Magdalen Dobson

Curriculum Vitae

GHC 9223
5000 Forbes Ave
Pittsburgh, PA 15213
✉ *mrdobson@cs.cmu.edu*

Education

2019-present **PhD Candidate in Computer Science**, *Carnegie Mellon University | Advisor: Guy Blelloch*

2015-2019 **B.S. in Mathematics**, *Massachusetts Institute of Technology, GPA 4.7/5.0*

Publications

ICALP 2023 *The Geometry of Tree-Based Sorting*
Guy Blelloch and Magdalen Dobson

ALENEX 2022 *Parallel Nearest Neighbors in Low Dimensions with Batch Updates*, Guy Blelloch and Magdalen Dobson

2021 *Poster: The Problem-Based Benchmark Suite, V2*
Guy Blelloch and Magdalen Dobson

AAAI 2020 *Multiagent Evaluation Mechanisms*, Tal Alon, Magdalen Dobson, Jamie Tucker-Folz, Ariel Procaccia, Inbal Talgam-Cohen

Manuscipts

2023 *Scaling Graph-Based ANNS Algorithms to Billion-Size Datasets: A Comparative Analysis*
Magdalen Dobson, Zheqi Shen, Guy E. Blelloch, Laxman Dhulipala, Yan Gu, Harsha Vardhan Simhadri, and Yihan Sun
arXiv:2305.04359

Awards and Honors

2021 **Best Poster Award, ACDA 2021**

2019 **National Science Foundation Graduate Research Fellow (NSF GRFP)**

Visits and Internships

Summer 2022 **PhD Student Intern | Microsoft Research, Redmond**
Supervisor: Harsha Vardhan Simhadri

Summer 2019 **Research Intern at Technion—Israel Institute of Technology**
Supervisor: Prof. Inbal Talgam-Cohen, Department of Computer Science

Teaching and Service

Fall 2023 **Teaching Assistant, 15-451 Design and Analysis of Algorithms**, *CMU*

Spring 2022 **Teaching Assistant, 15-455 Undergraduate Complexity Theory**, *CMU*

2020-2021 **Theory Lunch Organizer**, *CMU*

2020-2022 **PhD Student Mentor**, *CMU*

2020-2021 **Immigration Course Committee**, *CMU*

2019-2022 **Math Tutor**, *Neighborhood Learning Alliance of Pittsburgh*

Selected Coursework

CMU Courses Analytical Performance Modeling, Theoretical Computer Science Toolkit, Computer Networks, Artificial Intelligence, Types and Programming Languages, Parallel Algorithms

MIT Courses Algorithmic Game Theory, Advanced Algorithms, Theory of Computation, Abstract Algebra I and II, Complex Analysis, Real Analysis, Discrete Mathematics, Topology, Probability and Random Variables