Subhashree Radhakrishnan

Curriculum Vitae

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Passionate coder with solid Hands-on/Research experience in the domain of Deep Learning, Machine Learning and Computer Vision. Seeking semester co-op(Spring 2018)/ Full time position in the pertinent field(starting May 2018)

Education

2016–2018 **Masters in Computer Engineering** , *Virginia Polytechnic Institute and State University*, Blacksburg, ***3.6***/*4*.
Courses(sem1): Artificial Intelligence,Computer Vision, Advanced Machine Learning
Courses(sem2): Advanced Computer Vision, Stochastic Signals and Systems
Courses(sem3): Deep Learning, Information Retrieval

2012–2016 **Bachelor in Electrical and Electronic Engineering**, *Amrita School Of Engineering*, Coimbatore,India, ***9.26***/*10*.
- Was awarded the **Outstanding Student Award** for 2014-2015
- Secured Academic proficiency award for topping the department [2013-2015]

Technical Skill-set

Software Modules/packages: Tensorflow, Keras, PyTorch, OpenCV, OpenGL, Sci-kit, Matplotlib, Pandas, Hadoop, MATLAB
Programming: C,C++,Python,R
Tools: PyCharm, IntelliJ IDEA, Git, Vim

Work Experience

August-Dec 2017 **Unmanned Systems Lab** –***Graduate Research Assistant***.
- DuPont Project - Deploying computer vision on aerial imagery to efficiently classify the different types of weeds.
- NSF Funded IUCRC project - Developing real-time image stitching algorithm on ground vehicles. To build an end-end system to plan the optimal cost map based on the classified stitched terrain .

May-July 2017 **STEP.AI** –***Summer Intern***.
- Experimented Reinforcement Learning Algorithms including Policy Gradient, DQN, Actor - Critic etc. for robotics arm manipulation. Worked on Tensorflow/ PyTorch platform.
- Implemented a Tetris game prototype with hyper-parameter tuning and modified loss function.
- Built an object detection model by building a dataset using YOLO, OpenCV and V-REP simulator.

Research and Projects

Spring 2017 **SPATIO TEMPORAL OBJECT LOCALIZATION IN VIDEOS USING REFERRAL EXPRESSIONS** – ***Research Thesis under Prof.Jia Bin Huang***.
- Work on Natural Language grounding in videos. This project aims in object localization in videos using Referral Expressions.

Spring 2017 **SEMI-SUPERVISED CYCLIC GAN FOR DOMAIN ADAPTATION[PyTorch]** –***Advanced Computer Vision Course***.
- In this project, semi-supervised approach was experimented by adding few labelled images to training using the cyclic GAN architecture with pix-pix classifier.

Fall 2016 **FIGHT DETECTION IN VIDEOS[Matlab/ Caffe]** – ***Project as a part of computer vision course***.
- Performance comparison of different feature extractions and classifiers including STIP, Optical flow and CNN. A pre-trained model of ResNet was used and used Theano.

Spring 2017 **KAGGLE IMAGENET CLASSIFICATION Contest[Tensorflow]** – ***Project***.
- Had achieved 93% accuracy on classification of three imagenet classes.
- Trained the model using Googlenet, VGG Net and Convnet models with additional changes such as adding batch normalization, Without pooling, Early stopping and hyperparameter tuning. Performance was highest by retraining the last layer of V3 inception network which was pre-trained on Imagenet.

Spring 2017 **Walk Cycle Recognition using IMU** – ***Project***.
- Collected angular velocity and acceleration data using Physics tool app on mobile phone when a person walks. Used signal processing techniques and SVM classifier to identify person based on walk cycles.

Spring 2017 **SELF DRIVING CAR – BEHAVIORAL CLONING UDACITY CHALLENGE [Keras-Tensorflow]** .
- Implemented CNN-LSTM model to predict steering angle by taking in a series of angles, image frames as input.

Fall 2016 **PACMAN PROJECT AI [Python]** –***Course-project***.
- Built Pacman game involving minimax, alpha-beta pruning, expecti-max and reinforcement learning.

Fall 2016 **COMPUTER VISION [Matlab]** –***Course Assignments***.
- Scene Classification using Bag of Words and SVM
- Camera pose estimation,Object Instance Recognition, Epi-polar, SFM based projects.

Feb-July2016 **DEVELOPING INTELLIGENT CONTROL AND AUTOMATED APPLICATIONS IN BIO-HYBRID SYSTEMS – Undergraduate Exchange Student, University Of Paderborn, Germany**.

- Automated Gardening system and day night cycle using Raspberry pi, rpi camera and RF modules
- Used Image Processing techniques to track the tip of the plant and developed genetic algorithm for deciding on direction of light to be turned ON.

May – July 2015 **SPEECH EMOTION RECOGNITION** ***–Summer Research Intern, Indian Institute Of Sciences India***.

- Devised a hybrid algorithm of LPC, LPCC, OSALPC, and LFCC and used GMM classifier for emotion recognition that achieved improved recognition rate.
- **PUBLICATION:** Paper titled **'Speech Emotion Recognition: Performance Analysis Based on Fused Algorithms and GMM Modelling'** published in Indian Journal Of Science and Technology (Scopus Indexed)