

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 (10-601)

Intro to Computer Vision (16-720)

Math fundamentals for Robotics (16-811)

Visual Learning and Recognition (16-824)

Deep Reinforcement Learning (10-703)

Geometry based maths in Vision (16-822)

Computational Photography (15-663)

Algorithms and Data Structures

Operating Systems

Object Oriented Programming

Digital Signal Processing

SKILLS

PROGRAMMING

C • C++ • Python • Matlab

• OpenCL • \LaTeX

LIBRARIES AND FRAMEWORKS

TensorFlow (Python and C++) •

PyTorch • OpenCV • Numpy • PCL •

OpenAI gym • scikit-learn

OPERATING SYSTEMS

Linux • Windows • Android

OTHER SOFTWARE

Git • Microsoft Office • GIMP

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 | CMU, Pittsburgh

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

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

LIDAR PLUS IMU SLAM

February 2018 - March 2018 | CMU, Pittsburgh

Fused LIDAR with IMU by implementing hector slam with the IMU extension

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 machine learning and exemplar inpainting