

Adam Polak

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Employment

Bocconi University Assistant professor in Department of Computing Sciences	SINCE 2023
Max-Planck-Institut für Informatik Postdoctoral researcher, hosted by Danupon Nanongkai	2022–2023
École Polytechnique Fédérale de Lausanne Postdoctoral researcher, hosted by Friedrich Eisenbrand	2020–2022
Jagiellonian University Research and teaching assistant	2018–2020

Education

Jagiellonian University PhD student, advised by Paweł Idziak, thesis defended on 11.10.2019	2014–2019
Massachusetts Institute of Technology Visiting PhD student, advised by Virginia Vassilevska Williams	APR–SEP 2019
Jagiellonian University MSc student, Computer Science	2012–2014
Jagiellonian University BSc student, Computer Science	2009–2012

Internships

École Polytechnique Fédérale de Lausanne Research internship, hosted by Ola Svensson	JUN–JUL 2016
École Polytechnique Fédérale de Lausanne Research internship, hosted by Roger Hersch	MAY–JUL 2014
Google New York Software engineering internship, hosted by Joel M. Wein	JUL–OCT 2013
Google Kraków Software engineering internship, hosted by Przemysław Broniek	MAR–JUL 2012

Grants awarded

PRELUDIUM, National Science Center of Poland <i>Around optimality of dynamic programming algorithms</i>	2018–2021
ETIUDA, National Science Center of Poland <i>Complexity lower bounds for polynomial time solvable problems</i>	2018–2019
Diamond Grant, Ministry of Science and Higher Education of Poland	2013–2018

Prizes and awards

Witold Lipski Prize for young Polish computer scientists	2023
2nd at Parameterized Algorithms and Computational Experiments Challenge	2018
Scholarship of Polish Ministry of Science and Higher Education	2011–2014
Bronze medal at ACM ICPC World Finals	2011

Technical skills

fluent: C/C++, CUDA, Python, TeX

basics: Haskell, Java, JavaScript, Matlab, R, SQL

Teaching and community service

Bocconi University 2023–2024

- **Analysis of Algorithms and Data Structures** (1 semester)
- **Algorithms** (1 semester)

Max-Planck-Institut für Informatik 2023

- **Foundations of Machine Learning Seminar** (1 semester)

École Polytechnique Fédérale de Lausanne 2021–2022

- **Fine-grained and parameterized complexity** (1 semester)
- **Advanced linear algebra** (1 semester)

Jagiellonian University 2014–2020

- **Algorithms and Data Structures** (6 semesters)
- **Geometric Algorithms** (1 semester)
- **Numerical Algorithms** (1 semester)
- **Parallel Programming** (1 semester)

5th High School in Kraków 2014–2017

- **Algorithmics for high school students** (6 semesters)

Workshop on Algorithms with Predictions at Bernoulli Center, EPFL MAY 2022

Biannual week-long algorithmics workshops for high-school students 2009–2020

Program Committee member of ESA 2023 and ICALP 2024.

(Sub-)reviewing for major conferences and journals in theoretical computer science and machine learning, e.g., Algorithmica, APPROX, Comput. Geom., Discrete Math., ESA, FOCS, ICALP, ICLR, Inf. Process. Lett., IPCO, ISAAC, ITCS, J. Comput. Syst. Sci., LATIN, MFCS, NeurIPS, Order, SoCG, SODA, SOSA, SWAT, Theor. Comput. Sci.

Preparing problems for various programming contests, including ICPC CERC, Google Code Jam, Polish Collegiate Programming Contest (AMPPZ), and Polish Olympiad in Informatics.

Publications

Publication lists also available at DBLP: <https://dblp.org/pid/47/11430.html> and
Google Scholar: <https://scholar.google.com/citations?user=2oYJahUAAAAJ>

- IPL'24 Adam Polak, Maksym Zub.
Learning-Augmented Maximum Flow.
<https://doi.org/10.1016/j.ip1.2024.106487>
- ITCS'24 Nick Fischer, Piotr Kaliciak, Adam Polak.
Deterministic 3SUM-Hardness.
<https://doi.org/10.4230/LIPIcs.ITCS.2024.49>
- SODA'24 Jan van den Brand, Sebastian Forster, Yasamin Nazari, Adam Polak.
On Dynamic Graph Algorithms with Predictions.
<https://doi.org/10.1137/1.9781611977912.126>
- SODA'24 Jana Cslovjcek, Martin Koutecký, Alexandra Lassota, Michał Pilipczuk, Adam Polak.
Parameterized algorithms for block-structured integer programs with large entries.
<https://doi.org/10.1137/1.9781611977912.29>
- ESA'23 Tomasz Kociumaka, Adam Polak.
Bellman–Ford is optimal for shortest hop-bounded paths.
<https://doi.org/10.4230/LIPIcs.ESA.2023.72>
- ICML'23 Antonios Antoniadis, Christian Coester, Marek Eliáš, Adam Polak, Bertrand Simon.
Mixing predictions for online metric algorithms.
<https://proceedings.mlr.press/v202/antoniadis23b.html>
- ICML'23 Antonios Antoniadis, Joan Boyar, Marek Eliáš, Lene M. Favrholdt, Ruben Hoeksma, Kim S. Larsen, Adam Polak, Bertrand Simon.
Paging with Succinct Predictions.
<https://proceedings.mlr.press/v202/antoniadis23a.html>
- SODA'23 Kim-Manuel Klein, Adam Polak, Lars Rohwedder.
On Minimizing Tardy Processing Time, Max-Min Skewed Convolution, and Triangular Structured ILPs.
<https://doi.org/10.1137/1.9781611977554.ch112>
- ICALP'22 Aaron Berger, William Kuszmaul, Adam Polak, Jonathan Tidor, Nicole Wein.
Memoryless Worker-Task Assignment with Polylogarithmic Switching Cost.
<https://doi.org/10.4230/LIPIcs.ICALP.2022.19>

