Singh Alexandros – Curriculum Vitae

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Studies

2019-   **PhD in Informatics** - Université Sorbonne Paris Nord, Ecole Doctorale Galilée.

2017-2018 **Master of Science in Algorithms, Logic, and Discrete Mathematics** - National and Kapodistrian University of Athens, National Technical University of Athens.

2013-2017 **Bachelor of Science in Informatics** - Ionian University (ranked 1st in class).

Publications

Journal Articles

1. Alexandros Leivaditis, Alexandros Singh, Giannos Stamoulis, Dimitrios M Thilikos, Konstantinos Tsatsanis, and Vasiliki Velona. Minor-obstructions for apex sub-unicyclic graphs. *Discrete Applied Mathematics*, 2020

2. Konstantinos Giannakis, Christos Papalitsas, Kalliopi Kastampolidou, Alexandros Singh, and Theodore Andronikos. Dominant strategies of quantum games on quantum periodic automata. *Computation*, 3(4):586–599, 2015

Conference Proceedings

1. Olivier Bodini, Antoine Genitrini, Mehdi Naima, and Alexandros Singh. Families of monotonic trees: Combinatorial enumeration and asymptotics. In *Computer Science-Theory and Applications: 15th International Computer Science Symposium in Russia, CSR 2020, Yekaterinburg, Russia, June 29-July 3, 2020, Proceedings*, volume 12159, page 155. Springer, 2020

2. Alexandros Leivaditis, Alexandros Singh, Giannos Stamoulis, Dimitrios M Thilikos, Konstantinos Tsatsanis, and Vasiliki Velona. Minor-obstructions for apex sub-unicyclic graphs. In *EUROCOMB 2019, Proceedings*, volume 88, pages 903–910. Acta Mathematica Universitatis Comenianae, 2019

3. Alexander Singh and Dimitrios Tsoumakos. Towards an algebraic cost model for graph operators. In *International Workshop on Algorithmic Aspects of Cloud Computing*, pages 89–105. Springer, 2017

Preprints

1. Alexandros Leivaditis, Alexandros Singh, Giannos Stamoulis, Dimitrios M Thilikos, and Konstantinos Tsatsanis. Minor-obstructions for apex-pseudoforests. *arXiv preprint arXiv:1811.06761*, 2018

Theses

1. Alexandros Singh. Structure and enumeration of cactus minor-obstructions for k-apex sub-unicyclic graphs. Master's thesis, Department of Mathematics and Department of Informatics, National and Kapodistrian University of Athens, School of Electrical and Computer Engineering and Applied Mathematical and Physical Sciences, National Technical University of Athens

2. Alexandros Singh. Design and implementation of qumin, a quantum programming language. Master's thesis, Department of Informatics, Ionian University

Professional and Academic Experience

- *15th Workshop in Computational Logic and Applications (CLA), 2020* - Member of the organising committee.
- *Junior Seminar of LIPN, 2019-2020* - Co-responsible for organising the graduate student seminar.
- *Internship, Université Sorbonne Paris Nord, 2019* - Internship project on the asymptotics of increasing trees.
- *Internship, IRIF, 2018-2019* - Internship project on quantum machine learning.
- *Computer Programming Lab, Ionian Univ., 2016* - Taught programming (in C++), oversaw students and graded exercises.
- *Computing Systems Laboratory of the Department of Electrical and Computer Engineering, National Technical University of Athens, Summer of 2016* - Visited and made use of the lab's equipment (clusters) for simulations related to quantum walks on (directed) graphs.
- *Intro To Quantum Programming Workshop, Ionian Univ., May 2016* - Hosted the first student's workshop on quantum computation and programming in the Ionian University.
- *Theory of Computation Lab, Ionian Univ., 2016* - Helped students pick their report subjects, assisted in supervising students.
- *Quantum Computation Lab, Ionian Univ., 2016* - Helped students pick their report subjects, assisted in supervising students.
- *Internship, Ionian Univ., 2015-2016* - Interned as part of the internship program of the Ionian University, fulfilling programming and software development duties.

Programming and Informatics-Related Skills

- Python, C, C++, Java, Lisp/Scheme.
- Agda
- SQL
- Various parser generators and frameworks.
- *git* - Source version control.
- *LaTeX* - Typesetting.
- *Maple, SageMath, Mathematica, Matlab* - Symbolic and numerical computation.

Academic Interests

Discrete Mathematics, especially analytic and enumerative combinatorics as well as structural graph theory.
Type theory, logic, and languages, especially linear logic, linear type theory, and their semantics.
Physics, especially statistical mechanics and its interactions with analytic combinatorics.

Spoken Languages

- **Greek - Native speaker**

- **English - Cambridge Certificate of Proficiency in English (CPE)**

- **French - Beginner**