Gaurush Hiranandani

Personal Information

Current Position:	Ph.D. Student, Department of Computer Science, Univeristy of Illinois Urbana-Champaign
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Research Interests

Machine Learning, Statistical Inference, Learning to Rank, Preference Elicitation

Education and Experience

2017-Present	Ph.D. in Computer Science, University of Illinois - Urbana Champaign, CGPA: **4.0/4.0**
May-Aug 2020	Research Intern, Google Research
May-Aug 2019	Research Intern, Amazon (A9) Research
May-Aug 2018	Research Intern, Microsoft Research
2015-2017	Member of Research Staff, Big Data Experience Lab, Adobe Research, Bengaluru
2010-2015	M.Sc. (Integrated) in Mathematics and Scientific Computing, Indian Institute of Technology Kanpur CGPA: **9.4/10.0**, Department Rank: **1** (out of 45 students) Institute Rank: **1** (out of 830 students in the years 2013-14 and 2014-15)

Awards and Honors

1. **C.L. and Jane Liu Award:** For showing exceptional research promise. Awarded to one student across batches *(2020)*
2. **Google PhD Fellowship Nomination:** Selected across all departments to represent UIUC for the fellowship *(2019-20)*
3. **Best Reviewer:** Among the top 400 reviewers for NeurIPS *(2019)*
4. **B.D. Sanghi Gold Medal:** For best academic performance in Mathematics & Statistics Department *(2015)*
5. **S. Gupta Gold Medal:** For highest CGPA in Mathematics & Scientific Computing M.Sc.(Int.) program *(2015)*
6. **Project Proficiency Medal:** For best project in Mathematics & Scientific Computing M.Sc.(Int.) Program *(2015)*
7. **General Proficiency Medal:** For best academic performance in Mathematics & Scientific Computing program *(2015)*
8. **Academic Excellence Awards:** For being among the top 7% of the batch (830 students) academically *(2013, 2014)*

Research Publications

1. **Gaurush Hiranandani**, Warut Vijitbenjaronk, Oluwasanmi Koyejo, and Prateek Jain. Optimization and Analysis of the pAp@k Metric for Recommender Systems. In *International Conference on Machine Learning - ICML*, 2020.
2. **Gaurush Hiranandani**, Shant Boodaghians, Ruta Mehta, and Oluwasanmi Koyejo. Multiclass Performance Metric Elicitation. In *Neural Information Processing Systems - NeurIPS*, 2019.
3. **Gaurush Hiranandani**, Sumeet Katariya, Nikhil Rao, and Karthik Subbian. Online Bayesian Learning for E-commerce Query Reformulation. In *Bayesian Deep Learning* workshop at *Neural Information Processing Systems - NeurIPS*, 2019.
4. **Gaurush Hiranandani***, Harvineet Singh*, Prakhar Gupta*, Iftikhar Ahamath Burhanuddin, Zheng Wen, and Branislav Kveton. Cascading Linear Submodular Bandits: Accounting for Position Bias and Diversity in Online Learning to Rank. In *Uncertainty in Artificial Intelligence - UAI*, 2019. **(Oral)**
5. **Gaurush Hiranandani**, Shant Boodaghians, Ruta Mehta, and Oluwasanmi Koyejo. Performance Metric Elicitation from Pairwise Classifier Comparisons. In *Artificial Intelligence and Statistics - AISTATS*, 2019.
6. **Gaurush Hiranandani***, Raghav Somani*, Sreangsu Accharya, Oluwasanmi Koyejo. Clustered Monotone Transforms for Rating Factorization. In *Web Search and Data Mining - WSDM*, 2019.

*Equal Contribution

7. Sunav Choudhary, **Gaurush Hiranandani**, and Shiv Kumar Saini. Sparse Decomposition for Time Series Forecasting and Anomaly Detection. Accepted to *SIAM International Conference on Data Mining - SDM*, 2018.
8. **Gaurush Hiranandani**, K. Ayush, A. R. Sinha, S.V.R. Maram, C. Varsha, and P. Maneriker. Enhanced Personalized Targeting Using Augmented Reality. In *International Symposium on Mixed and Augmented Reality - ISMAR*, 2017.
9. **Gaurush Hiranandani**, Pranav Maneriker, and Harsh Jhamtani. Generating Appealing Brand Names. In *International Conference on Computational Linguistics and Intelligent Text Processing - CICLing*, 2017.
10. **Gaurush Hiranandani**, and Jean-Marc Schlenker. Small Circulant Complex Hadamard Matrices of Butson Type. In *European Journal of Combinatorics*, pp. 306-314 (50), 2016.
11. Natwar Modani, P. Maneriker, **Gaurush Hiranandani**, A. R. Sinha, Utpal, Vaishnavi S., and S. Gupta. Summarizing Multimedia Content. In *International Conference on Web Information Systems Engineering - WISE*, 2016.
12. **Gaurush Hiranandani**, and Harish Karnick. Improved Classification and Reconstruction by Introducing Independence and Randomization in DNNs. In *Digital Image Computing: Techniques and Applications - DICTA*, 2015.

