Suriya Narayanan Lakshmanan

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EDUCATION

CMU, ROBOTICS INSTITUTE
Master's in Computer Vision
Dec 2018 | Pittsburgh, PA
Cum. GPA: 3.56/4.0

NIT, TIRUCHIRAPPALLI
Bachelor of Technology in Electrical and Electronics Engineering
May 2014 | Tiruchirappalli, India
Cum. GPA: 8.8 / 10.0

COURSEWORK

Intro to Machine Learning
Intro to Computer Vision
Math fundamentals for Robotics
Visual Learning and Recognition
Deep Reinforcement Learning

Algorithms and Data Structures
Operating Systems
Object Oriented Programming
Digital Signal Processing

SKILLS

PROGRAMMING
C • C++ • Python • Matlab
OpenCL • LaTeX

LIBRARIES
OpenCV • Numpy • Keras • TensorFlow • scikit-learn

OPERATING SYSTEMS
Linux • Windows • TI sysBIOS • Android

PACKAGES
Eclipse • GIMP • Microsoft Office • Git

FRAMEWORKS
OpenCL • TI Vision SDK

EXPERIENCE

TEXAS INSTRUMENTS | Software Engineer
July 2014 - June 2017 | Bangalore, India

- Improved accuracy of TI CNN model for driver drowsiness detection by 2x
- Improved Adaboost classifier for object detection yielding 10% more true detections. *[Efficient object detection and classification on low power embedded systems, ICCE 2017]*
- Developed a set of Image Processing OpenCL kernels optimized for TI DSP. *[Understanding the Performance Benefit of Asynchronous Data Transfers in OpenCL Programs Executing on Media Processors, HiPC 2015]*
- Accelerated OpenCV using OpenCL, boosting performance by 3x over ARM A15
- Released the above accelerated functions as applications in TI Vision SDK

TEXAS INSTRUMENTS | Computer Vision Intern
May 2013 – July 2013 | Bangalore, India

- Improved an existing homography based Ground Plane Detection by 10%. *[Ground plane detection, Patent 2017]. [Improved ground plane detection in real time systems using homography, ICCE 2014]*

ACADEMIC PROJECTS

INTELLIGENT INPAINTING
October 2017 - November 2017 | CMU, Pittsburgh
Developed an application that removes a person from an image from a single click

NETWORK REGULARISATION FOR ALIGNED OBJECTS
September 2017 - October 2017 | CMU, Pittsburgh
Regualized deep networks using a developed technique that induces sparsity and speeds up computation

AUGMENTED REALITY
September 2017 – October 2017 | CMU, Pittsburgh
Created an AR application from scratch on Matlab

PANORAMA
September 2017 – October 2017 | CMU, Pittsburgh
Developed code for panorama creation from scratch on Matlab

SCENE CLASSIFICATION
September 2017 | CMU, Pittsburgh
Performed scene classification using Spatial Pyramid Matching from scratch

STRUCTURE FROM MOTION
January 2014 – April 2014 | NIT Tiruchirappalli, India
Developed Structure from Motion algorithm from scratch in C++

REAL-TIME SUDOKU SOLVER
August 2013 – August 2013 | NIT Tiruchirappalli, India
Created an android application that searches for sudoku mesh in its camera view and solves upon detecting one
Realtime Sudoku Solver on Play Store