

Edin Husić

Personal [website](#)

e-mail: edin.husic@idsia.ch

Vukovarska 47, 75 000 Tuzla
Bosnia and Herzegovina

Via la Santa 1, CH-6962 Lugano-Viganello
Switzerland

EMPLOYMENT

- > **Postdoctoral researcher** *February 2022 -*
The Swiss AI Lab IDSIA (Istituto Dalle Molle di Studi sull'Intelligenza Artificiale),
USI-SUPSI, Lugano, Switzerland.

EDUCATION

- > **PhD in Mathematics**
Thesis topic: “*Nash Welfare, Valuated Matroids, and Gross Substitutes*”.
Supervisor: prof. László A. Végh.
November 2021, London School of Economics and Political Science, London, UK.
- > **Master 2 of Fundamental Computer Science** (average 16.03/20)
Supervisors: prof. Stéphan Thomassé and dr. Nicolas Trotignon.
June 2017, École Normale Supérieure de Lyon, Lyon, France.
- > **Master of Mathematical Sciences** (average 9.56/10)
Thesis topic: “*The maximum independent set problem and equistable graphs*”.
Supervisors: dr. Ademir Hujdurović and prof. Martin Milanič.
August 2017, University of Primorska, Koper, Slovenia. Available at [link](#).
- > **Bachelor of Mathematics** (average 9.59/10)
Thesis topic: “*Submodular functions*”.
Supervisor: prof. Martin Milanič.
September 2015, University of Primorska, Koper, Slovenia. Available at [link](#).

PREPRINTS

- P1 *On the Correlation Gap of Matroids*
Edin Husić, Zhuan Khye Koh, Georg Loho, László Végh.

REFEREED CONFERENCE PAPERS

- C8 *Tractable fragments of the maximum Nash welfare problem.*
Jugal Garg, Edin Husić, Aniket Murhekar, and László Végh. To appear in Proceeding of the 18th Conference on Web and Internet Economics (**WINE 2022**). Troy, NY, USA, 2022.
- C7 *FPT algorithms for finding near-cliques in c -closed graphs.*
Balaram Behera, Edin Husić, Shweta Jain, Tim Roughgarden, and Comandur Seshadhri. To appear in Proceedings of the 13th Innovations in Theoretical Computer Science Conference (**ITCS 2022**). Berkeley, California, USA. LIPIcs, 2022.
- C6 *On complete classes of valuated matroids.*
Edin Husić, Georg Loho, Ben Smith, and László Végh. To appear in Proceedings of the 2022 ACM-SIAM Symposium on Discrete Algorithms (**SODA 2022**). Alexandria, Virginia, USA. SIAM, 2022.
- C5 *Approximating Nash Social Welfare under Rado Valuations.*
Jugal Garg, Edin Husić, and László Végh. Proceedings of the 53rd Annual ACM SIGACT

Symposium on Theory of Computing (**STOC 2021**). Association for Computing Machinery, New York, NY, USA, 14121425.

- C4 *Auction algorithms for market equilibrium with weak gross substitute demands and their applications*. Jugal Garg, Edin Husić, and László Végh. 38th International Symposium on Theoretical Aspects of Computer Science (**STACS 2021**). Schloss Dagstuhl – Leibniz-Zentrum für Informatik, 2021.
- C3 *The independent set problem is FPT for even-hole-free graphs*. Edin Husić, Stéphan Thomassé, and Nicolas Trotignon. 14th International Symposium on Parameterized and Exact Computation (**IPEC 2019**). Schloss Dagstuhl-Leibniz-Zentrum fuer Informatik, 2019.
- C2 *A polynomial-time algorithm for the independent set problem in $\{P_{10}, C_4, C_6\}$ -free graphs*. Edin Husić and Martin Milanič. International Workshop on Graph-Theoretic Concepts in Computer Science (**WG 2019**). Springer, Cham, 2019. **Best Student Paper Award**.
- C1 *The minimum conflict-free row split problem revisited*. A. Hujdurović, E. Husić, M. Milanič, R. Rizzi, A. I. Tomescu. International Workshop on Graph-Theoretic Concepts in Computer Science (**WG 2017**). Springer, Cham, 2017.