- ICALP'22 Alexandra Lassota, Aleksander Łukasiewicz, Adam Polak.
Tight Vector Bin Packing with Few Small Items via Fast Exact Matching in Multigraphs.
<https://doi.org/10.4230/LIPIcs.ICALP.2022.87>
- NeurIPS'21 Antonios Antoniadis, Christian Coester, Marek Eliáš, Adam Polak, Bertrand Simon.
Learning-Augmented Dynamic Power Management with Multiple States via New Ski Rental Bounds.
<https://papers.nips.cc/paper/2021/hash/8b8388180314a337c9aa3c5aa8e2f37a-Abstract.html>
- NeurIPS'21 Buddhima Gamlath, Xinrui Jia, Adam Polak, Ola Svensson.
Nearly-Tight and Oblivious Algorithms for Explainable Clustering.
<https://papers.nips.cc/paper/2021/hash/f24ad6f72d6cc4cb51464f2b29ab69d3-Abstract.html>
- ICML'21 Jakub Chłędowski, Adam Polak, Bartosz Szabucki, Konrad Żoła.
Robust Learning-Augmented Caching: An Experimental Study.
<http://proceedings.mlr.press/v139/chledowski21a.html>
- ICALP'21 Yuzhou Gu, Adam Polak, Virginia Vassilevska Williams, Yinzhan Xu.
Faster Monotone Min-Plus Product, Range Mode, and Single Source Replacement Paths.
<https://doi.org/10.4230/LIPIcs.ICALP.2021.75>
- ICALP'21 Adam Polak, Lars Rohwedder, Karol Węgrzycki.
Knapsack and Subset Sum with Small Items.
<https://doi.org/10.4230/LIPIcs.ICALP.2021.106>
- IPDPS'21 Adam Polak, Adrian Siwec, Michał Stobierski.
Euler Meets GPU: Practical Graph Algorithms with Theoretical Guarantees.
<https://doi.org/10.1109/IPDPS49936.2021.00032>
- ICML'20 Antonios Antoniadis, Christian Coester, Marek Eliáš, Adam Polak, Bertrand Simon.
Online metric algorithms with untrusted predictions.
<http://proceedings.mlr.press/v119/antoniadis20a>
- APPROX'20 Joanna Chybowska-Sokół, Grzegorz Gutowski, Konstanty Junosza-Szaniawski, Patryk Mikos, Adam Polak.
Online Coloring of Short Intervals.
<https://doi.org/10.4230/LIPIcs.APPROX/RANDOM.2020.52>
- ITCS'20 Andrea Lincoln, Adam Polak, Virginia Vassilevska Williams.
Monochromatic triangles, intermediate matrix products, and convolutions.
<https://doi.org/10.4230/LIPIcs.ITCS.2020.53>

- SODA'20 Lech Duraj, Krzysztof Kleiner, Adam Polak, Virginia Vassilevska Williams.
Equivalences between triangle and range query problems.
<https://doi.org/10.1137/1.9781611975994.3>
- IPL'18 Adam Polak.
Why is it hard to beat $O(n^2)$ for Longest Common Weakly Increasing Subsequence?
<https://doi.org/10.1016/j.ipl.2017.11.007>
- Order'18 Grzegorz Guśpiel, Piotr Micek, Adam Polak.
On an extremal problem for poset dimension.
<https://doi.org/10.1007/s11083-017-9444-1>
- IPEC'17 Lech Duraj, Marvin Künnemann, Adam Polak.
Tight Conditional Lower Bounds for Longest Common Increasing Subsequence.
<https://doi.org/10.4230/LIPIcs.IPEC.2017.15>
• Invited to a special issue of Algorithmica: <https://doi.org/10.1007/s00453-018-0485-7>
- IPDPSW'16 Adam Polak.
Counting Triangles in Large Graphs on GPU.
<https://doi.org/10.1109/IPDPSW.2016.108>
- VISAPP'12 Maciej Chociej, Adam Polak.
Real Time Object Tracking on GPGPU.
<https://doi.org/10.5220/0003862303030310>