

# Shubhangi Upasani

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## OBJECTIVE

A machine learning and computer vision enthusiast with many relevant projects and experience in software development, looking for full-time job opportunities in areas of machine learning/computer vision (graduating in May 2021).

## EDUCATION

### Georgia Institute of Technology, Atlanta, Georgia, USA

Aug 2019 to May 2021

Master of Science in Computer Science – Machine Learning Specialization (4.0/4.0 GPA)

Coursework: Machine Learning, Computer Vision, Natural Language Processing, Deep Learning, Artificial Intelligence, Big Data

### Delhi Technological University, New Delhi, India

Aug 2015 to May 2019

Bachelor of Technology – Electronics and Communication Engineering (9.21/10 CGPA)

## TECHNICAL SKILLS

**Languages:** Python, Java, C/C++, CUDA, MATLAB, HTML, CSS, JavaScript, SQL

**Tools:** Scikit-learn, NumPy, Pandas, SciPy, Matplotlib, frameworks (PyTorch, TensorFlow), Neural Networks, OpenCV, PIL, Scikit-image, Image Processing, Data Visualization/Analysis, Git, Hadoop, Slurm, GPU, Linux

## RESEARCH EXPERIENCE

### Student Researcher | Hays Lab, Georgia Tech | Supervisor: Dr. James Hays

Jan 2020 to Present

- Building **machine learning models** using LiDAR data to enable lane inference and object detection by **self-driving cars**
- Automating HD map creation through **3D scene understanding** and **line segment detection** for safe **autonomous navigation**
- Working for release of first public automation benchmark and open-source evaluation tools

**Publication:** Kumar A., Nayyar A., Upasani S. et al. (2020) *Empirical Study of Soft Clustering Technique for Determining Click Through Rate in Online Advertising*. Advances in Intelligent Systems and Computing. Springer. [https://doi.org/10.1007/978-981-32-9949-8\\_1](https://doi.org/10.1007/978-981-32-9949-8_1)

## WORK EXPERIENCE

### Software Development Engineer Intern | Amazon, Seattle USA

May 2020 to Jul 2020

- Led end-to-end development (design, coding, testing, deployment) of *Visualizer* for debugging inventory plans by supply chain
  - Minimized plan load times by 50%** by virtue of lazy data loading and losing monolithic structures
  - Reduced cost** of backend services **to \$10 (3-fold reduction)** per month by implementing a serverless architecture
- Technologies Used: Native AWS (Lambda, S3, CloudFront, API Gateway), Java, Rest API, Angular, JavaScript, HTML

### Software Engineer Intern | Western Digital (SanDisk), India

Jun 2018 to Jul 2018

- Developed T-SQL programs to **minimize dashboard data retrieval times by 5 folds** and deployed them in production
  - Delivered solutions for assessing hard drive's lifetime utilizing **statistical machine learning models; achieved 80% accuracy**
  - Co-led development of RPG Schematic Generator project; accelerated deployment by a week through bug-fixes
- Technologies Used: Python, scikit-learn, NumPy, Pandas, Microsoft SQL Server, T-SQL, C#

### Software Development Engineer Intern | Andritz Hydro Pvt. Ltd, India

Nov 2017 to Jan 2018

- Developed attendance monitoring system; Achieved faster internal messaging by implementing chat-server module

## ACADEMIC PROJECTS

### Facebook Habitat AI Challenge, Prof. Zolt Kira | Georgia Tech

- Implemented **supervised learning** baseline for **point goal navigation** with guidance of Facebook AI research scientists
- Developed a benchmark for predicting actions given state of **embodied agent** with nearly **60% accuracy**

### Visual Question Answering (VQA), Prof. Diyi Yang | Georgia Tech

- Built and tested machine learning models for answering questions with binary, numeric and multiple-choice answers
- Employed **attention mechanisms** for different **language and visual cues**; utilized **novel** strategies for **feature engineering**

### Semantic Segmentation on Antarctic Landsat-8 Imagery, Prof. Ling Liu | Georgia Tech

- Experimented with various **image processing** techniques to extract rock outcrop from satellite images; achieved **60% accuracy**
- Implemented **deep learning models** (SegNet, U-Net) to study ice sheet depletion and global warming in Antarctica

### Visual Relationship Detection, Prof. Devi Parikh | Georgia Tech

- Extracted object relationships in images through **object detection** and **classification**; utilized **few-shot learning** and **triplet loss**
- Implemented **CNN models** with bounding boxes and glove embeddings; Achieved **accuracy (70%), precision (70%), recall (65%)**