

Subhashree Radhakrishnan

Curriculum Vitae

3500 B,Fox-ridge Apartments

VA-24060

United States

+1 (540) 449 8954

subha@vt.edu

<https://sites.google.com/a/vt.edu/subhashreeradhakrishnan/>

<https://github.com/subhashreeradhakrishnan>

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 (starting May 2018) in the pertinent field

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**.
o Was awarded the **Outstanding Student Award** for 2014-2015
o 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, MATLAB

Programming: Python, C++, C

Tools: Git, Subversion, Vim

Work Experience

- August-Dec 2017 **Unmanned Systems Lab – Graduate Research Assistant.**
o DuPont Project - Implemented HOG based feature extraction and multi-class SVM to classify different types of weeds. Used PCA to reduce dimensionality for improved performance. Working on unsupervised methods such as K-means clustering to perform classification.
o 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.**
o Experimented Reinforcement Learning Algorithms including Policy Gradient, DQN etc. for robotics arm manipulation. Worked on Tensorflow Keras/ PyTorch platform.
o Implemented a Tetris game prototype with hyper-parameter tuning and modified loss function.
o Built an object detection model by building a dataset using YOLO, OpenCV and V-REP simulator. Created an API to poll the environment variables for V-REP.

Research and Projects

- May2017 - May 2018 **SPATIO TEMPORAL OBJECT LOCALIZATION IN VIDEOS USING REFERRAL EXPRESSIONS – Masters Research Thesis under Prof.Jia Bin Huang.**
o This work aims in developing a multi-modal embedding to retrieve spatio-temporal video segments based on a query.
o Had implemented Localization in Images using Faster RCNN and skip-thought model based on a query. Obtained 97% accuracy. Used Tensorflow - Keras. Involved hyper-parameter tuning, selecting the best optimization technique.and debugging using tensorboard.
o Working on video domain for object tracking.
- Spring 2017 **SEMI-SUPERVISED CYCLIC GAN FOR DOMAIN ADAPTATION[PyTorch] –Advanced Computer Vision Course.**
o In this project, semi-supervised domain adaptation approach was experimented by adding few labelled images to train the cyclic GAN architecture with pix-pix classifier.
- Summer 2017 **SELF DRIVING CAR – BEHAVIORAL CLONING UDACITY CHALLENGE [Keras-Tensorflow] .**
o Implemented CNN-LSTM model to predict steering angle by taking in a series of angles, image frames as input.
o Had predicted throttle, brake and acceleration by implementing multi-regression layer and a softmax for brake.
- Spring 2017 **KAGGLE IMAGENET CLASSIFICATION Contest[Tensorflow] – Project.**
o Had achieved 93% accuracy on classification of three imagenet classes.
o 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.
- Fall 2016 **FIGHT DETECTION IN VIDEOS[Matlab/ Caffe] – Project as a part of computer vision course.**
o Performance comparison of different feature extractions and classifiers including STIP, Optical flow and CNN. A pre-trained model of ResNet on NSFW dataset was used to do transfer learning on Hockey Fight dataset.

- 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 detect walk cycles.
- Fall 2016 **COMPUTER VISION [Matlab] –Course Assignments.**
- Scene Classification using Bag of Words and SVM
 - Camera pose estimation, 3D reconstruction, Epi-polar, SFM based projects.
- July 2015 **SPEECH EMOTION RECOGNITION – Summer Research Fellow, Indian Institute Of Sciences India : Advisor - Prof.Dr.G.N.Rathna.**
- 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)