

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

SCRIPT LEARNING | GRADUATE RESEARCH ASSISTANT

Jan 2020 – May 2020 | UT Austin | Supervisor: Prof. Raymond Mooney

- Using comprehension, learn new schemas with the help of zero shot learning.
- Currently in progress.

GROUNDING 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.

DISTINCTIONS

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|---------|---|
| 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 |