Shubhangi Upasani

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SUMMARY

A machine learning and computer vision enthusiast with lots of related projects and adequate experience in large-scale software development using cloud, looking to break into 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, Big Data Analytics, Artificial Intelligence

Delhi Technological University, New Delhi, India **Aug 2015 to May 2019**

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

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 (New York division)
- **Implemented audit data prober** to help product managers and retail users debug inventory plan computations without external developer support
- **Minimized plan load times by** nearly **50%** by virtue of lazy data loading and losing monolithic structures
- **Reduced cost** of providing 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**

- Executed T-SQL programs to **minimize dashboard data retrieval times by 5 folds** and subsequently deployed in production
- Delivered solutions for assessing drive's lifetime and endurance utilizing **statistical machine learning models**; **achieved 80% accuracy**
- Co-led development of **RPG Schematic Generator** project; accelerated deployment process 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 online **attendance monitoring and evaluation** system; Accomplished quick **internal messaging** through chat-server module

ACADEMIC PROJECTS

Facebook Habitat AI Challenge, Prof. Zsolt Kira | Georgia Tech

- Implemented **supervised learning** (behavioral cloning) baseline for **point goal navigation** task under guidance of Facebook AI research scientists
- Developed a benchmark based on RNN for predicting optimal actions given the state of an **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 mechanism** to give equal importance to **language and visual priors**; utilized a **novel fusion** strategy for **feature engineering**

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

- Tested various **image processing** techniques to extract rock outcrop from satellite images; achieved **60% accuracy** for rock classification
- Trained and tuned **deep learning models (SegNet, U-Net)** to study ice sheet depletion and effects of global warming in Antarctica

Visual Relationship Detection, Prof. Devi Parikh | Georgia Tech

- Extracted visual relationships between objects through **object detection** and **classification** in images; utilized **few-shot learning** and **triplet loss**
- Trained **CNN models** with bounding box masks and glove embedding vectors; Achieved **accuracy (70%), precision (70%), recall (65%)**

RESEARCH EXPERIENCE

Student Researcher | Hays lab, Georgia Tech **Jan 2020 to Present**

- Building machine learning models for **lane-graph inference** for lifesaving, **self-driving vehicles** using time series LiDAR data from Argoverse dataset
- Automating **semantic map creation** through **3D scene understanding** for safe autonomous navigation in new environments

Publication: Kumar A., Nayyar A., **Upasani S**., Arora A. (2020) *Empirical Study of Soft Clustering Technique for Determining Click Through Rate in Online Advertising*. In: Sharma N., Chakrabarti A., Balas V. (eds) Data Management, Analytics and Innovation. Advances in Intelligent Systems and Computing, vol 1042. Springer, Singapore. https://doi.org/10.1007/978-981-32-9949-8_1

TECHNICAL SKILLS

Languages: Proficient: Java, Python | Intermediate: C/C++, CUDA, MATLAB, HTML, CSS, JavaScript, SQL

Core Competencies: scikit-learn, NumPy, Pandas, SciPy, Matplotlib, frameworks (PyTorch, TensorFlow), Neural Networks, OpenCV, PIL, Scikit-image, YOLO, Fast-RCNN, LSTM-RNN, ResNet, VGG, SLAM, SIFT, Image Processing, Data Visualization/Analysis, Git, Hadoop, Linux

ACHIEVEMENTS

Women in Tech Regatta Seattle 2020 scholar — ICDMAI Malaysia 2019 scholarship — Rank 1 in university in CodersBit 2018 — Ranked among top 5% students in undergraduate major — Merit scholarship from FIITJEE, New Delhi