ANDERS AAMAND

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CURRENT EMPLOYMENT

University of Copenhagen, BARC   *March 2024 - Present*
Postdoctoral Researcher

PAST EMPLOYMENT

MIT, Electrical Engineering and Computer Science   *August 2021 - January 2024*
Postdoctoral Researcher in Piotr Indyk's group

University of Copenhagen, BARC   *September 2020 - July 2021*
Postdoctoral Researcher

EDUCATION

University of Copenhagen, BARC   *September 2017 - August 2020*
PhD student within algorithms.
Supervisor: Mikkel Thorup and Mikkel Abrahamsen
Phd degree awarded in October 2020

University of Copenhagen   *September 2016 - August 2017*
Master of Mathematics
GPA: 12.

University of Cambridge, Clare Hall   *October 2015 - June 2016*
Master of Advanced Study (Part III of the Mathematical Tripos)
Supervisor: Imre Leader.
Final exam result: Pass with Distinction

University of Copenhagen   *September 2012 - June 2015*
Bachelor of Mathematics
GPA: 11.75

GRANTS HELD

- International Postdoc Grant 0164-00022B from the Independent Research Fund Denmark   *2020*
- Elite Research Travel Grant, Ministry of Higher Education and Science   *2019*

PUBLICATIONS

1. Anders Aamand, Justin Y. Chen, Huy Lê Nguyen, Sandeep Silwal, and Ali Vakilian. Improved frequency estimation algorithms with and without predictions. In *NeurIPS*, 2023 (**Spotlight**)

2. Anders Aamand, Justin Y. Chen, Allen Liu, Sandeep Silwal, Pattara Sukprasert, Ali Vakilian, and Fred Zhang. Constant approximation for individual preference stable clustering. In *NeurIPS*, 2023 (**Spotlight**)

3. Anders Aamand, Alexandr Andoni, Justin Y. Chen, Piotr Indyk, Shyam Narayanan, and Sandeep Silwal. Data structures for density estimation. In *Proceedings of the 40th International Conference on Machine Learning*, volume 202 of *Proceedings of Machine Learning Research*, pages 1–18, 2023

4. Anders Aamand, Mikkel Abrahamsen, Peter M. R. Rasmussen, and Thomas D. Ahle. Tiling with squares and packing dominos in polynomial time. *ACM Trans. Algorithms*, 19(3):30:1–30:28, 2023

5. Anders Aamand, Adam Karczmarz, Jakub Lacki, Nikos Parotsidis, Peter M. R. Rasmussen, and Mikkel Thorup. Optimal decremental connectivity in non-sparse graphs. In *50th International Colloquium on Automata, Languages, and Programming, ICALP 2023*, volume 261 of *LIPIcs*, pages 6:1–6:17, 2023

6. Anders Aamand, Mikkel Abrahamsen, Lorenzo Beretta, and Linda Kleist. Online sorting and translational packing of convex polygons. In *Proceedings of the 2023 ACM-SIAM Symposium on Discrete Algorithms, SODA, 2023*, pages 1806–1833. SIAM, 2023

7. Anders Aamand, Justin Y. Chen, Huy Lê Nguyen, and Sandeep Silwal. Improved Space Bounds for Learning with Experts. *arXiv e-prints*, page arXiv:2303.01453, poster at ACDA 2023

8. Anders Aamand, Debarati Das, Evangelos Kipouridis, Jakob Bæk Tejs Knudsen, Peter M. R. Rasmussen, and Mikkel Thorup. No repetition: Fast and reliable sampling with highly concentrated hashing. *Proc. VLDB Endow.*, 15(13):3989–4001, 2022

9. Anders Aamand, Noga Alon, Jakob Bæk Tejs Houen, and Mikkel Thorup. On sums of monotone random integer variables. *Electronic Communications in Probability*, 27(none):1 – 8, 2022

10. Anders Aamand, Justin Y. Chen, and Piotr Indyk. (optimal) online bipartite matching with degree information. In *NeurIPS*, 2022

11. Anders Aamand, Justin Y. Chen, Piotr Indyk, Shyam Narayanan, Ronitt Rubinfeld, Nicholas Schiefer, Sandeep Silwal, and Tal Wagner. Exponentially improving the complexity of simulating the weisfeiler-lehman test with graph neural networks. In *NeurIPS*, 2022

12. Anders Aamand, Jakob Bæk Tejs Knudsen, and Mikkel Thorup. Load balancing with dynamic set of balls and bins. In *53rd Annual ACM SIGACT Symposium on Theory of Computing, STOC 2021*, pages 1262–1275. ACM, 2021

