



Machine Learning, Statistical Techniques in Robotics, Computer Vision, Camera Calibration, 3D Reconstruction, Robotics & Manipulation, Systems Engineering Medical & Assistive Technologies, Wearable Technology, 3D Modelling & Simulation, CAD & Product Design.

EDUCATION

August'16 – December'17



Carnegie Mellon University, Pittsburgh, USA
Master of Sc. In Robotic Systems Development (MRSD)
Expected : December 2017
GPA: 3.62/4.00

June'12 – July'16



VIT University, Vellore, IN
B.Tech, Electrical and Electronics Engineering (EEE)
CGPA: 9.28/10
Rank 13/239 (95 percentile)

RELEVANT COURSE-WORK

- Applied Machine Learning
- Statistical Techniques in Robotics
- Computer Vision
- Geometric Based Methods in CV
- Robot Autonomy
- Biomechanics & Motor Control
- Manipulation, Mobility & Control
- Systems Engineering

SKILLS

Machine Learning, Computer Vision, Robotics & Manipulation, Embedded Systems, Analog Circuit Design, PCB design, CAD, Graphic Designing, Fabrication

- **Software/Utility/Framework/Simulation:** Arduino IDE, Atmel Studio, Proteus(ISIS/ARES), Keil µVision IDE, MATLAB, Octave, NI LabVIEW, ABB Robot Studio, ROS, AEROTECH:A3200 Motion Composer, WEKA, LightSide.
- **Programming/Scripting:** Python, MATLAB, Octave, C, C++, HTML5.
- **CAD:** Blender3D, SolidWorks, EagleCAD, Fritzing.

HONORS

Riga Technical University, LV

March'16 - July'16

Erasmus+ KA1 Mobility Program: Faculty of Electronics & Telecommunications

An EU(European Commission) sponsored student exchange program. Completed Bachelor's Thesis on *Bio-inspired Walking in Robots*.

WORK HIGHLIGHTS

Proto Innovations, US

May'17 – Dec'17

Summer Internship & Independent Study

Machine Learning based Slip Estimation on NASA Planetary Rover:

Applied Machine Learning Engineer & Co-Systems Engineer

Real-time Slip Estimation on NASA Planetary rovers using various Supervised Machine Learning Models deployed using ROS.

Keywords: Python, ROS, Scikit-Learn, WEKA, LightSide.

Oculus Research
Pittsburgh, US

August'16 – May'17

MRSD Capstone

Multi-Sensor Calibration (Camera Calibration):

Automation & Control Engineer, Simulation Engineer, Calibration Engineer

Autonomous and high-speed online calibration of multiple cameras for 3D reconstruction.

Keywords: AEROTECH, ABB, Blender 3D, Python, MATLAB, A3200 Controllers.

VIT University, IN

August'15 – November'15

Course Project

DANI – Robotic Hand:

Electrical and Mechanical Engineer

Dextrous, Anthropomorphic and Intelligent (DANI) robotic hand with adaptive grasping.

Dept. of Science and
Technology, IN

February'14 – August'15

Research Project

Fuel Level and Quality sensor:

Electrical Engineer, Sensing Engineer & Independent Researcher.

Capacitance based fuel level sensor with anti-slosh and error reducing algorithm.

Johnson Controls, IN

May'14 – July'14

Summer Internship

Building Management Systems:

Automation Engineer, Electrical Engineer

Worked on networked controllers for HVAC/R systems. Familiarization with proprietary reporting tool EDART.

BAJA SAE INDIA

January'14 – April'14

Collegiate Team

Data Acquisition (DAQ):

Circuit & Sensor Designer, Electrical Engineer

Model, design, test and implement a on-board DAQ system to map gear ratios of the VIT University's ATV's CVT in real time.

RELEVANT SIDE/COURSE PROJECTS

Robotic Sonic Drilling using Multi Armed Bandits as Drill Agents(Simulation) – OCR using Deep Networks – 3D Face Tracking & Land Mark Detection – Optical Flow (Inverse Lucas Kanade) – Image feature detection(BRIEF-RANSAC) – Extended Kalman Filter-SLAM(2D Robot) – Scene Classification(Spatial Pyramid Matching) – Musical Instrument Recognition(LVQ – Clustering – ANN) Bazooka(Spud Cannon) – Stun Gun – Grid Follower Bot – Maze Solving Robot – SAE Aero Design East

HACKATHONS

- **Make-a-thon 2014, Team Wi-Pi; Electrical Engineer & Product Designer**
Wi-Pi, a portable and efficient RaspPi based voice assistant with special modules that can help blind people get access to news and other media.
- **Prototype 2014, Team Pineapple; Project Leader, Electrical Engineer**
Nixie Proto, an ATmega32 based portable array of sensors that can test for water quality, including bacterial contamination by utilising Impedance Spectroscopy and a Neural Network based classifier.
- **Jugaaad-a-thon 2015, Team Aceso; Project Leader, Electrical Engineer**
Early detection of Maternal Sepsis: Designed and built a smart belt which could monitor all the vital parameters of a pregnant mother and if the threshold was violated then an alarm would be raised. (ECG monitoring : Heart rate and B.P., Body Temperature)

RESPONSIBILITIES

- **Oculus Research Pittsburgh; Project Manager(Fall 2016):** MRSD Capstone project.
- **IEEE – Electron Devices Society; Graphic Designer, Electronics Engineer :** VIT University Student Chapter.
- **Flying INC.; Technical Division, Electrical Dept. :** SAE Aero Design – East : Collegiate Design Team – building fixed wing aircrafts.
- **Team Kshatriya; Technical Division, Electrical Dept. & Graphic Designer :** BAJA SAE INDIA : Collegiate Design Team – building All Terrain Vehicles (ATV).