

Suriya Narayanan Lakshmanan

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EDUCATION

CMU, ROBOTICS INSTITUTE

MASTER'S IN COMPUTER VISION

Advised by Prof. Srinivasa Narasimhan

Dec 2018 | Pittsburgh, PA

Cum. GPA: 3.83/4.0

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

Geometry based maths in Vision

Computational Photography

Algorithms and Data Structures

Operating Systems

Object Oriented Programming

Digital Signal Processing

SKILLS

PROGRAMMING

C • C++ • Python • Matlab

• OpenCL • \LaTeX

LIBRARIES

TensorFlow (Python and C++) •

PyTorch • OpenCV • Numpy • PCL •

OpenAI gym • scikit-learn

OPERATING SYSTEMS

Linux • Windows • Android

OTHER SOFTWARE

Git • Microsoft Office • GIMP

PUBLICATIONS

- Improved ground plane detection in real-time using homography, ICCE
- Understanding performance benefit of asynchronous data transfers in OpenCL programs executing on media processors, HiPC

EXPERIENCE

SAMSUNG RESEARCH AMERICA | COMPUTER VISION RESEARCH INTERN

Think Tank Team

May 2018 - August 2018 | Mountain View, USA

- Developed human pose datasets for proprietary sensors using unsupervised domain adaptation and trained human pose estimation network and developed a C++ application for deployment

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*]
- Accelerated a set of OpenCV functions using OpenCL and DSP which was released as part of TI Vision SDK. [*Understanding the Performance Benefit of Asynchronous Data Transfers in OpenCL Programs Executing on Media Processors, HiPC 2015*]

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

SMART RECONSTRUCTION

January 2018 - May 2018 | ILIM Lab, CMU, Pittsburgh

Reconstructed traffic from a single stationary camera using keypoint detection, tracking and geometric constraints while stabilizing the camera

LEARNING HIERARCHICAL POLICIES IN DYNAMIC ENVIRONMENTS

March 2018 - May 2018 | CMU, Pittsburgh

Developed an RL agent to quickly adapt to a dynamic environment with sparse reward

WEAKLY SUPERVISED OBJECT DETECTION

March 2018 - March 2018 | CMU, Pittsburgh

Implemented weakly supervised object detection algorithm: WSDDN

SCENE CLASSIFICATION

September 2017 | CMU, Pittsburgh

Performed scene classification using Spatial Pyramid Matching from scratch

DIGITAL ART USING SFM

October 2017 - November 2017 | CMU, Pittsburgh

Developed an application to create portrait effect from single camera using SFM and 3D segmentation

INTELLIGENT INPAINTING

October 2017 - November 2017 | CMU, Pittsburgh

Developed an application that removes a person from an image from a single click using pedestrian detection, semantic segmentation and exemplar inpainting