Gilbert Maystre

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Education

2020 - **PhD candidate in Computer Science**
École Polytechnique Fédérale de Lausanne
Algorithms and lower bounds

2016 - 2020 **MSc. in Computer Science**
École Polytechnique Fédérale de Lausanne

2015 - 2016 **International exchange student**
The Johns Hopkins University (Baltimore - USA)

2013 - 2016 **BSc. in Computer Science**
École Polytechnique Fédérale de Lausanne

Employment

2020- **Research assistant - EPFL**
Contributing to research and teaching activities at the School of Computer and Communication Sciences.

2023
3 Months **Research intern - Oracle labs**
Specialised in fast vector databases and implemented a highly optimized parallel version of the HNSW index in C language, matching other leading libraries under tight constraints. My work also included literature surveying and in particular, proposing solutions to handle database vector insertions/deletions.

2018
4 Months **Data-science intern - Bühler Group**
Worked in the research department and applied machine learning techniques to optimize production in wheat milling plants.

2017 - 2018
6 Months **Software engineering intern - AdNovum**
Developed new features for the leading Swiss mobile payment app in a large team of developer. Saw the whole spectrum of software development, from architecture to testing.

Publications

in my field, authors are listed alphabetically

ITCS24 **One-Way Functions vs. TFNP: Simpler and Improved**
with Lukáš Folwarczný, Mika Göös, Pavel Hubáček and Weiqiang Yuan

FOCS22 **Randomised Composition and Small-Bias Minimax**
with Shalev Ben-David, Eric Blais and Mika Göös

FOCS22	**Separations in Proof Complexity and TFNP** with Mika Göös, Alexandros Hollender, Siddhartha Jain, William Pires, Robert Robere and Ran Tao
CCC22	**Further Collapses in TFNP** with Mika Göös, Alexandros Hollender, Siddhartha Jain, William Pires, Robert Robere and Ran Tao
CCC21	**A Majority Lemma for Randomised Query Complexity** with Mika Göös
SOSA21	**Communication Efficient Coresets for Maximum Matching** with Michael Kapralov and Jakab Tardos

Honors & Awards

2022	Teaching Assistant Award
2020	EPFL EDIC PhD Fellowship
2019	Hackathon Grand Winner (out of 53 projects), LauzHack
2018	EPFL IC research scholarship
2015	Grant to study abroad

Languages & Misc.

Languages	**French:**	native
	English:	fluent (written and spoken)
	German:	some
Programming	C, Java, Python, LaTeX, scala (some)	
Technology	CUDA, MPI, Android, Swing, Apache Hadoop, Gurobi, Pandas, SQL, git, Amazon Web Service	
Service	CCC22, STOC22, ICALP21, Theory of Computing Journal	
Coursework	Advanced algorithms, Computational complexity, Sublinear algorithms for big data analysis, Machine learning, Operating systems, Graph theory, Cryptography & security, Parallel and high-performance computing	
Teaching Assistant	**Algorithms:**	2016, 2019
	Advanced ICC II:	2017
	Advanced Algorithms:	2018, 2020
	Theory of Computation:	2021, 2022, 2023
	Computational Complexity:	2021, 2022, 2023