13. Anders Aamand, Mikkel Abrahamsen, Jakob Bæk Tejs Knudsen, and Peter Michael Reichstein Rasmussen. Classifying convex bodies by their contact and intersection graphs. In *37th International Symposium on Computational Geometry, SoCG 2021*, volume 189 of *LIPIcs*, pages 3:1–3:16, 2021

14. Anders Aamand, Jakob Bæk Tejs Knudsen, Mathias Bæk Tejs Knudsen, Peter Michael Reichstein Rasmussen, and Mikkel Thorup. Fast hashing with strong concentration bounds. In *Proccedings of the 52nd Annual ACM SIGACT Symposium on Theory of Computing, STOC 2020*, pages 1265–1278. ACM, 2020

15. Anders Aamand and Mikkel Thorup. Non-empty bins with simple tabulation hashing. In *Proceedings of the Thirtieth Annual ACM-SIAM Symposium on Discrete Algorithms, SODA 2019*, pages 2498–2512, 2019

16. Anders Aamand, Mathias B. T. Knudsen, and Mikkel Thorup. Power of d choices with simple tabulation. In *45th International Colloquium on Automata, Languages, and Programming, ICALP 2018*, pages 5:1–5:14, 2018

17. Anders Aamand, Niklas Hjuler, Jacob Holm, and Eva Rotenberg. One-way trail orientations. In *45th International Colloquium on Automata, Languages, and Programming, ICALP 2018*, pages 6:1–6:13, 2018

18. Anders Aamand, Mikkel Abrahamsen, and Mikkel Thorup. Disks in curves of bounded convex curvature. *Am. Math. Mon.*, 127(7):579–593, 2020

TEACHING EXPERIENCE

- Guest lecturer at seminar on spectral expansion (UCPH, DIKU) *2019*
- Guest lecturer at seminar on similarity search (UCPH, DIKU) *2018*
- Guest lecturer in *Topics in Algorithms and Data Structures* (UCPH, DIKU) *2018*
- Teaching assistant in *Advanced Algorithms and Data Structures* (UCPH, DIKU) *2018*
- Teaching assistant at various courses within discrete mathematics, probability and statistics, geometry, analysis, and linear algebra (UCPH, MATH) *2012-2017*
- Mathematics teacher at Danish High School *Ingrid Jespersens Gymnasieskole* *2013-2014*

CONFERENCE AND WORKSHOP PRESENTATIONS

- **SODA 2023** Talk: Online Sorting and Translational Packing of Convex Polygons
- **FSTTCS 2022 Workshop** Talk: (Optimal) Online Bipartite Matching with Degree Information
- **STOC 2021** Talk: Load Balancing with Dynamic Set of Balls and Bins
- **SODA 2019** Talk: Non-Empty Bins with Simple Tabulation Hashing
- **ICALP 2018** Talk: Power of d Choices with Simple Tabulation

POSTER PRESENTATIONS

- **NeuIPS 2023** Joint Presentation: Improved Frequency Estimation Algorithms with and Without Predictions
- **NeuIPS 2023** Joint Presentation: A Constant-Factor Approximation for Individual Preference Stable Clustering
- **ICML 2023** Joint Presentation: Data Structures for Density Estimation
- **NeuIPS 2022** Joint Presentation: Exponentially Improving the Complexity of Simulating the Weisfeiler-Lehman Test with Graph Neural Networks
- **NeuIPS 2022** Joint Presentation: (Optimal) Online Bipartite Matching with Degree Information
- **STOC 2021** Presentation: Load Balancing with Dynamic Set of Balls and Bins

ACHIEVEMENTS

- Participated in the International Mathematical Olympiad as part of the Danish national team *2011*

SCIENTIFIC STAYS ABROAD

- Visiting PhD student at Massachusetts Institute of Technology, CSAIL.
  Supervisor: Piotr Indyk. *March 2019 - May 2019*
- Visiting PhD student at Columbia University, DSI.
  Supervisor: Alexandr Andoni. *June 2019 - September 2019*
- Visiting PhD student at the University of Cambridge.
  Supervisor: Imre Leader. *December 2019*

OTHER PROFESSIONAL ACTIVITIES

- Program committee member at SWAT'24

- Reviewer for conferences and journals: NeurIPS, ICML, JACM, STOC, SODA, ICALP, SoCG, CPM.

LANGUAGE SKILLS

Danish: Native

English: Fluent

French: Intermediate