

EDUCATION:

Worcester Polytechnic Institute (WPI), Worcester, MA, USA
Master of Science in Robotics Engineering, CGPA: 4.00/4.00

August 2017 - May 2019
(expected)

Symbiosis International University (SIU), Pune, India
Nanyang Technological University (NTU), Singapore (Semester Exchange)
Bachelor of Technology in Mechanical Engineering, CGPA 3.747/4.00

June 2013 - May 2017
August 2016 - December 2016

SKILLS AND CERTIFICATION:

Programming languages	C++, Python, MATLAB, Simulink, Buzz, LATEX, HTML
AI Frameworks	TensorFlow, Keras, PyTorch ^c , MXNet, Gluon, MATLAB, Caffe, Theano, ABB Robot Studio, ARGoS, ROS
Design Software	Gazebo, MoveIt, RViz, PTC Creo, AUTOCAD, CATIA, Pro/E, Solidworks, ANSYS, NX Siemens, Sketch-up
Computer Skills	Cura, Assembly Programming System, Standard Time Data System, Arduino, Microsoft Office
Relevant Courses	Foundation of Robotics, Synergy of Human and Robotic System, Deep Learning for Advance Robots, Robot Control, Robot Dynamics, Swarm Intelligence, Humanoid Robotics ^c , Directed Research - Speech and Language Processing (NLP) ^c , Computer Vision ^c , System Engineering.

EXPERIENCE:

Neurala, Inc., Boston, USA
Research Engineer | Internship

May 2018 – December 2018

- Implemented dataset creation, transfer learning, training neural networks and device testing for tasks including video segmentation, semantic/instance segmentation, object detection, and classification using TensorFlow, Keras, MXNet, Caffe.
- Deployed semantic segmentation model in specialized embedded hardware with compression techniques as well as optimizing neural networks to run efficiently on edge device for the World's leading non-US based mobile company.
- Developed novel methods and new architectures to improve the quality of image and video processing for scientific development of customer facing technology demos and contractual deliveries.

General Motors India Pvt. Ltd, Pune, India
Project Trainee | Internship

December 2015 - June 2016

- Improved productivity by introducing 13 industrial robots and line balancing.
- Improved more than 120 Standard Operation Sheet based on time study analysis, implemented using STDS and APS software.
- Improved Hours Per Unit (HPU) with an increment in utilization percentage from 79% to 90%, value-added work from 59% to 62% and decrement in over speeding from 25% to 11%.

PUBLICATION:

Shastri, A.S., Jagetia, Aishwary, Sehgal, A., Patel, M., Kulkarni, A.J.: "Expectation Algorithm (ExA): A Socio-inspired Optimization Methodology", in Kulkarni, A.J., Singh, P.K., Satapathy, S.C., Ali, H.K., Tai, K. (Eds.): Socio-cultural Inspired Metaheuristics, (In Press: Studies in Computational Intelligence, 2019) Springer.

PROJECTS:

Predicting Grade of Road for Autonomous Vehicles Using Supervised Deep Learning, WPI

August 2017 - December 2017

- Led the project, with successful implementation of the model in real time grade evaluation.
- Developed a deep convolutional neural network architecture using Keras with TensorFlow backend, to train the labeled dataset of Inertial measurement unit (IMU) and Global positioning system (GPS) readings.

Design of a low-cost robotic system to aid in the rehabilitation of stroke patients, WPI

August 2017 – December 2017

- Led Mechanical work stream of Haptic device, worked in CAD modeling, 3D printing and Hardware systems.
- Designed a haptic device with 6-DOF system along with the implementation of Dynamic Motion Primitives (DMP), Motion Capture (MO-CAP) system and newly developed rehabilitation game.

Robotic Control of a Surgical Laser Waveguide using ABB Robot, AIM Lab, WPI

January 2018 – April 2018

- Control of the laser position, with the development of motion primitives for laser scanning and focus adjustment on tissue.
- Simulation on ABB Robot Studio and Hardware implementation using GUI-MoveIt-ROS communication channel.

Occlusion-Based Cooperative Transport with a Swarm of Mobile Robots, NEST Lab, WPI

March 2018 – April 2018

- Proposed and simulated a method to overcome concavity in the objects by concave filling using mobile robots (Khepera IV).
- Implemented an occlusion based collective transport using swarm of mobile robots (Khepera IV) in a decentralized manner.

Adaptive Trajectory Control for a Robotics Arm Subject to Varying Load, WPI

March 2018 – April 2018

- Examined two advanced Adaptive Control methods of a manipulator robot carrying a time varying payload.
- Compared both the methods with detailed analysis and various experimentation, discussing of pros and cons of each.

[Ongoing Research Project] Intoxication Detection from Audio Using Deep Learning, WPI

January 2019 – Present

- Exploring various approaches including classification using raw acoustic signals with the help of features extraction techniques, crafting deep learning architectures, transfer learning for analysing the Alcohol Language Corpus (ALC) using Tensorflow, PyTorch.