BIKRAMJOT SINGH HANZRA

Phone Number: +412-313-1871 Email: bikramjothanzra@cmu.edu
Homepage: andrew.cmu.edu/user/bhanzra Blog: hanzratech.in
LinkedIn: linkedin.com/in/bikz05 Github: github.com/bikz05

OBJECTIVE

Interested in a full-time summer internship having prior experience in the field of Computer Vision, Machine Learning, Mobile Robotics, and Autonomous Navigation.

EDUCATION

• Carnegie Mellon University – Master of Science in Robotic Systems Development, School of Computer Science (2015 - present)
Courses - Machine Learning, Manipulation, Mobility, and Control, Systems Engineering, Introduction to Robotics Business
• PEC University of Technology – Bachelor of Engineering, Dept. of Electronics – **Silver Medallist** (2010 - 2014)
Courses - Neural Networks, Mechatronics, Object Oriented Programming, Operating Systems, Embedded System, Computer Architecture, Advanced Microprocessors, Digital Signal Processing.Virtual Instrumentation, VLSI Design, Data Communication.

PROJECTS/WORK EXPERIENCE

1 Automatic Cameraman for Dynamic Video Acquisition of Football Match

Research Intern – IRSEEM, France (January 2013 - July 2013)
Designed a system for dynamic video acquisition of football match. Raw frames from static cameras were processed to track the position of players in the field. The tracking data was then used to control an array of Pan Tilt Zoom cameras.
• Research Paper won **Best Paper Award** at *2013 IEEE Second International Conference on Image Information Processing.*

2 Autonomous Boat

MRSD Project – NREC-CMU, USA (September 2015 - present)
Currently working on perception algorithm to track dynamic obstacles like other boats and identify static obstacles like shores using RADAR data, and a path planning algorithm for navigating a boat autonomously.

3 Computer Vision and Machine Learning Projects

Open-Source Projects (August 2014 - present)
• Object Detector Framework using HOG and SVM written in Python using OpenCV and sklearn
• Interactive Object Tracking written in Python using Dlib and OpenCV
• Image Classification framework based on Bag of Words approach written in Python
• Face Recognition using OpenCV
• Handwritten Digit Recognition written in Python using scikit-learn and OpenCV
• Texture Matching using Local Binary Patterns (LBP) written in Python using scikit-image
The source code of all the above projects is available at github.com/bikz05.

4 Object Transportation Task by a Mobile Robot following a Human

Final Year Project – PEC University of Technology (January 2014 - May 2014)
Build a robot which could track and follow the path of a human using Microsoft Kinect and carry a load from source to destination by using a gripping mechanism.
• Awarded **2nd prize** in PEC Open House 2014 and was presented at **Intel Asia Innovation Summit 2014**.

5 Robotics Competitions

Student Member – PEC Robotics Society, India (August 2010 - May 2014)
General Secretary – PEC Robotics Society, India (August 2013 - May 2014)
Participated in a number of robotics competitions in which I worked in the domains of Manipulations, Computer Vision and Path Planning. Was awarded collegex
• 1st prize in robotics event "Ocean's Fourteen" at IIT Kanpur Technical Fest in 2012.
• 1st prize in robotics event "I-Strike" at BITS Pilani Technical Fest in 2012.
• 2nd prize in Industrial Image Processing event "Packman" at IIT Chennai Technical Fest in 2011.

TECHNICAL SKILLS

• Programming Languages – Python, C++, Mathworks Matlab/GNU Octave, NI LabView
• Libraries and Miscellaneous Softwares – ROS, Gazebo, OpenCV, OpenNI, vim, git, numpy, LaTeX
• Hardware Skills – 8051, AVR, PIC, Arduino, 8085/86, MS Kinect, PTZ Cameras