AISHWARY JAGETIA

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EDUCATION:

Worcester Polytechnic Institute (WPI), Worcester, MA, USA **August 2017 - May 2019** (expected)
Master of Science in Robotics Engineering, GPA: 4.00/4.00

Symbiosis International University (SIU), Pune, India **June 2013 - May 2017**
Nanyang Technological University (NTU), Singapore (Semester Exchange) August 2016 - December 2016
Bachelor of Technology in Mechanical Engineering, GPA 3.747/4.00

SKILLS AND CERTIFICATION:

Programming languages	C++, Python, MATLAB, Simulink, Buzz, LATEX, HTML
AI Frameworks	TensorFlow, Keras, PyTorch[L], MXNet, Gluon, MATLAB, Caffe, Theano, ROS, ABB Robot Studio, ARGoS
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, 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 , Directed Research - Speech and Language Processing (NLP) [L], Computer Vision [L], System Engineering.

EXPERIENCE:

Research Engineer Intern, Neurala Inc., Boston, MA, USA **May 2018 – December 2018**

- Implemented transfer learning, pre-training, training neural networks, device testing (using Android Studio) and crafting new architectures for tasks including video segmentation, semantic/instance segmentation, object detection, and classification. Designed and debugged a unified training pipeline in Python for TensorFlow (TF Slim), Keras, MXNet, and Caffe frameworks.
- Deployed semantic segmentation model in specialized embedded hardware with compression techniques as well as preparing model by optimizing neural networks to run efficiently on edge device for the World's leading non-US based mobile company.
- Improved and benchmarked a novel one-shot-learning method for object detection and segmentation using python, GluonCV. Generated nearly 200k images with synthetic data generation technique using MATLAB and Brainbuilder image tagging tool.
- Improved the quality of image and video processing for scientific development using computer vision techniques of customer facing technology demos and contractual deliveries.

Project Trainee, General Motors India Pvt. Ltd, Pune, India **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**, et al.: "Expectation Algorithm (ExA): A Socio-inspired Optimization Methodology", in Kulkarni, A.J., et al. (Eds.): Socio-cultural Inspired Metaheuristics, (In Press: Studies in Computational Intelligence, 2019) Springer.

PROJECTS:

[Ongoing Directed Research] Intoxication Detection from Audio Using Deep Learning | Emmanuel Agu, WPI **Spring 2019**

- Detecting alcohol intoxication from audio using classification and regression on raw acoustic signals with the help of transfer learning, data pre-processing, features extraction techniques for analysing the Alcohol Language Corpus (ALC).
- Crafting deep learning architectures (such as combination of CNNs, RNNs, LSTMs, BiLSTMs, ATTs), using Tensorflow, PyTorch.

Occlusion-Based Cooperative Transport with a Swarm of Mobile Robots |Carlo Pinciroli (NEST Lab), WPI **Spring 2018**

- Proposed and simulated a method using Buzz, ARGoS to overcome concavity in the objects by concave filling with mobile robots.
- 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 | Jie Fu (CIRL Lab), WPI **Spring 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.

Robotic Control of a Surgical Laser Waveguide using ABB Robot | Gregory Fischer (AIM Lab), WPI **Spring 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 on ABB IRB 120 using GUI-MoveIt-ROS communication channel.

Predicting Grade of Road for Autonomous Vehicles Using Supervised Deep Learning | Carlos Morato, WPI **Fall 2017**

- Led the project, with successful implementation of the model in real time grade of the road evaluation.
- Developed a deep convolutional neural network (CNN) 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 | Zhi Li (HiRo Lab), WPI **Fall 2017**

- Led Mechanical work stream of Haptic device, worked in CAD modeling, 3D printing and Hardware systems.
- Designed a robotic 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.