).  
 Achieved the maximal mark of 20/20 (100%), thus scoring among France's best 100.  
 Won 4 prizes at the most selective nationwide academic competition (*Concours général*).

## Teaching experience

- Sep 2019– **ETH Zürich, Zürich**, Teaching assistant.  
 Exercise sessions (in German) for the courses *Algorithmen und Datenstrukturen* by Prof. Dr. Markus Püschel and Prof. Dr. David Steurer and *Algorithmen und Wahrscheinlichkeit* by Prof. Dr. Angelika Steger and Prof. Dr. Emo Welzl. Also taught exam preparation workshops.
- Nov 2018– **École polytechnique, Palaiseau**, Teaching assistant.  
 Feb 2019 German-language debating course for 2nd-year students.

## Research experience

- Feb 2020–  
Jul 2020 **Monitoring Unsafe First-order Formulae**, *ETH Zürich*, advisors: Dr. Dmitriy TRAYTEL, Dr. Srđan KRSTIĆ, Martin RASZYK, Prof. David BASIN.  
Developed a verified and executable formalization in Isabelle/HOL of an algorithm for first-order monitoring with finite predicates inspired by the work of Aylamazyan *et al.*, dropping the monitorability condition common in such contexts. Graded 6/6.
- Apr 2019–  
Aug 2019 **Rule-based Parsing of Classical Latin: Handling Free Word Order and Hyperbata**, *Göteborgs Universitet*, Sweden, advisor: Prof. Aarne RANTA.  
Developed a novel context-sensitive formalism and extended a special-purpose grammar description language to encode syntactic phenomena observed in Classical Latin and other free word order languages. Submitted a journal paper currently under review.
- Oct 2018–  
Apr 2019 **Champollion**, advisor: Prof. Benjamin DOERR.  
Improving existing algorithms for bilingual lexical induction using a graph-based approach.
- Oct 2018–  
Dec 2018 **Lemma-Forgetting**, advisor: Dr. Stéphane GRAHAM-LENGRAND.  
Improving an OCaml SMT-solver by adding support for lemma-forgetting techniques.
- Sep 2017–  
May 2018 **Speech-to-maths**, *co-team lead*, advisor: Dr. Philippe CHASSIGNET.  
As a team of 7, we designed an open-source solution for mathematical formula dictation. I led a group of 4 focussing on back-end developments, which built an error-tolerant statistical parser from scratch in Python.
- Sep 2015–  
Mar 2016 **Computer-aided Visualization of Four-Dimensional Rotations**.  
Developed a new algorithm to efficiently animate 4D-rotations using quaternion algebra.

## Professional experience

- Sep 2018–present **Groupe d'études géopolitiques**, *Paris*, Team lead, editor and *pro bono* political analyst.
  - Managing editor of BLUE, the first bilingual and data-informed EU-wide electoral review.
  - Main developer of a web-based platform aggregating the results of the 2019 EP elections.
  - Led a trilingual report on border management during the COVID pandemic (20+ interviews).
  - Wrote 60+ articles mostly focussing on European and German politics.
- Jul 2018–  
Aug 2018 **European Central Bank**, *Frankfurt (Main)*, Data intern.
  - Worked in an international environment, speaking English, German, Italian.
  - Automated data management tasks, developed software.
  - Analyzed and modeled liquidity-providing operations.
  - Delivered presentations, including at an international meeting.
- Oct 2016–  
Mar 2017 **Paris Police Prefecture**, *Paris*, Intern in police headquarters.
  - Participated in high-level project management.
  - Negotiated with public and private actors and led internal coordination tasks.
  - Helped identifying, evaluating and preparing the missions of a security team of ca. 400.
  - Developed software.

## Language skills

French	} Native or native-like proficiency	Arabic	} Basic knowledge
German		Dutch	
English		Ancient Greek	
Italian	} Professional proficiency	Icelandic	
Latin		Romanian	
Swedish		Swiss German	
		Romansh	
		Spanish	

## Computer skills

- Programming OCaml, Python (Django),  $\LaTeX$ , C, C++, Isabelle/HOL, x86-64 Assembly, Java, Grammatical Framework, SQL, Datalog
- OS Debian Linux, Windows