Étienne Bamas

Email: etienne.bamas@inf.ethz.ch ↗
Google scholar profile ↗
Website ↗

Education and Academic Positions

Postdoctoral Fellow at the ETH AI Center
Zürich, Switzerland
2023–now

École Polytechnique Fédérale de Lausanne (EPFL)
Ph.D. in Theoretical Computer Science, Advisor: Ola Svensson ↗.
Lausanne, Switzerland
2018–2023

Université Paris Diderot - École Normale Supérieure Paris
M.Sc. in Theoretical Computer Science (*summa cum laude*); GPA: 18.81/20 (rank: 2/63).
Paris, France
2017–2018

- Thesis: "Local algorithms in graphs", Advisor: Louis Esperet ↗.

École polytechnique (Engineering diploma)
Specialization in Machine Learning and Algorithms.
Paris, France
2014–2018

Lycée Louis-Le-Grand, classe préparatoire MPSI/MP*
Training in mathematics and physics for competitive exams to enter "Grandes écoles".
Paris, France
2012–2014

French "Baccalauréat série S" (*summa cum laude*).
Paris, France
2012

Internships and Academic Visits

Academic visit at the Simons Institute
Visitor of the "Data-Driven Decision Processes" ↗ semester program.
Berkeley, USA
Nov. 2022–Dec. 2022

Academic visit at ETH Zürich
Visitor of Prof. Rico's Zenklusen group
Zurich, Switzerland
May 2022–June 2022

Research internship G-SCOP
Research in the G-SCOP ↗ team for combinatorial optimization.
Grenoble, France
April 2018–August 2018

- I investigated what can or cannot be computed by local algorithms in graphs. This project led to two publications in theoretical computer science conferences.

Research and software engineering internship, INRIA
Research done in the INRIA team NANO-D ↗.
Grenoble, France
March 2017–July 2017

- I designed and implemented an efficient algorithm for detecting symmetries in folded protein in order to predict their interactions. The programming language was C++.

Internship at Surrey Satellite Technology Ltd
Intern in the OBDH (On-Board Data Handling) team.
Guildford, England
Summer 2017

- I took part in analyzing circuit designs and optical devices for satellites as well as programming analysis software.

Military Service
Paris Fire Brigade, first fire group.
Paris, France
September 2014–April 2015

- Team leader of a rescue team of 3 people in case of accident, dangerous disease, or fire.

Funding and Honors

- ETH AI Center Postdoctoral fellowship   2023-2025
- Grant from the Bernoulli Center to organize the ALPS ☑ workshop ($\sim$30000 chf)   2022
- NeurIPS oral presentation ($\approx 1\%$ acceptance rate)   2020
- NeurIPS spotlight presentation ($\approx 4\%$ acceptance rate)   2020
- EPFL IC School 1-year Fellowship   2018
- Citation for outstanding service in my unit during military service   2015

Publications

1. Étienne Bamas, "Lift-and-Project Integrality Gaps for Santa Claus", *under review at FOCS.*

2. Étienne Bamas, Sai Ganesh Nagarajan, Ola Svensson, "An Analysis of D^α seeding for k-means" ☑, *under review at ICML.*

3. Étienne Bamas, Alexander Lindermayr, Nicole Megow, Lars Rohwedder, Jens Schlöter, "Santa Claus meets Makespan and Matroids: Algorithms and Reduction" ☑, 35th *ACM-SIAM Symposium on Discrete Algorithms*, SODA 2024.

4. Étienne Bamas, Lars Rohwedder, "Better Trees for Santa Claus" ☑, 55th *Annual ACM Symposium on Theory of Computing,* STOC 2023.

5. Étienne Bamas, Marina Drygala, and Ola Svensson, "A Simple LP-Based Approximation Algorithm for the Matching Augmentation Problem" ☑, 23rd *Conference on Integer Programming and Combinatorial Optimization,* IPCO 2022.

6. Étienne Bamas, Marina Drygala, and Andreas Maggiori, "An Improved Analysis of Greedy for Online Steiner Forest" ☑, 33rd *ACM-SIAM Symposium on Discrete Algorithms,* SODA 2022.

7. Étienne Bamas, Paritosh Garg, and Lars Rohwedder, "The Submodular Santa Claus Problem in the Restricted Assignment Case" ☑, *48th International Colloquium on Automata, Languages, and Programming,* ICALP 2021.