JOURNAL PAPERS

- J4 *Safety in multi-assembly via paths appearing in all path covers of a DAG*. Manuel Cáceres, Brendan Mumey, Edin Husić, Romeo Rizzi, Massimo Cairo, Kristoffer Sahlin, and Alexandru I. Tomescu. Accepted to IEEE/ACM Transactions on Computational Biology and Bioinformatics (**TCBB**).
- J3 *Approximating Nash Social Welfare under Rado Valuations*. Jugal Garg, Edin Husić, and László Végh. **SIGecom Exchanges** 19(1): 45-51 (2021). Summary of **C5**.
- J2 *MIPUP: minimum perfect unmixed phylogenies for multi-sampled tumors via branchings and ILP*. E. Husić, X. Li, A. Hujdurović, M. Mehine, R. Rizzi, V. Mäkinen, M. Milanič and A.I. Tomescu. **Bioinformatics** 35.5 (2019): 769-777.
- J1 *Perfect phylogenies via branchings in acyclic digraphs and a generalization of Dilworth's theorem*. A. Hujdurović, E. Husić, M. Milanič, R. Rizzi, A. I. Tomescu. ACM Transactions on Algorithms (**TALG**) 14.2 (2018): 1-26. Extended version of **C1**.

RESEARCH VISITS

- Visiting researcher, Department of Computer Science, University of Helsinki, (Duration: 01.12. – 20.12.2019). Collaborator: dr. Alexandru I. Tomescu.

TEACHING

Class teacher/teaching assistant:

- **Optimisation Theory** 2019/2020. LSE.
- **Real Analysis** 2019/2020. LSE.
- **Algorithms and Computation** 2019/2020. LSE.
- **Fundamentals of Operations Research** 2018/2019 and 2019/2020. LSE
- **Modelling in Operations Research** 2018/2019 and 2019/2020. LSE
- **Operational Research Methods** 2017/2018 and 2018/2019. LSE.
- “*Graphs are everywhere*” at summer school “Mathematics is cool”, Koper, Slovenia, August 2017.

- Mathematics instructor at “ACADEMUS”, Slovenia, October 2015 - July 2016.

SKILLS

Coding: Java, Python, Cplex, basics of OCaml. A few older projects at [github](#).

Languages: Bosnian (native), English (fluently), Slovenian (fluently), German (basics).

REFEREE

Journals: Mathematical Programming (Series B), SIAM Journal on Discrete Mathematics, Theoretical Computer Science, Theory of Computing Systems.

Conferences: FOCS, SODA, ICALP, ESA, MFCS, FSTTCS, ISAAC, WADS, IWOCA.

EXTRA-CURRICULAR ACTIVITIES

- My entry for “3 Minute Thesis BiH”: [youtube link](#).
- With Marko Precać and Vladan Jovičić won start-up challenge “Podjetna Primorska”, Koper, Slovenia, 26.05.2016.
- 2nd place at NASA Space App Challenge: [youtube link](#), Koper, Slovenia, 22.04-24.04.2016.

MATH CONTESTS

- *Honourable mention*, Open Mathematical Olympiad of the Belarusian-Russian Universities (2014).
- *Honourable mention*, IMC-International Mathematics Competition (2013).
- *Bronze medal*, Open International Internet-Olympiad (2013).

SUMMER SCHOOLS

- > *European Summer School on Learning in Games, Markets, and Online Decision Making.* (Virtual) Sapienza University of Rome, Italy, 06.09 - 10.09.2021.
- > *21st Max Planck Advanced Course on the Foundations of Computer Science:* Market Design and Computational Fair Division (Virtual) Saarbrücken, Germany, August 24-28, 2020.
- > *Hausdorff School on Combinatorial Optimization,* Bonn, Germany, 20.08-24.08.2018.
- > *São Paulo School of Advanced Science on Algorithms, Combinatorics and Optimization,* São Paulo, Brazil, 18.07 - 29.07.2016.
- > *PhD Summer School in Discrete Mathematics 2015* Rogla, Slovenia, 27.06 - 3.07.2015.
- > *PhD Summer School in Discrete Mathematics and Symmetries of Graphs and Networks IV,* Rogla, Slovenia, 29.06 - 5.07.2014.