ANDERS AAMAND

https://andersaamand.com andersaamanda@gmail.com

CURRENT EMPLOYMENT

University of Copenhagen, BARC Postdoctoral Researcher	March 2024 - Present
PAST EMPLOYMENT	
MIT, Electrical Engineering and Computer Science Postdoctoral Researcher in Piotr Indyk's group	August 2021 - January 2024
University of Copenhagen, BARC Postdoctoral Researcher	September 2020 - July 2021
EDUCATION	
University of Copenhagen, BARC PhD student within algorithms. Supervisor: Mikkel Thorup and Mikkel Abrahamsen Phd degree awarded in October 2020	September 2017 - August 2020
University of Copenhagen Master of Mathematics GPA: 12.	September 2016 - August 2017
University of Cambridge, Clare Hall Master of Advanced Study (Part III of the Mathematical Tripos) Supervisor: Imre Leader. Final exam result: Pass with Distinction	October 2015 - June 2016
University of Copenhagen Bachelor of Mathematics GPA: 11.75	September 2012 - June 2015

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

- Anders Aamand, Alexandr Andoni, Justin Y. Chen, Piotr Indyk, Shyam Narayanan, Sandeep Silwal, and Haike Xu. Statistical-computational trade-offs for density estimation. In *NeurIPS*, 2024
- 2. 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**)
- 3. 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)

- 4. 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
- 5. 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
- 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
- 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
- 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
- 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 Proceedings 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
- 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
- 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

CONFERENCE AND WORKSHOP PRESENTATIONS

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

TEACHING EXPERIENCE

• Course organizer of <i>Topics in Algorithms and Complexity</i> (UCPH, DIKU)	2024
• Guest lecturer at course on differential privacy in distributed settings (UCPH, DIKU)	2024
• Guest lecturer at seminar on spectral expansion (UCPH, DIKU)	2019
• Guest lecturer at seminar on similarity search (UCPH, DIKU)	2018
• Guest lecturer in <i>Topics in Algorithms and Data Structures</i> (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
FORMAL PEDAGOGICAL TRAINING	
• Attended Introduction to University Pedagogy (UCPH, DIKU)	2020
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.

• Visiting PhD student at the University of Cambridge. Supervisor: Imre Leader.

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