Hector Suzanne
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- **PhD (in-progress)** "Types-based static resource analysis for high-level languages" under the direction of *Emmanuel Chailloux*, within the *Laboratoire d'informatique de Paris 6*.

- **Université Paris-Cité** Graduated with a Master's in Mathematics: "Logic, Mathematics and Fondations of Computer Science (LMFI)"

- **Sorbonne Université** Graduated with a Master's in Computer Science: "Science and Technologies of Software (STL)" research curriculum.

- **ENS Paris-Saclay** Graduated with a License in Computer Science in 2017.

- **English level C2** certified *Cambridge Advanced Grade A* in 2016

Doctorate Thesis

Types-based static resource analysis for high-level languages Sorbonne Université
under the direction of Emmanuel Chailloux, at LIP6. *2021 – Current*

Scientific Work

- Study of state-of-the-art semantics for resource analysis
- Creation of a *Call-By-Push-Value* machine for resource-aware program execution
- Extention to a memory bound-inference procedure for ML-style languages
- Implementation of a state-of-art resource analyser using those new tools

Publication

- *"A reusable machine-calculus for automated resource analyses"* with *Emmanuel Chailoux*, accepted to the *Logic-Based Program Synthesis and Transformation (LOPSTR'23)* conference. DOI to be generated.

Responsibilities

- Elected to the laboratory council as a representative of the Ph.D. students
- Member of the Ph.D. student council
- Volunteer for the organisation of the *European joint conferences on theory and practice of software (ETAPS'23)*
- Teaching assistant duties ($\approx$ 3 groups per term for 6 terms, see next page)
  - ⋆ Introduction to programming with **Python**
  - ⋆ Functional programming with **OCaml** (fall and summer term)
  - ⋆ Program **semantics** and analyses
  - ⋆ Discrete **mathematics**

Miscellaneous

- Financed by the PhD grant of the *Ecole Doctorale Informatique, Télécommunications et Electronique de Paris* (EDITE)
- Started in february 2021, Ph.D. defense planned for June 2024

Education

Université de Paris   Paris
M2 Mathematics, LMFI curriculum   *2020 – 2021*

- **Mathematics and logic** Set theory, cardinal and ordinal arithmetic ; Model theory ; Proof Theory, classical/intuitionnistic/ linear logic, natural deduction, sequent calculus.

- **Category Theory** Categories functors, natural transformations ; (Co)-limits, adjunctions, monads ; Enrichement ; Higher algebra.

- **Computer Science** Calculability. Rewriting systems, logical relations ; Linear logic, proof nets ; co-induction, bisimulation.

Sorbonne Université   Paris
Computer Science Master's, STL curriculum   *2018 – 2020*

- **Functional languages and type systems** at "Master Parisien de Recherche en Informatique"

- **Compilation & Semantics** Types and semantics, polymorphism, subtyping, overloading ; Formal proofs, dependent types ; Abstract interpretation.

- **Algorithms** Analytic combinatorics ; random sampling ; average complexity ; probabilistic algorithms.

- **Programming** Software engineering ; Databases and ontologies ; Component-based programming ; Concurrency, π-calculus, & synchronous programming; Servers.

ENS Paris-Saclay   Cachan
Licence in Computer Science, admitted through contest   *2016 – 2017*

- **Algorithms** Proofs and analyses of algorithms for correction and complexity.

- **Logic & Semantics** Classical logic; Turing machines, calculability, complexity; Verification with *Coq* ; Formal semantic, panorama of programming paradigms, λ-calculus.

- **Programming** Pure functional programming ; Using categorical constructs; UNIX programming ; Fundamentals of networking.

Past experiences

Three internships at LIP6   Sorbonne Université
under Emmanuel Chailloux   *Summers 2019 & 2020, March – Sept. 2021*

1. Conception of a type system for safe concurrency in Cython (*2 months*)

2. Conception of a memory-cost static analysis for synchronous functional programming following the work of *Steven Varoumas* (*6 month*)

3. Beginning of the Ph.D. (*6 months*)