AARSH PRAKASH AGARWAL

(+91) 8765-806-474 ⋄ E-mail ⋄ Linked-In ⋄ Google Scholar

EDUCATION

Masters of Science in Computer Science, Georgia Institute of Technology   *Aug 2022 - April 2025*
Major in Machine Learning   *Performance:* **3.9/4.0**

Bachelor of Technology, Indian Institute of Technology Kanpur   *July 2015 - July 2019*
Major in Electrical Engineering   *Performance:* **9.2/10**
Minor in Machine Learning and Cognitive Sciences

AWARDS AND ACHIEVEMENTS

- Secured All India Rank 460 in JEE-Advanced (2015) out of 1.3 million candidates.
- Awarded the Certificate of merit for Academic Excellence for the years 2015-16 and 2016-17 by IIT Kanpur.
- Awarded the Spot Award for excellent performance for the years 2019 and 2020 by Adobe Inc.

PUBLICATION

A.P. Agarwal, A. Nambhi, B.P.R. Gudda, G. Verma, H. Singh, I.A. Burhanuddin **"Stuck? No Worries!: Task-aware Command Recommendation and Proactive Help for Analysts"** in *UMAP, 2019*

PATENTS

- **A. P. Agarwal**, K.S. Venkatesh **"A Method For Classifying Touch Response On A Capacitive Touch Screen Panel And Apparatus Thereof"**, *Indian Patent Application 201911016923*
- **A.P. Agarwal**, A. Nambhi, B.P.R. Gudda, G. Verma, H. Singh, I.A. Burhanuddin **" Task-aware Command Recommendations and Proactive Help"** *USPA 16/454,683*
- **A. Agarwal**, S. Gupta, S. Sinha **"Deblurring motion in Videos"** *USPA 17/338,189*
- **A. Agarwal**, H. Nyati **"Systems for Single Image Reflection Removal"** *USPA 17/718,579*

PROFESSIONAL EXPERIENCE

Computer Scientist   *Jul 2019 - Present*
Adobe Inc. Noida, India

- Responsible for developing, designing and maintaining desktop based Installer for Adobe Applications
- Reduced the crashes in Installations by 80% by identifying and fixing several long standing crashes.
- Designed and developed a differential update mechanism to slash 85% of the updation time.
- Implemented the modular installation which reduced the installation time for new users by 60%.
- Developed a **CNN** based architecture to remove **motion blur** from videos and the prototype was selected as one of the ten official sneaks to be presented at Adobe Max Conference 2020
- Researched and developed a novel **CNN** based solution to remove unwanted **reflections** from single image.
- Researched and developed a prototype to generate a **3D mesh** of the object from a single view image. It involved modifying a **diffusion pipeline** to first predict multiview and applying **score distillation sampling** to generate a 3D mesh. The prototype is currently under review for patent submission.

INTERNSHIPS

1. Research Intern at Adobe Big Data Experience Lab, India   *May 2018 - July 2018*
Analytics Proactive Help Assistant Tool

- Researched and developed a task based proactive help assistant for Analysts.
- Implemented **Probability Suffix trees** in conjunction with sequence mining, to identify the common tasks performed by analysts, and developed a deep learning-based solution to anticipate their next action.

2. Research Intern at SURGE, Computer Vision Lab, IIT Kanpur *May 2017 - July 2017*
Classification of Hard and Soft Taps on Capacitive Screens
Supervisor: Dr. K.S. Venkatesh, Department of Elctrical Engineering, IIT Kanpur
- Developed a smart android application for distinguishing between soft and hard touch on capacitive screen
- Implementation details and findings are under consideration for patent at Indian Patent Office

SELECTED PROJECTS

1. Human pose estimation models are few-shot forecasting learners [Report] *Aug 2023 - July 2023*
Supervisor: Dr. Zsolt Kira, EECS Department, Georgia Tech
- Fine-tuned **MotionBERT** for 3D human pose forecasting using deep learning techniques.
- Visualized learned embeddings to analyze spatio-temporal relationships in human motion.
- Implemented and optimized an **MLP-based forecasting head**, improving motion prediction accuracy.

2. Parsimonious Online Gaussian Regression [Report] *August 2018 - July 2019*
Supervisor: Dr. Ketan Rajawat, Department of Electrical Engineering, IIT Kanpur
- Studied the Kernel methods and Online Gaussian methods for regression and classification algorithms.
- Implementation and comparison of a novel Algorithm that approximates the **Gaussian Processes in Online** setting without the bottleneck, with Sparse Online Gaussian Processes.

3. Scalable Variational Inference Methods [Report] *February 2019- April 2019*
Supervisor: Dr. Piyush Rai, Department of Computer Science and Engineering, IIT Kanpur
Course Project: Topics in Probabilistic Modelling and Inference
- Studied and compared the recent methods to perform generic and scalable variational inference such as Stochastic Variational Inference, Black Box Variational Inference, Reparametrization Techniques,etc.
- Implemented the Stochastic Variational Inference techniques for LDA and Hierarchical topic models.

4. Incremental Majorization-Minimization for large scale M.L. [Report] *January 2019- April 2019*
Supervisor: Dr. Ketan Rajawat, Department of Electrical Engineering, IIT Kanpur
Course Project: Convex Optimization
- Studied the incremental Majorization-minimization schema for optimizing the large sum of functions.
- Illustrated the convergence of the algorithm in case of both convex and non convex functions.
- Implemented the algorithm for large-scale dataset and compared it with the state of the art algorithms.

5. Coherent and Novel Story Generation [Report] *January 2018 - April 2018*
Supervisor: Dr. Harish Karnick, Computer Science and Engineering, IIT Kanpur
Course Project: Natural Language Processing
- Implemented Statistical Machine Translation for creating coherence in stories generated from plot points.
- The plot graphs were learned from the crowd-sourced stories to model the temporal relations and the fictional interactions between the events and characters to generate novel stories based on the theme.

6. Reinforcement Learning with Flappy Bird [Report] *August2017 - Novemeber 2017*
Supervisor: Dr. Purushottam Kar, Computer Science and Engineering, IIT Kanpur
Course Project: Introduction to Machine Learning
- Studied the different approaches to the Learning Problem such as Deep Q-Learning and Policy Gradient.
- Coded and trained the agent on python for Flappy Bird game to achieve the superhuman performance.