8. Étienne Bamas, Andreas Maggiori, and Ola Svensson, "The Primal-Dual method for Learning Augmented Algorithms" ☑, *Advances in Neural Information Processing Systems 33*, NeurIPS 2020 (**oral presentation**).

9. Étienne Bamas, Andreas Maggiori, Lars Rohwedder, and Ola Svensson, "Learning Augmented Energy Minimization via Speed Scaling" ☑, *Advances in Neural Information Processing Systems 33*, NeurIPS 2020 (**spotlight presentation**).

10. Étienne Bamas and Louis Esperet, "Local Approximation of the Maximum Cut in Regular Graphs" ☑, *Graph-Theoretic Concepts in Computer Science - 45th International Workshop*, WG 2019.

11. Étienne Bamas and Louis Esperet, "Distributed Coloring of Graphs with an Optimal Number of Colors" ☑, *36th International Symposium on Theoretical Aspects of Computer Science*, STACS 2019.

Teaching

- Lecturer for "AI Center Projects in Machine Learning Research"   Spring 2024

- Lecturer for "Advanced Topics in Discrete Optimization"   Spring 2024

- Supervision of master thesis at ETHZ   since 2023
  Supervised students: Thibault Vignon (Fall 2023), Jonathan Schnell (Spring 2024).

- Supervision of semester projects at EPFL   2021-2023
  Supervised students: Alexandre Reynaud (master student), Taha El Ghazi (master student).

- Teaching Assistant at EPFL   2019–2022
  "Algorithms" (head TA), "Theory of Computation" (head TA), "Information, Calcul, Communication"
- Teaching Assistant at Lycée Janson-de-Sailly   2017–2018
  In charge of oral exams in mathematics

REFERENCES

1. Prof. Ola Svensson at EPFL (PhD advisor).
   Email: ola.svensson@epfl.ch
   Postal address: Building INJ (INJ112), Station 14, 1015 Lausanne
   Personal website: https://theory.epfl.ch/osven/ ☑

2. Prof. Lars Rohwedder at Maastricht University (frequent co-author).
   Email: contact@larsrohwedder.com
   Postal address: P.O. Box 616, 6200 MD Maastricht
   Personal website: https://larsrohwedder.com/ ☑.

3. Prof. Rico Zenklusen at ETH Zurich (post-doc mentor).
   Email: ricoz@ethz.ch
   Postal address: HG G 22.4, Rämistrasse 101, 8092 Zürich
   Personal website: https://math.ethz.ch/ifor/groups/zenklusen_group/rico-zenklusen.html ☑. .

4. Prof. Anupam Gupta at New-York University (member of the jury of my PhD defense).
   Email: anupam.g@nyu.edu
   Postal address: 251 Mercer Street, New York NY 10012
   Personal website: https://cs.nyu.edu/ anupamg/ ☑

5. Prof. Louis Esperet at G-SCOP lab (MSc thesis advisor).
   Email: louis.esperet@grenoble-inp.fr
   Postal address: 46, avenue Félix Viallet, 38000 Grenoble, France
   Personal website: https://oc.g-scop.grenoble-inp.fr/esperet/ ☑

SKILLS AND LANGUAGES

- **Programming:** Java, C++, Python, Pytorch.
- **French:** Native.
- **English:** Full professional proficiency (110/120 TOEFL iBT).
- **Spanish and Mandarin:** Basics.

ACADEMIC SERVICE AND TALKS

- I co-organized the workshop ALPS '22 ☑ on algorithms with predictions (~ 45 international participants).
- Program committee: MAPSP '24
- Reviewer for the conferences: MFCS '19, WAOA '20, ITCS '20, '23, NeurIPS '21, '22, '23, SODA '22, '23, ICML '22, STOC '23, '24, IPCO '24
- Reviewer for the journals: Algorithmica (2021), Journal of Computer and System Sciences (2023).
- I gave a talk at the following conferences or workshops: WG '19, STACS '19, Dagstuhl scheduling seminar in 2020 and 2023, NeurIPS '20, ICALP '21, Operations Research Bern (OR) '21, SODA '22, STOC '23.

Extracurricular Activities

- Fond of sports: running (I enjoy sharing my (modest) results on Strava ↗), skiing, rock climbing, hiking.
- Member of EPFL emergency medical team (2019).