ASEEM BARANWAL   in 🎓 🌐

EDUCATION

Ph.D. in Computer Science   **in progress*
University of Waterloo. Supervised by Aukosh Jagannath and Kimon Fountoulakis.

M.Math. in Computer Science (thesis option)
University of Waterloo. Supervised by Jeffrey Shallit.

B.Tech. in Computer Science
Indian Institute of Technology Jodhpur.

EXPERIENCE

· **Research Intern, Microsoft Research, Redmond**   Jun 2023 – Sep 2023
Worked with the Machine Learning and Cloud Infrastructure Security Groups on GNNs for security.

· **Research Intern, Google Research**   Oct 2022 – Dec 2022
Worked with the Graph mining group on scalable GNNs for sparse graphs.

· **Software Engineer, Microsoft Corporation**   Jun 2016 – Jul 2018
Worked with the Azure compute group on distributed systems and anomaly detection.

PUBLICATIONS & MANUSCRIPTS

· **Optimality of message-passing architectures for sparse graphs**. A. Baranwal, K. Fountoulakis, A. Jagannath. arXiv preprint arXiv:2305.10391, 2023.   ☑

· **Graph attention retrospective**. K. Fountoulakis, A. Levi, S. Yang, A. Baranwal, A. Jagannath. Journal of Machine Learning Research (JMLR), 2023.   ☑ ◯

· **Effects of graph convolutions in multi-layer networks**. A. Baranwal, K. Fountoulakis, A. Jagannath. International Conference on Learning Representations (ICLR), 2023. *(Spotlight)*   ☑ ◯

· **Graph convolution for semi-supervised classification: Improved linear separability and out-of-distribution generalization**. A. Baranwal, K. Fountoulakis, A. Jagannath. International Conference on Machine Learning (ICML), 2021. *(Spotlight)*   ☑ ◯

· **Antisquares and Critical Exponents**. A. Baranwal, J. Currie, L. Mol, P. Ochem, N. Rampersad, J. Shallit. arXiv preprint arXiv:2209.09223, 2022.   ☑

· **Ostrowski-automatic sequences: theory and applications**. A. Baranwal, L. Schaeffer, J. Shallit. Theoretical Computer Science 858, pp. 122–142, 2021.   ☑

· **Decision algorithms for Ostrowski-automatic sequences.** A. Baranwal. MMath Thesis, University of Waterloo, School of Computer Science, 2020.   ☑

· **Repetitions in infinite palindrome-rich words**. A. Baranwal, J. Shallit. In Combinatorics on Words. WORDS 2019. LNCS vol. 11682, Springer, pp. 93–105, 2019.   ☑

· **Critical exponent of balanced words via the Pell number system**. A. Baranwal, J. Shallit. In Combinatorics on Words. LNCS vol. 11682, Springer, pp. 80–92, 2019.   ☑

AWARDS AND ACHIEVEMENTS

· President's Graduate Scholarship, University of Waterloo	2023–2024
· Ontario Graduate Scholarship, Province of Ontario and the University of Waterloo	2023–2024
· Top reviewer award, Learning on Graphs conference	2022
· Best paper award, GroundedML workshop at ICLR	2022
· Graduate Excellence Award, University of Waterloo	2020–2022
· Graduate Research Travel Grant, GSPA, University of Waterloo	2019
· Microsoft Engineering Star Award – Changing Status Quo	2017
· Ranked 29 at Google APAC (now Kick Start)	2016
· Team ranked 14 at ACM ICPC Asia regionals	2015

TALKS

· Effects of Graph Convolutions in Multi-layer Networks. ICLR.	Apr 2023
· Graph Convolutions for semi-supervised learning. ICML.	Jul 2021
· Repetitions in infinite palindrome-rich words. Loughborough University, England.	Sep 2019
· Anomaly detection and monitoring of metrics in Azure services. Microsoft Corporation.	Jan 2017

TEACHING

· Instructional Apprentice, CS 341 - Algorithms	2019–2023
· Teaching Assistant, CS 135 - Designing Functional Programs	2018–2019

MISCELLANEOUS

· Serving/served as a reviewer for NeurIPS, ICLR, LoG, UAI	2021–Now
· Helped underprivileged kids with education at SOS Children's Villages of India	2016–2018
· Associate member, National Cyber Safety and Security Standards India	2017–2018
· President, Programming Club IIT Jodhpur	2013–2014
· Problem setter for ACM ICPC preliminary contests in India	2015–2016