ASEEM BARANWAL

in 🎓 🌐

EDUCATION

Ph.D. in Computer Science   Sep 2020 – Present
University of Waterloo. Supervised by Aukosh Jagannath and Kimon Fountoulakis.

M.Math. in Computer Science (thesis option)   Sep 2018 – Apr 2020
University of Waterloo. Supervised by Jeffrey Shallit.

B.Tech. in Computer Science   Jul 2012 – May 2016
Indian Institute of Technology Jodhpur.

EXPERIENCE

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

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

PUBLICATIONS & MANUSCRIPTS

· **Effects of Graph Convolutions in Multi-layer Networks**. A. Baranwal, K. Fountoulakis, A. Jagannath.
International Conference on Learning Representations (ICLR), 2023 *(Spotlight)*   ✍ ⊙

· **Graph Attention Retrospective**. K. Fountoulakis, A. Levi, S. Yang, A. Baranwal, A. Jagannath. Workshop
on Anchoring Machine Learning in Classical Algorithmic Theory, 10th International Conference on Learning
Representations (ICLR), 2022. *(Best paper award)*   ✍ ⊙

· **Graph Convolution for Semi-Supervised Classification: Improved Linear Separability and Out-of-
Distribution Generalization**. A. Baranwal, K. Fountoulakis, A. Jagannath. Proceedings of the 38th Interna-
tional Conference on Machine Learning (ICML), PMLR 139:684–693, 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 Wa-
terloo, 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 Combina-
torics on Words. LNCS vol. 11682, Springer, pp. 80–92, 2019.   ✍

AWARDS AND ACHIEVEMENTS

· Top reviewer award, Learning on Graphs conference   2022
· $15,000$ in Graduate Excellence Awards at the University of Waterloo   2020, 2022
· 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

MISCELLANEOUS

· Reviewer for the Theoretical Computer Science journal, ICLR 2023, LoG 2022.
· 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