












## 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 &amp; 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 International 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 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

- 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