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
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]*
- 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]*

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
Mentor: Prof. Srinivasa Narasimhan
January 2018 - May 2018 | CMU, Pittsburgh
Reconstructed traffic from a single stationary camera using keypoint detetion, 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