

Dániel Szilágyi

Computer Science PhD student

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Alternate spelling: Daniel Silađi

Education

- 2019–present **PhD**, *Theoretical Computer Science*, IRIF, Université de Paris.
Thesis topic: “Quantum Algorithms for Optimization and Machine Learning”, supervised by Iordanis Kerenidis
- 2017–2019 **MSc**, *Theoretical Computer Science*, École Normale Supérieure de Lyon.
Thesis topic: “A Quantum Interior-Point Method for Second-Order Cone Programming”, supervised by Iordanis Kerenidis
- 2014–2017 **BSc**, *Mathematics*, University of Primorska, Slovenia.
Thesis topic: “Computational Methods for Polypeptide Origami Design”, supervised by Andrej Brodnik
- 2010–2014 **High School**, *Mathematics/Physics/Computer Science*, Gimnazija Jovan Jovanović Zmaj, Novi Sad, Serbia.
Final year project: “Some Applications of Group Theory”

Experience

- 2019 **Research internship**, IRIF, Université de Paris.
Internship topic: “A Quantum Interior-Point Method for Second-Order Cone Programming”, supervised by Iordanis Kerenidis
- 2018 **Research internship**, LIP, École Normale Supérieure de Lyon.
Internship topic: “Algorithmic Aspects of Quantum Shannon Theory”, supervised by Omar Fawzi
- 2016 **Data science internship**, Microsoft Development Center, Serbia.
Worked on modeling and forecasting SQL Server performance in the Azure Cloud
- 2015–present **Teaching assistant**, Petnica Science Center, Serbia.
Mentoring talented high school students doing year-long research projects
- 2015 **Teaching assistant**, Summer School of Science (S3), Croatia.
Mentored a team of 3 high school students for a Bluetooth indoor positioning science/engineering project
- 2015 **Student job**, University of Primorska, Slovenia.
Worked as the embedded hardware/software specialist on the government-funded project titled “Absorbtion of foreign substances in the sea”

Publications

Andrej Brodnik, Vladan Jovičić, Marko Palangetić, and Daniel Silađi. Construction of orthogonal CC-sets. *Informatica*, 43(1), 2019.

Omar Fawzi, Johanna Seif, and Dániel Szilágyi. Approximation algorithms for classical-quantum channel coding. In *2019 IEEE International Symposium on Information Theory (ISIT)*, pages 2569–2573. IEEE, 2019.

Iordanis Kerenidis, Anupam Prakash, and Dániel Szilágyi. Quantum algorithms for portfolio optimization. In *Proceedings of the 1st ACM Conference on Advances in Financial Technologies*, pages 147–155. ACM, 2019.

Selected talks

- 2019 **Workshop**, *QUDATA meeting*, Bordeaux, France.
Talk title: “Quantum machine learning”
- 2019 **Workshop**, *3rd IRIF-IQC join workshop*, Waterloo, Canada.
Talk title: “Quantum algorithms for SOCP and SVM”
- 2019 **Workshop**, *2nd QuantAlgo workshop*, Amsterdam, Netherlands.
Talk title: “Quantum algorithms for SOCP and SVM”

Honors and awards

- 2017–2019 **Scholarship**, *Ampère Excellence Scholarship*.
Awarded to the best international students at ENS Lyon
- 2016 **Competition**, *NASA SpaceApps challenge*, Slovenia.
Won 2nd place as a team at the national round of a 48h data science hackathon
- 2015–2017 **Competition**, *University Programming Marathon*, Slovenia.
Three-times university champion at the national ACM ICPC qualifiers
- 2014–2017 **Scholarship**, *University of Primorska Excellence Scholarship*.
Awarded to the best students at the University
- 2013–2014 **Scholarship**, *“Energy of Knowledge” Scholarship*, Serbia.
Awarded to the most successful competition participants
- 2011–2014 **Award**, *Dositeja Award*, Serbia.
Awarded to the most successful competition participants
- 2010–2014 **Competition**, *Serbian national high school competitions*.
Successfully competed at the national level in mathematics, physics and computer science

Languages

- Native Serbian, Hungarian
- Fluent English, French, Slovene
- Basic German, Russian

Skills

Proficient	C++, Python, Julia, \LaTeX , optimization methods, quantum computing, classical data structures and algorithms, machine learning
Experienced	Teaching, MATLAB, Mathematica, <code>UNIX</code> administration, Git
Skilled	C#, OCaml, probability, graph theory