

# Ayush Baid

ayushbaid.github.io

Seattle, WA

## Education

### Georgia Institute of Technology

MS in Computer Science, specialized in Machine Learning

Atlanta, USA  
Aug `19 - May `21

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

### Indian Institute of Technology (IIT) Bombay

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

Mumbai, India  
Jul `12 - Jun `17

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

## Experience

### Amazon

SDE, Alexa Multitasking

Seattle, USA  
May `21 - Present

- Enhanced load test framework by chaining CRUD operations to simulate realistic load on database and services
- Working on building developer facing APIs and internal APIs to support skill background and resumption

SDE Intern, Alexa Multitasking

May `20 - Jul `20

- Build a skill state visualizer in D3 using new REST APIs to fetch data, reduced analysis time from ~5 mins to 10 seconds

### Goldman Sachs

Analyst, Risk Division

Bengaluru, India  
Jun `17 - Jul `19

- Contributed to ~3% drop in compute costs by upgrading the compute batching and runtime prediction model
- Designed a microservice based system using Kafka; reduced debug time by 20% with granular diagnostics tool
- Developed automated monitoring and alert system for data-stores, messaging pipeline, and pricing progress status

### Sony Corporation

Intern, Test Technology

Tokyo, Japan  
May `15 - Jul `15

- Developed an Android app testing service to support testing on different configurations to virtual devices on-demand

## Key Projects

### GTSMF: Distributed Structure-From-Motion Software (Advisor: Dr. Frank Dellaert)

Dec `19 - Present

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

### 3D object detection from RGB images using privileged information training

Oct `20 - Dec `20

- Developed a 3D object detection for autonomous driving scenarios which uses arbitrary RGB camera rigs
- Used LiDAR data as privileged information during training for improved performance after low number of epochs

### Moderation on Reddit by Learning Community Opinion

Feb `20 - Apr `20

- Trained GPT models for ~10 subreddits, and applied prompt completion to understand opinions about political topics

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

Oct `19 - Nov `19

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

### Laparoscopy Image Enhancement using Bayesian Inference

Jun `16 - Jun `17

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

### FOSSEE Scilab Toolbox

Dec `15 - Jan `17

- Developed and tested APIs for an open-source signal processing toolbox, proving an alternative to MATLAB

## 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.