Patents

Organization: Adobe Research

1. **Gaurush Hiranandani**, Sai Varun Reddy Maram, Kumar Ayush, Chinnaobireddy Varsha, and Siddhant Jain. Product Recommendations Based on Augmented Reality Viewpoints. *US62/415332 (Filed in multiple countries)*.
2. **Gaurush Hiranandani**, T. Goyal, P. Bajaj, and S. Shekhar. Determination of Paywall Metrics. *US15/277,136*.
3. **Gaurush Hiranandani**, Chinnaobireddy Varsha, Sai Varun Reddy Maram, Kumar Ayush, and Atanu R. Sinha. Identifying Augmented Reality Visuals Influencing User Behavior in Virtual-Commerce Environments. *US15/433,834*.
4. **Gaurush Hiranandani**, S. K. Saini, and M. Sinha. Anomaly Detection at Coarse Granularity of Data. *US15/428,523*.
5. **Gaurush Hiranandani**, Kumar Ayush, Chinnaobireddy Varsha, and Sai Varun Reddy Maram. Creating Targeted Content Based on Detected Characteristics of an Augmented Reality Scene. *US15/454,750*.
6. **Gaurush Hiranandani**, and N. Modani. Representative Metrics for Efficient Anomaly Detection. *US15/178,403*.
7. **Gaurush Hiranandani**, Pawan Vaishnav, Aditya Jain, Moumita Sinha, and Kushal Chawla. Augmented Reality Predictions using Machine Learning. *US15/868,531*.
8. Branislav Kveton, **Gaurush Hiranandani**, Prakhar Gupta, Harvineet Singh, Iftikhar Ahamath Burhanuddin, and Zheng Wen. Online Diverse Set Generation from Partial Click Feedback. *US15/892,085*.
9. Prakhar Gupta, **Gaurush Hiranandani**, H. Singh, and S. K. Saini. End of Day Metric Projection. *US15/609,254*.
10. S. Choudhary, **Gaurush Hiranandani**, and S.K. Saini. Sparse Decomposition of Time Series Data. *US15/804,012*.
11. Shivani Gupta, **Gaurush Hiranandani**, Charanjit Ghai, and Anshul Agrawal. Target Audience Content Interaction Quantification. *US14/548,061 (Published)*.
12. Natwar Modani, Pranav Maneriker, **Gaurush Hiranandani**, Atanu R. Sinha, Utpal, Vaishnavi S., and Shivani Gupta. Determining Quality of a Summary of Multimedia Content. *US14/959,219 (Granted)*.
13. Shivani Gupta, Charanjit Ghai, **Gaurush Hiranandani**, and Anshul Agrawal. User Interest Learning through Hierarchical Interest Graphs. *US14/548,116 (Published)*.
14. Natwar Modani, Pranav Maneriker, **Gaurush Hiranandani**, Atanu R. Sinha, Utpal, Vaishnavi S., and Shivani Gupta. Multimedia Document Summarization. *US14/947,964 (Published)*.
15. Kumar Ayush, and **Gaurush Hiranandani**. Context Aware Recommendations Embedded in Augmented Viewpoint to Retarget Consumers in v-commerce. *In filing process*.
16. Kumar Ayush, and **Gaurush Hiranandani**. Augmented Reality Based Style Aware Recommendations based on Perceptual Shape Style Compatibility with Objects in the Viewpoint. *In filing process*.
17. Natwar Modani, Iftikhar Ahamath Burhanuddin, **Gaurush Hiranandani**, and Shiv Kumar Saini. Providing Personalized Alerts and Anomaly Summarization. *US15/238,208*.
18. Balaji Vasan Srinivasan, Sanket Mehta, **Gaurush Hiranandani**, Harsh Jhamtani, Natwar Modani, and Cedric Huesler. Propagation of Changes in Master Content to Variant Content. *US15/184,959*.

Teaching and Responsibilities

1. *Teaching Assistant, Machine Learning (Fall 2017)*: Assisted in teaching Machine Learning to 130+ students.
2. *Internship Mentor, Adobe Research (Summer 2016)*: Mentored a team of 3 students on a project based on *Augmented Reality for Digital Marketing*. The project resulted in 3 patents and a paper accepted to *ISMAR'2017*.
3. *Internship Co-Mentor, Adobe Research (Summer 2015)*: Co-mentored a team of 3 students on a project based on *Multimedia Content Summarization*. The project resulted in 2 patents and a paper accepted to *WISE'2016*.

Relevant Courses with Grades

Machine Learning: Tools and Techniques (A)
Mathematics for Machine Learning (A)
Applied Nonlinear Programming (A)
Data Mining: Principles and Algorithms (A)
Introduction to Game Theory (A)
Statistical Simulation and Data Analysis (A)
Non-Linear Regression (A)
Discrete Mathematics (A)
Graph Theory (A)
Partial Differential Equations (A)
Machine Learning Theory (A)
Computational Inference and Learning (A)
Regression Analysis (A)
Time Series Analysis (A)
Inference I (A)
Applied Stochastic Processes (A)
Probability Theory (A)
Linear Programming and Extensions (A)
Topology (A)
Algebraic Topology (A)

Extra Curricular Activities

1. Winner of the intra-university cricket championship (Cricket Club of Illinois - Spring 2019, Fall 2019).
2. First Prize in both Street Dance and Main Dance competition in Antragni (IIT Kanpur's Cultural Festival, 2011).
3. First Prize in Street Dance competition in Rendevouz (IIT Delhi's Cultural Festival, 2011).
4. Third Prize in Main Dance competition in Mood Indigo (IIT Bombay's Cultural Festival, 2011).
5. First Prize in both Monomode and Black & White Photography competition in Spectrum (IIT Kanpur, 2012).
6. Link Student, Counseling Service (2012-13), IIT Kanpur: Successfully aided 1 student to come out of Academic Probation by motivating and helping him academically.
7. Professional Shows Coordinator (2012), IIT Kanpur: Worked in a team of 5 to bring together 5 shows involving budget of $35,000 which witnessed a total audience of 30,000+ people in Antragni'12 (IIT Kanpur's cultural festival).
8. Student Guide, Counseling Service (2011-12), IIT Kanpur: Successfully performed the role by looking after the orientation and guidance of 9 new students. Apart from regular guidance, undertook the initiative to motivate the students for performing academically as well as in extra-curricular activities.