

Tejas Naik

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OBJECTIVE

Seeking summer 2018 internship opportunities as a Software Engineer to apply my strong problem-solving and analytical skills in real-life challenges.

EDUCATION

Stony Brook University, New York

Aug'17-Dec'18 (Expected)

Master of Science in Computer Science

GPA: 3.6/4.0

Course Highlights: Analysis of Algorithms, Computer Vision, Artificial Intelligence, Machine Learning, Probability and Statistics for Data Scientists, Database Systems.

Pune Institute of Computer Technology (PICT), University of Pune, India

May'13-May'17

Bachelor of Engineering (Information Technology)

GPA: 3.67/4.0

Course Highlights: Machine Learning, Operating Systems, Distributed Systems, Data Structures, Design & Analysis of Algorithms, Information Storage & Retrieval, Cloud Computing.

SKILL SET

Programming Languages

:

C++, Python, C, R.

Tools and Technologies

:

OpenCV, MATLAB, Tensorflow (Open Source), Keras, Flask, SQL, Hadoop, MongoDB, Cassandra, PHP, HTML, CSS, Ajax, JavaScript, Linux.

WORK EXPERIENCE

Human Interaction (HI) Lab, Stony Brook University (Graduate Student)

Feb'18-Present

- Presently working on the project, 'Increase Apparent Public Speaker Confidence by Video Stream Manipulation, Speech Recognition', under Prof. Roy Shilkrot.
- This project comprises of selecting optimal acoustic features (like Power Spectrum, Harmonicity, Spectral Spread etc.), extraction of them from the given audio-video dataset, for training a Neural Network model.
- This will further enable detection & removal of filler words (by aligning/lip-syncing the video), boosting the speaker confidence.
- Technologies used: Tensorflow, Kaldi, Python, Librosa, RNN, CNN, Machine Learning, Computer Vision.

BMC Software India Pvt. Ltd. (Software Developer Intern)

Aug'16-May'17

Auto-Scaling of Application Servers

- Developed a project in a team of four to Auto-Scale application servers for BMC's product 'BladeLogic Server Automation(BSA)'.
- Collaborated micro-services to fetch real time data (CPU Load etc.) from Nagios Monitoring Tool and to notify the administrator via email or text message.
- Contributed towards writing the REST API's for fetching and storing the data received from the monitoring tool and in generating a machine learning model for analyzing data.
- Integrated this model with the load balancer of 'BladeLogic Server Automation' to put into the production environment of BMC Software.
- Technologies used: Amazon Web Services, Machine Learning, Python 2.7, Nagios Monitoring Tool, Flask Interface, Micro-service Architecture, MongoDB.
- Project Demo Link: [Auto scaling of Application Servers](#)

PERSONAL PROJECTS

Drowsy Vehicle-Driver Detection.

Nov'17 – Dec'17

- Engineered a model for detecting the drowsiness level of a driver by continuous eye tracking in a real-time video using Haar Cascades and CamShift algorithm.
- Retrained the final layer of Inception-v3 model to the eyes dataset by using Transfer Learning. The final pooling layer of Convolutional Neural Network for each video frame (2048-D) was used to make a sequence of frames, which was fed as an input to the Long Short-Term Memory (LSTM) Recurrent Neural Networks (RNN).
- Utilized the output of the RNN to predict the drowsiness/alertness of the driver and sound an alarm in case of the former with an accuracy of 87.5%.
- Technologies used: Python 2.7, OpenCV 3.3.0, Tensorflow, CNN, RNN, LSTM.
- Project Demo Link: [Drowsy Driver Detection - YouTube](#)

Hashtag-based Instagram image retrieval & recognition

Mar'17-Apr'17

- Modeled a software to retrieve and store images based on Hashtag Search from a public Instagram account. These images are then fed to Convolutional Neural Networks for image recognition which returns the prediction accuracies for the top 5 image categories. Performed smart analysis of comments, likes, tags and stored in Cassandra.
- Technologies used: Python 2.7, Cassandra, Tensorflow, CNN.

ACADEMIC PROJECTS

Face Detection/Tracking

Sep'17-Dec'17

- Developed a Face-Detector to detect a face in video frame using pre-trained Viola-Jones detector, and then to track the face throughout the video frames using CamShift, MeanShift, Particle Filter, Kalman Filter, Optical Flow trackers.
- Observed that the Best Face Tracking results were obtained from the Optical Flow algorithm with an accuracy of 90%.
- Technologies used: Python 2.7, OpenCV 3.3.0

Intelligent Pacman Project

Oct'17-Nov'17

- Programmed a Pacman game by using variety of artificial intelligence techniques such as Reinforcement Learning, Probabilistic Inference and generic graph search algorithms such as Depth First Search, A-star with heuristics. This enabled the pacman to find the most optimum route to the food in different game versions.
- Implemented Mini-max, Alpha-beta pruning, Probabilistic Inference and Expectimax algorithms to enable multi-agent pacman adversarial search.
- Technologies used: Python 2.7, Artificial Intelligence

Support Vector Machines for Object Detection

Feb'18-Mar'18

- Implemented Multiclass SVM, Kernel SVM using Stochastic Gradient and Quadratic Programming.
- Used this model to perform Object Detection on images by implementing Hard Negative Mining Algorithm to consider only the most significant negative samples.
- Achieved a validation accuracy of 97.3%.
- Technologies used: MATLAB, Machine Learning.

ACHIEVEMENTS & EXTRA-CURRICULARS

- Runners up for the Overall Best Project (Auto-scaling of Application Servers) sponsored by Calsoft and domain winners for the Best Project at 'Impetus and Concepts (INC)', a renowned technical festival.