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

HDR, COLOR MATCHING AND TONEMAPPING
September 2018 - September 2018 | CMU, Pittsburgh
Created HDR images from non-linear and linear image stacks captured at exponentially varying exposures, corrected color using colorchecker and tonemapped the result

SMART RECONSTRUCTION
January 2018 - May 2018 | ILIM Lab, CMU, Pittsburgh
Reconstructed traffic from a single stationary camera using keypoint detetion, tracking and geometric constraints while stabilizing the camera

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 pedestrian detection, semantic segmentation and exemplar inpainting