SHASHANKA VENKATARAMANAN

e-mail: shashankv@Knights.ucf.edu
Github: https://github.com/shashankvkt

EDUCATION

Master of Science *2018 - Present*
University of Central Florida, USA CGPA : N/A
Computer Science

Bachelor of Engineering *2013 - 2017*
University of Mumbai, India CGPA : 8.13 /10.0
Department of Electronics and Telecommunication Engineering

RESEARCH & INDUSTRIAL EXPERIENCE

Indian Institute of Science, Banglore, India Guide - Dr. Soma Biswas
Research Assistant *June 2017 - June 2018*

· Worked on addressing the issue of low resolution heterogeneous face recognition across uncontrolled poses and variation in illumination and expression. Here, Low resolution faces from NIR spectrum are matched with high resolution faces from VIS spectrum using Deep learning along with sparse modeling and metric learning.

Hawkeye Unmanned Aircraft Systems, Georgia, USA Employer - Mr. Abe Piemme
Technical Consultant *March 2017 - Present*

· Working on the development of computer vision algorithms using drones to monitor suspicious activity, help locate missing persons, accident and crime scene documentation, as well as precision landing for immediate recharge of the UAV battery. These systems are being developed for use by Law Enforcement and Public Safety Agencies.

IIIT Hyderabad, India Guide - Dr. K Madhava Krishna
Research Intern *December 2016 - February 2017*

· Implemented multi-robot SLAM on HUSKY UGV using April tags for the task of pose-crossover. The major objective of this project was to merge pose graphs computed by 2 robots during exploration to make a global pose graph [code] [poster].

Flytbase Inc., India Guide - Mr. Pradeep Gaidhani
Intern *June 2016 - August 2016*

· Developed and tested an object detection and tracking algorithm using a 3-axis gimbal on a quad-rotor. The objective was to track the target based on shape and color, keep it at the center of frame, and keep the target within the proximity of the drone [blog] [code] [video].

PUBLICATIONS

· S.P. Mudunuri*, **S. Venkataramanan***, S. Biswas, **Dictionary Alignment with Re-ranking for Low Resolution VIS-NIR Face Recognition**, *IEEE Transactions on Information Forensics and Security*, **Accepted for Publication** (* denotes equal contribution).

· S.P. Mudunuri, **S. Venkataramanan**, S. Biswas , **Improved Low resolution heterogeneous face recognition using re-ranking**, *6th National Conference on Computer Vision, Patter Recognition, Image Processing and Graphics (NCVPRIPG), 2018, India* [paper].

· **S.Venkataramanan**, D. Kamble, A. Bairolu, A. Singh and R. Rao, **A novel heart rate and non-invasive glucose measuring device**, *6th IEEE Conference of Communication and Signal Processing (ICCSP), 2017, India* [paper].

RELEVANT COURSES

Core Courses	**Other Courses**
Linear Algebra	Machine Learning
Signals and Systems	Computer Vision
Random Signal Analysis	Algorithms and Data Structures (Prof. Bob Sedgewick) - Coursera
Operating Systems	
Discrete Time Signal Processing	
Single and Multi-variable Calculus	
Image and Video Processing	
Control Systems	

TECHNICAL STRENGTHS

Computer Languages	C/C++, Python, HTML, CSS, Shell Scripting
Software & Tools	MATLAB, Arduino, LaTeX, Caffe, PyTorch, OpenCV, ROS, OpenVX, Eagle

NOTABLE PROJECTS

Room Automation with Visitor Counting

· Developed a prototype involving a novel state machine algorithm capable of efficiently switching ON/OFF all appliances based on the occupancy of the room. [video].

Warehouse Management Robot

· Designed a robot for autonomous package classification in a warehouse to speed up delivery/packaging. Achieved a national rank 8 in the e-Yantra competition by Indian Institute of Technology, Bombay [video].

Feature Based Object Detection and Tracking

· Developed an object detection and tracking algorithm based on SIFT features and KLT tracker on the NVIDIA Jetson TX1 to be used on a quad-rotor for fast and efficient target tracking.

A Centralized Detachable Complaint Multi-Robot Agent

· Developed a GUI using ROS to create a centralized system capable of monitoring and controlling a multi-robot agent capable of staircase climbing [code].

Visual Servoing of Non-Holonomic Robotic System

· Involved in developing an algorithm capable of visually servoing a non-holonomic multi robot agent for autonomous attachment to enhance cooperative staircase climbing.

Medicheck Guide - Prof. Rama Rao and Dr. Arpit Rawankar

· Developed a cost-efficient,low power prototype capable of measuring heart rate and blood glucose in a non-invasive manner. The project received the highest marks (98/100) and was featured in the local newspaper : Maharashtra Times [article].

Shock Extraction from Schlieren Images

· Image Processing techniques such as median filtering, active contours etc. are used to extract shocks from Schlieren images to enable study it's effect on the mixing layers when air flows at a speed of 2 Ma and 1.2 Ma simultaneously.