Dimitrios Myrisiotis

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Research interests

My main research interests lie around computational complexity theory and, more specifically, around the connections between circuit lower bounds and circuit analysis algorithms, like satisfiability or learning algorithms. In my M.Sc., I studied oracle separations in quantum computational complexity theory, and during my joint B.Sc.-M.Sc. studies I conducted research on four-legged robots.

Education

2017–[2021] **Ph.D. in Computing.**
Imperial College London,
Department of Computing.
Research area: Computational complexity theory.
Advisor: Mahdi Cheraghchi.

2013–2016 **M.Sc. in Logic and the Theory of Algorithms and Computation (MPLA).**
National and Kapodistrian University of Athens (UoA),
Department of Mathematics.
GPA: 9.85 out of 10.00.
Thesis: *Quantum complexity, relativized worlds, and oracle separations.*
Advisor: Efstathios (Stathis) Zachos.
Committee: Dimitrios Fotakis, Iordanis Kerenidis, Aristeidis Pagourtzis, and Efstathios (Stathis) Zachos.

2007–2013 **B.Sc.-M.Sc. joint degree in Mechanical Engineering.**
National Technical University of Athens (NTUA),
School of Mechanical Engineering.
Thesis: *Parametric study of the gaits of a quadruped robot using Hildebrand diagrams.*
Advisor: Evangelos Papadopoulos.

Publications

Preprints

2. Eric Allender, Mahdi Cheraghchi, Dimitrios Myrisiotis, Harsha Tirumala, and Ilya Volkovich. One-way functions and Partial MCSP. In preparation, 2020.

1. Mahdi Cheraghchi, Shuichi Hirahara, Dimitrios Myrisiotis, and Yuichi Yoshida. One-tape Turing machine and branching program lower bounds for MCSP. *Electron. Colloquium Comput. Complex.*, 27:103, 2020.

Journals

1. Mahdi Cheraghchi, Valentine Kabanets, Zhenjian Lu, and Dimitrios Myrisiotis. Circuit lower bounds for MCSP from local pseudorandom generators. *ACM Trans. Comput. Theory*, 12(3):21:1–21:27, 2020.

Conference papers

4. Valentine Kabanets, Sajin Koroth, Zhenjian Lu, Dimitrios Myrisiotis, and Igor Oliveira. Algorithms and lower bounds for De Morgan formulas of low-communication leaf gates. In Shubhangi Saraf, editor, *35th Computational Complexity Conference, CCC 2020, July 28-31, 2020, Saarbrücken, Germany (Virtual Conference)*, volume 169 of *LIPIcs*, pages 15:1–15:41. Schloss Dagstuhl - Leibniz-Zentrum für Informatik, 2020.

3. Mahdi Cheraghchi, Valentine Kabanets, Zhenjian Lu, and Dimitrios Myrisiotis. Circuit lower bounds for MCSP from local pseudorandom generators. In Christel Baier, Ioannis Chatzigiannakis, Paola Flocchini, and Stefano Leonardi, editors, *46th International Colloquium on Automata, Languages, and Programming, ICALP 2019, July 9-12, 2019, Patras, Greece*, volume 132 of *LIPIcs*, pages 39:1–39:14. Schloss Dagstuhl - Leibniz-Zentrum für Informatik, 2019.

2. Dimitrios Myrisiotis, Ioannis Poulakakis, and Evangelos Papadopoulos. On the effects of design parameters on quadruped robot gaits. In *2015 IEEE International Conference on Robotics and Biomimetics, ROBIO 2015, Zhuhai, China, December 6-9, 2015*, pages 1072–1077. IEEE, 2015.

1. Ioannis Kontolatis, Dimitrios Myrisiotis, Iosif Paraskevas, Evangelos Papadopoulos, Guido de Croon, and Dario Izzo. Quadruped optimum gaits analysis for planetary exploration. In *13th Symposium on Advanced Space Technologies in Robotics and Automation, ASTRA 2013, Noordwijk, The Netherlands, May 2013*.

Research internships

2020 Department of Computer Science, School of Arts and Sciences, Rutgers University, Piscataway, NJ, USA. Hosted by Prof. Eric Allender. Topic: Computational complexity theory; circuit lower bounds.

2019 National Institute of Informatics (NII), Tokyo, Japan. Hosted by Prof. Yuichi Yoshida. Topic: Computational complexity theory; property testing.

2018 School of Computing Science, Simon Fraser University (SFU), Burnaby, BC, Canada. Hosted by Prof. Valentine Kabanets. Topic: Computational complexity theory; circuit lower bounds.

Voluntary service

2013–2014 Tutored university or highschool students in courses related to mathematics.

Awards or distinctions

2018 *Student Academic Choice Awards (SACA) Nominee*, by the Department of Computing, Imperial College London.

2016 *Highest GPA among the MPLA graduates of December 2016*.

Professional service

- Graduate teaching assistant at the Department of Computing, Imperial College London:
    - *Discrete Mathematics* (CO142), Autumn 2019 and Autumn 2020. Instructor: Steffen van Bakel.
    - *Complexity* (CO438), Autumn 2019 and Autumn 2020. Instructor: Iain Phillips.
    - *Algorithms II* (CO202), Autumn 2018. Instructor: Mahdi Cheraghchi.
    - *Graphs and Algorithms* (CO150), Spring 2018. Instructor: Iain Phillips.

- *Quantum Computing* (CO484), Autumn 2017. Instructors: Mahdi Cheraghchi and Herbert Wiklicky.

- Reviewer for
  - ISIT 2018, BioRob 2018, CSR 2019, ISAAC 2019, ICALP 2020, and Theory of Computing.

Programming

Python, FORTRAN, C, MATLAB, and Maple.

Army service

2016–2017 In Greece, there is a *compulsory* nine-month military service for all male citizens.

References

- Eric Allender,
  Distinguished Professor;
  Rutgers, the State University of NJ,
  Department of Computer Science;
  `allender@cs.rutgers.edu`.

- Mahdi Cheraghchi,
  Assistant Professor;
  University of Michigan, Ann Arbor,
  Department of Computer Science and Engineering;
  `mahdich@umich.edu`.

- Valentine Kabanets,
  Professor;
  Simon Fraser University,
  School of Computing Science;
  `kabanets@cs.sfu.ca`.

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