AAYUSH MAINI

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EDUCATION

Columbia University Aug 2017 – Dec 2018(Expected)
Master of Science in Computer Science *New York, US*

- Overall GPA: 3.84/4
- Coursework: Analysis of Algorithms, Deep Learning, Machine Learning, Introduction to Databases

International Institute of Information Technology Aug 2013 – Aug 2017
Bachelor of Technology in Computer Science and Engineering *Hyderabad, India*

- Overall GPA: 3.5/4
- Selected in Deans Academic List for being among top 10% students with excellent academic performance for all academic years
- Awarded certificate of achievement for being among the top 15% meritorious students in the graduating batch
- Coursework: Statistical Methods, Computer Vision, Optimization Methods, Data Structures

EXPERIENCE

Samsung R&D (Virtual Reality & Graphics) May 2016 – July 2016
Software Developer Intern *Bangalore, India*

- Designed and developed a desktop-android framework on top of FFMPEG-FFSERVER stack that offers a virutal reality interface for an android user to play PC games on a head mounted device
- The framework adapts to network conditions, adjusts the bandwidth automatically to provide seamless experience to the user

Centre for Visual Information Technology May 2015 – July 2015
Vision Research Intern *Hyderabad, India*

- Developed a framework that provides a concise description of the place in a given input image
- A classifier trained on multiple feature descriptors is used to get preliminary annotations which in turn generate the description

MAJOR PROJECTS

Scene Parsing using Image Segmentation and Semantic Labelling

- Developed a novel architecture composed of Convolutional layers and Recurrent Neural Networks(RNN) for semantic labelling
- The network works in an end-to-end manner without any pre-processing and post-processing
- The network achieves state-of-the-art accuracy with prevalent computational infrastructure

Neural Style Transfer

- Developed a framework that untangles the non-linear combination of style and content of the input images and combines them intelligently into a third image
- The framework uses a pre-trained deep neural network for object classification

Image Classification using CNN

- Developed a CNN from scratch - including complete implementation of forward propagation and backward propagation
- Implemented dropout, batch normalization, data augmentation on top of the vanilla CNN to improve accuracy

Marker Detection Under Occlusion

- Implemented a fiducial marker system: an algorithm for generation and detection of configurable marker dictionaries
- Multiple markers are deployed in the scene to provide robustness against user induced occlusion
- Learns GMM's to segregate foreground and background pixels and hence, renders the scene appropriately even with user occluding the scene

MDP Based Recommendation System

- Developed a recommendation system for movie suggestions that models user preferences using markov decision process
- The system employs a dynamic reward model and transition model to reflect changing users preferences

TECHNICAL SKILLS

C++, Python, Matlab, TensorFlow, MySQL, Neo4j, Redis, VB.NET, git