Enguerrand Prebet

Post-doctoral researcher - KIT

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Education

2019–2022 **PhD in Computer Science**, *ENS of Lyon/Università di Bologna*, France/Italy
Typed Behavioural Equivalences in the Pi-Calculus

2017–2019 **Master degree in Communication Systems**, *EPFL*, Lausanne, Switzerland
Double degree with ENS of Lyon

2016–2019 **Master degree in Fundamental Computer Science**, *ENS de Lyon*, France
Double degree with EPFL

2015–2016 **Bachelor of Science in Fundamental Computer Science**, *ENS de Lyon*, France
Normalien Student

2013–2015 **Preparatory School in Mathematics, Physics**, *Lycée Henri IV*, Paris, France
Computer Science option

Teaching

Teaching Assistant

2022–2024 **Teaching Assistant**, *Karlsruhe Institute of Technology*, Germany
- 2024–now Programming Paradigms (BSc)
- 2023–now Constructive Logic (MSc)
- 2022–2023 Logical Foundations of Cyber-Physical Systems (Msc)

2019–2022 **Teaching Assistant**, *ENS de Lyon*, France
- 2019–2021 Programming Language Theory (L3)
- 2019–2020 Optimisation and Approximation (M1)
- 2020–2022 Performance Evaluation in Networks (M1)
- 2021–2022 Compilation process for the 'Agrégation d'informatique'

2021–2022 **Teaching Assistant**, *UCBL*, Lyon, France
Computer Architecture and System (L2)

Others

2021 **Advisor for a bachelor thesis**, *Karlsruhe Institute of Technology*, Germany
on 'Building a Constructive Logic Proof Checker with Proofs as Programs'

2023 **Proseminar on Differential Programming**, *Karlsruhe Institute of Technology*, Germany
with Noah Abou El Wafa, Samuel Teuber and André Platzer

2021 **Advisor for a bachelor student**, *ENS de Lyon*, France
on 'Equivalence de programmes CCS typés', co-advised with Daniel Hirschkoff

Publications

Unless stated with '*', authors names are in alphabetical order.

International Conferences

*Enguerrand Prebet and André Platzer. Uniform substitution for differential refinement logic. In Christoph Benzmüller, Marijn J. H. Heule, and Renate A. Schmidt, editors, *Automated Reasoning - 12th International Joint Conference, IJCAR 2024, Nancy, France, July 3-6, 2024, Proceedings, Part II*, volume 14740 of *Lecture Notes in Computer Science*, pages 196–215. Springer, 2024.

Daniel Hirschkoff, Guilhem Jaber, and Enguerrand Prebet. Deciding contextual equivalence of ν-calculus with effectful contexts. In Orna Kupferman and Pawel Sobocinski, editors, *Foundations of Software Science and Computation Structures - 26th International Conference, FoSSaCS 2023, Held as Part of the European Joint Conferences on Theory and Practice of Software, ETAPS 2023, Paris, France, April 22-27, 2023, Proceedings*, volume 13992 of *Lecture Notes in Computer Science*, pages 24–45. Springer, 2023.

Enguerrand Prebet. Functions and references in the pi-calculus: Full abstraction and proof techniques. In Mikolaj Bojanczyk, Emanuela Merelli, and David P. Woodruff, editors, *49th International Colloquium on Automata, Languages, and Programming, ICALP 2022, July 4-8, 2022, Paris, France*, volume 229 of *LIPIcs*, pages 130:1–130:19. Schloss Dagstuhl - Leibniz-Zentrum für Informatik, 2022.

Daniel Hirschkoff, Enguerrand Prebet, and Davide Sangiorgi. On sequentiality and well-bracketing in the π-calculus. In *36th Annual ACM/IEEE Symposium on Logic in Computer Science, LICS 2021, Rome, Italy, June 29 - July 2, 2021*, pages 1–13. IEEE, 2021.

Daniel Hirschkoff, Enguerrand Prebet, and Davide Sangiorgi. On the representation of references in the pi-calculus. In Igor Konnov and Laura Kovács, editors, *31st International Conference on Concurrency Theory, CONCUR 2020*, volume 171 of *LIPIcs*, pages 34:1–34:20. Schloss Dagstuhl - Leibniz-Zentrum für Informatik, 2020.

