

# Ayush Baid

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## Education

### Georgia Institute of Technology

MS in Computer Science (Machine Learning)

Aug 2019 - May 2021 (Exp.)

Atlanta, USA

- GPA: 4.00/4.00 | TA for Computer Vision | Relevant courses: Deep Learning, Web Search and Text Mining

### Indian Institute of Technology (IIT) Bombay

B.Tech. & M.Tech. in Electrical Engineering, Minor in Computer Science

Jul 2012 - Jun 2017

Mumbai, India

- GPA: 9.17/10.00 | Received UG Research Award | Relevant courses: Medical Image Processing, Markov Chains

## Experience

### Amazon

SDE Intern, Alexa Multitasking

May 2020 - Jul 2020

Seattle, USA

- Developed a REST API to query Alexa skills data from AWS Redshift and used D3 to visualize lifecycle of fetched skills
- Reduced the time to understand interactions between multitasking skills from a couple of minutes to under 10 seconds

### Goldman Sachs

Analyst, Risk Division

Jun 2017 - Jul 2019

Bengaluru, India

- Contributed to ~10% drop in compute by upgrading the compute packaging and runtime prediction model
- Designed a microservices-based risk computation system; reduced debug time by 20% with granular diagnostics tools
- Developed automated monitoring and alert systems for data-store, messaging pipeline, and pricing progress status

### Sony Corporation

Intern, Test Technology

May 2015 - Jul 2015

Tokyo, Japan

- Developed a cloud-based testing platform for Android applications with configuration based virtual device scheduling

## Key Projects

### GTSFM: Scalable Structure-From-Motion Pipeline (Advisor: Dr. Frank Dellaert)

Dec 2019 - Present

- Developed a distributed front-end module using Dask to produce sparse correspondences between pairs of images
- Benchmarked 15000+ combinations of feature detection, matching, and verification methods for SLAM applications

### 3D Reconstruction for Precision Agriculture (Advisor: Dr. Frank Dellaert)

Aug 2019 - Jan 2020

- Developed an automated system to produce 3D reconstructions of plants from RGB images of lettuce crops
- Improved performance of RANSAC by clustering features on each image with DBSCAN and filtering repeated texture

### Moderation on Reddit by Learning Community Opinion

Feb 2020 - Apr 2020

- Fine-tuned GPT-1 on each subreddit and used them to complete political prompts, reducing the moderator workload

### Deep Learning based Image Translation between Sunny-Cloudy Images

Oct 2019 - Nov 2019

- Used cycle-GANs to translate to convert cloudy images to sunny using novel content similarity component in the loss

### Laparoscopy Image Enhancement using Bayesian Inference

Jun 2016 - Jun 2017

- Achieved performance gain by combining smoke removal, speckle removal, and de-noising in a single framework
- Modelled system variables with probabilistic graphical models and designed novel priors for image texture and color

### FOSSEE Scilab Toolbox

Dec 2015 - Jan 2017

- Developed and tested signal processing functions for signal processing toolbox, emulating the MATLAB's API

## Publications

- Baid, Ayush, et al. "Joint desmoking, specular removal, and denoising of laparoscopy images via graphical models and Bayesian inference." 2017 IEEE 14th International Symposium on Biomedical Imaging (ISBI). IEEE, 2017.

## Skills

**Languages:** Comfortable: C++, Python, Scala | Familiar: JavaScript, Java, MATLAB

**Technologies:** Comfortable: GTSAM, Kafka, LaTeX, MongoDB, OpenCV, Pandas, PyTorch, Scikit-Learn  
Familiar: AWS, Hadoop, Redis, Spark, SQL