Abhinav Deep Singh

CONTACT DETAILS

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EDUCATION

UT AUSTIN
M.S. in Computer Science
August 2018 - Expected May 2020
GPA: 4.0 / 4.0 (After 2 Semsters)

IIT DELHI
B.Tech. in Computer Science
July 2012 - May 2016
GPA: 9.136 / 10.0

RESEARCH INTERESTS

Machine Learning
Artificial Intelligence
Computer Vision

PUBLICATION

Abhinav Deep Singh et al. (2016), **Quantifying sentence complexity based on eye-tracking measures.** COLING, Computational Linguistics for Linguistic Complexity Workshop, (pp. 202-212.)

COURSEWORK

GRADUATE
Natural Language Processing
Deep Learning Seminar
Reinforcement Learning
Numerical Optimization in Graphics/AI

UNDERGRADUATE
Machine Learning
Natural Language Processing
Probabilistic Graphical Models
Analysis and Design of Algorithms
Introduction to Databases

WEB COURSES
Udacity's Self Driving Car Nano-degree Program (Dec 2016 - Oct 2017) by Sebastian Thrun

SKILLS

PROGRAMMING
Competent:
Python • C++ • Java • LATEX
Familiar:
Matlab • SML • OCaml • PostgreSQL

TOOLS
Pytorch • Tensorflow • Caffe • Keras

INDUSTRY EXPERIENCE

GOOGLE LLC | Software Engineering Intern
May 2019 – Aug 2019 | Google Cloud, Sunnyvale, California, USA
- Worked on **Time-Series Forecasting and Anomaly Detection**.
- Analysed different available datasets to check seasonality and holiday effects.
- Created **Data and ML Pipeline**, to continuously ingest and train neural network models on new data, using **Tensorflow Extended** library.

SAMSUNG ELECTRONICS CO. LTD | Software Engineer
Sep 2016 - Aug 2018 | AI Center, Samsung Research Seoul, South Korea
- Worked on developing Samsung's first **Autonomous Car**.
- Lead a sub-project handling dynamic object detection, like pedestrians and cars using cameras and LiDARs using deep CNNs implemented in **Tensorflow**.
- Successfully got **Highway Autonomous Driver Permit** for the car in August 2017 after test conducted by Korean Transportation Authority. The car then successfully navigated around in the city in loop of 10 km.

PROJECTS

GROUNDED VISUAL QUESTION ANSWERING | Course Project
Jan 2019 – May 2019 | UT Austin | Supervisor: Prof. Raymond Mooney
- Implemented a neural network architecture in **Pytorch**, to answer the question given an image and a scene graph of the image. Worked on the GQA dataset.
- **Network reasoning** verified by checking attention on the image's scene graph.

TOPOLOGY AWARE MESH RECONSTRUCTION | Course Project
Sep 2018 – Dec 2018 | UT Austin | Supervisor: Prof. Qixing Huang
- Proposed a topology aware method for 3D reconstructions from a single RGB image using **graph convolution NN** and **reinforcement learning** using DDPG.
- Tested the idea successfully on a smaller task of 1D to 2D reconstruction.

STREAMING INTERACTIVE MEDIA | Undergraduate Thesis
July 2015 – May 2016 | IIT Delhi | Supervisor: Prof. Aaditeshwar Seth
- Motivation: Provide cheap solution for interactive media content at locations with **limited internet connectivity** in India.
- Developed a prototype system on **RaspberryPi using Python** and an **Android** application to support Unicast and Multicast connections, using **RTP and RTSP protocols** over low bandwidth network.
- The setup supported connections of up to 10 mobile devices with speed 2Mbps.

QUANTIFYING SENTENCE COMPLEXITY | Independent Project
Jan 2016 – May 2016 | IIT Delhi | Supervisor: Prof. S. Husain & Prof. R. Rajkumar
- Using **SVMs**, built an automatic system to assess sentence complexity using automatically predicted eye-tracking reading time measures and demonstrated the efficacy of these reading times for readability assessment.
- Successfully **published** the results.

DISTINCTIONS

2016	Undergraduate **CS department rank** 9 at IIT Delhi
2014-15	**Exchange Student** to INSA Lyon, France for fall semester
2014	Summer Undergraduate Research Award at IIT Delhi
2013	IIT Delhi **Merit Award** for being in top 7% in university
2012-16	Aditya Birla Scholarship awarded to **only 15 students cross India**
2012	Secured **All India Rank 85** in IITJEE among 500,000+ students
2012	Secured **All India Rank 59** in AIEEE among million+ students
2012	CBSE - XII Merit Certificate: **Top 0.1%** in high school exams across India
2009-16	National Talent Search Scholarship by NCERT, **Govt. of India**