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Shashank Srikanth

Education

2016-2021 **BTech and MS by Research in Computer Science**, *International Institute of Information Technology*, Hyderabad, **CGPA: 9.73 / 10.0**.

2014–2016 **Senior Secondary**, *Amity International School, Saket*, Delhi, **95.8%**.

2013–2014 **Secondary**, *Amity International School, Saket*, Delhi, **CGPA: 10.0 / 10.0**.

Publications

June 2019 **INFER: INtermediate representations for FuturE pRediction**, *Accepted at IEEE IROS 2019*, First author paper.
Project Page: INFER, Paper link: Arxiv

November 2019 **Driving the Last Mile: Characterizing and Understanding Distracted Driving Posts on Social Networks**, *Accepted at AAAI ICWSM 2020*.
Project Page: Precog, Paper link: Arxiv

Experience

May 2020 - July **Software Engineering Intern**, *Tower Research Capital*, Gurgaon.
Offer rescinded due to COVID-19

May 2018 - Present **Undergraduate Researcher, Robotics Vision Lab**, *Prof. Madhava Krishna*, IIIT-H.
Implemented deep learning models to compute semantic, instance segmentation & disparity maps of outdoor scenes. Designed deep learning models based on Conv-LSTMs and CNNs to predict the future trajectory of vehicles in roads given the past trajectory. Deployed the trajectory forecasting network on CARLA, an autonomous driving simulation platform.

July 2018 - Present **Undergraduate Researcher, Precog Lab** , *Prof. Ponnurangam Kumaraguru*, IIIT-Delhi.
As part of 2019 Indian general elections project, I analyzed social media accounts of more than 60 million twitter users to detect twitter bots and characterize profile change behaviour.
Was also part of a project that involved writing python scripts & scrapers to collect over 6 million videos from Snapchat Maps interface. Implemented deep learning models based on 3D Resnets to classify these videos as driving & non-driving and performed spatiotemporal analysis.

June 2019 - December **Data Science Intern**, *Prof. Siddharth Sharma*, ISB, Mohali.
The work involves implementing & running scrapers to collect job postings data in Indeed.com and, analysing these job postings on various parameters such as mean time of job postings & types of jobs involved.

Aug 2017 - Nov 2017 **Software Engineering Intern**, *VLEAD*, IIIT-H.
Built reproducible development environments using Vagrant and wrote shell scripts and config files for auto-deploying the various micro-services.

May 2017 - June 2017 **Web Development Intern**, *SynapseIndia*, Noida.
Developed a Custom Content Management System using MySQL, PHP, CakePHP & Python. Implemented Payment Gateway using the PayPal API.

Aug 2018 - April 2019 **Teaching Assistant**, *IIIT-H*.
The work involves taking tutorial sessions & explaining concepts of given course to students

Projects

Wikipedia Search Engine	Implemented efficient and scalable search engine on Wikipedia data. Used tf-idf statistic for ranking of documents.Implemented multi level indexing and used threading for fast retrieval of documents.
Reinforcement Learning	Implemented the paper "Deep Reinforcement Learning in Large Discrete Action Spaces" using PyTorch and PyFLANN library. The work involved the extension of the DDPG algorithm to work in environments with large discrete action spaces using k-nearest neighbour approximation.
Hashtag Generation	Designed and implemented a multimodal hashtag generation pipeline that suggests new hashtags for an Instagram post with images & text. The approach used CNNs for image classification and glove-embeddings for recommending semantically similar hashtags.
Computer Vision	Computed the camera calibration matrix using Zhang's method. Reconstructed the 3D scene up to a scale given multiple views of the scene using bundle adjustment
AI Bot	Built a bot for playing 4*4*4*4 ultimate tic-tac-toe using algorithms such as minimax and alpha-beta pruning. Implemented custom heuristics, caching, iterative deepening search, caching etc. The bot placed third in the Bot championship conducted
Bash Shell	Developed a shell in C using POSIX system calls. Implemented features like killing a process, input/output redirection, piping and signal handling
Database Engine	Implemented a mini SQL engine that supported various SQL operations like select, join & where clause.
Big Data & Policing	Wrote scripts to collect over 3 million e-challans (Electronic traffic-violation receipt) data from the traffic violation portal of Ahmedabad police. Characterized spatial and temporal patterns in the data, and proposed a random forest classifier to model recidivism in traffic violations. Work was submitted to *CODS COMAD 2020*

Scholastic Achievements

Huawei Scholarship	Received the Huawei research fellowship for excellent performance in research and dual degree program.
Dean's Merit List	Top 5 rank in the CSD program, selected in Dean's Academic Merit List for all the semesters (Awarded to top 5% performers)
Dean's Research List	Received the Dean's Research Award for excellence in research and strong publication record as an undergraduate

Technical Skills

Working Knowledge	Python, C, C++ (STL), Linux, MATLAB, PyTorch, HTML/CSS
Past Experience	Flask, SQL, Javascript, Tensorflow, Selenium, Scikit-learn, OpenGL, Ruby on Rails

Courses

Computer Science	Data Structures, Algorithms, Databases, Distributed Systems, Software Engineering, Big Data & Applications, Software Design, Artificial Intelligence, Graphics, Operating Systems, Computer Networks
Research Stream	Robotics & Computer Vision, Deep Learning, Machine Learning, Reinforcement Learning, Information Retrieval, HCI, Optimization Methods, Machine Learning for Natural Sciences
Mathematics	Linear Algebra, Probability, Group Theory, Differential Equations