Vishnu V. Narayan, Enguerrand Prebet, and Adrian Vetta. The declining price anomaly is not universal in multi-buyer sequential auctions (but almost is). In Dimitris Fotakis and Evangelos Markakis, editors, *Algorithmic Game Theory - 12th International Symposium, SAGT 2019, Athens, Greece, September 30 - October 3, 2019, Proceedings*, volume 11801 of *Lecture Notes in Computer Science*, pages 109–122. Springer, 2019. Best paper award.

Workshops

Daniel Hirschkoff and Enguerrand Prebet. Using pi-calculus names as locks. In Claudio Antares Mezzina and Georgiana Caltais, editors, *Proceedings Combined 30th International Workshop on Expressiveness in Concurrency and 20th Workshop on Structural Operational Semantics, EXPRESS/SOS 2023, and 20th Workshop on Structural Operational SemanticsAntwerp, Belgium, 18th September 2023*, volume 387 of *EPTCS*, pages 76–96, 2023.

Daniel Hirschkoff, Enguerrand Prebet, and Davide Sangiorgi. Modeling imperative constructs in the pi-calculus. In Alessandra Cherubini, Nicoletta Sabadini, and Simone Tini, editors, *Proceedings of the 20th Italian Conference on Theoretical Computer Science, ICTCS 2019, Como, Italy, September 9-11, 2019*, volume 2504 of *CEUR Workshop Proceedings*, pages 136–138. CEUR-WS.org, 2019.

Journals

Vishnu V. Narayan, Enguerrand Prebet, and Adrian Vetta. The declining price anomaly is not universal in multi-buyer sequential auctions (but almost is). *Theory Comput. Syst.*, 66(3):546–580, 2022.

Thesis

Enguerrand Prebet. *Typed Behavioural Equivalences in the Pi-Calculus. (Équivalences comportementales typées dans le pi-calcul)*. PhD thesis, École normale supérieure de Lyon, France, 2022.

Others

Enguerrand Prebet. On Up-to Context Techniques in the π-calculus. working paper or preprint, December 2021.

Experience

Internships

2019 **Master's thesis,** *ENS de Lyon,* France, 5 months.
Behavioural equivalence in imperative pi-calculus.

2018-2019 **R&D Trainee,** *Total,* Pau, France, 6 months.
Image Classification with Deep Learning using Caffe.

2017 **Visiting Student Researcher,** *McGill University.* Montreal, Canada, 3 months.
Analysis of Price of Anarchy for Simultaneous Multiple Round Auction.
Design simulation of Nash equilibria in Python regarding decreasing price anomaly in sequential auction.

2016 **Visiting Student Researcher,** *ENS Ulm,* Paris, France, 6 weeks.
Developed graphical interface for analysing graphs using Tkinter in Python
Validation of discharging rules for planar graphs and reflexion around Steinberg's conjecture variations.

Competitive Programmaing and Projects

Feb-Apr 2021 Ranked 7^{th} (resp. 25^{th}) at Google Hashcode Qualifications (resp. World Finals) in a group of four
Design and implementation of algorithms in C++/Python3. Heuristics testing.

Nov 2020 Ranked 4^{th} at the 16^{th} edition of BattleDev
Short implementation of algorithms in Python3.

Nov 2017 Ranked 13^{th} at SWERC'17 ACM-ICPC with the team EPFL Winners
Design and implementation of algorithms in C++.

2016–2017 **Vectrabool,** *ENS de Lyon.* France.
Bitmap vectorization usable as a Gimp plugin
Leader of a subgroup. Mix of C++ and Python

2016 **Group Project,** *ENS de Lyon*, France
SAT Solver using various heuristics in C++.
Parsing using Lex/Yacc. Clause learning. Tseitin transform.

Computer Science Skills

Advanced	C++, Python, Scala
Domains	Semantics of Programming Languages, Logic in Computer Science, Concurrency Theory, Hybrid Systems, Behavioural Equivalences, Bisimulation
Various	Coq, CAML, MATLAB, Bash, Git, LaTeX

Languages

Native	French
Advanced	English C1 - Cambridge English: Advanced Score 193
Beginner	German, Japanese