Smriti Gupta

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EDUCATION:

University of Maryland — **College Park, MD**
M.Eng-Robotics — Expected 05/2021
GPA-3.8
Relevant Coursework: Robot Control; Robot Modeling(Position and Velocity Kinematics, Grasping); Robot Programming(C++ and ROS).

Ujjain Engineering College — **Ujjain, India**
BE-Electronics and Communication — 06/2018

- First Class Honors, among the top 2% of the class

SKILLS AND CERTIFICATIONS:

- **Software Tools:** C, C++, Python, Embedded C, VHDL, MATLAB, Octave, V-Rep, AI2 THOR, ROS, OpenAIgym.
- **Hardware Skills**: Arduino, AT mega 328 (AVR microcontroller), PIC Microcontroller.
- **Certification Courses**- Machine learning with Python and MATLAB, Deep Neural Networks with Keras, CNN with Tensor Flow.
  - **Technologies**- Numpy, Scipy, SciKit Learn, Pandas, Matplotlib, Keras, Pytorch, Tensor Flow, OpenCV
- Estimation in Wireless Communication (MIMO/OFDM).

Technical Experience:

Meta Cognitive Lab — **University of Maryland**
Research Assistant — 08/2019-Present

- Working on implementing "commonsense in artificial intelligence" with "ALMA CARNE".
- Validating the decisions through the simulator.

Edo Square Pvt. Ltd. — **Indore, India**
Robotics Intern — 11/2018 – 12/2018

- Worked on Arduino with embedded C and devised prototypes in a team of 4.
- Collaborated with the marketing team and revised old prototypes.

Airport Authority of India (DABH) — **Indore, India**
Intern — 05/2017- 06/2017

- Calibrated and maintained instruments in the Communication, Navigation, and Safety Aids department for runway and antennas alongside full-time employees.
- Reinforced airport surveillance and automation required for the safe takeoff, landing, and fight in the air.
- Monitored the RADAR data for communication with flights and other airports.

PROJECTS:

Classifier - IBM Watson/ Machine learning

- Used classification algorithms like KNN, Decision tree, SVM and Logistic Regression and build a model to fit the data.
- Calculated the accuracy with F1 score, Log-Loss and Jaccard Index.

Regression Model - IBM Watson/ Keras

- Used deep neural networks, with CNN and regression for the data of "Concrete's compressive strength".
- Modeled and tested the data performance with various optimizers and a varying number of epochs.

Controller Designing based on LQR and LQG - Python

- Tested the observability and controllability of double pendulam on a moving cart.
- Fabricated LQG and LQR for linearized and non-linearized system, stablized it in 20 sec.

Position-Based Impedence Control Method for Bionic legged Robots - MATLAB/Simulink

- Tested the observability and controllability of HDU for bionic legged robots.
- Achieved impedence control by achieving stiffness and damping control.

KUKA robot- V-REP/simulation

- Modeled and validated the forward and inverse Kinematics of the KUKA robot in V-REP simulation software.
- Developed and tested position and motion control algorithms using MATLAB.
- Implemented Path planning using FK for object scanning purposes.

Robot Arm

- Solved the forward and inverse kinematics of the arm and validated it on VREP.
- Implemented path planning for pick and drop.

Biometric Electronic Voting Machine

- Fabricated Biometric Electronic Voting Machine programmed on Arduino which is unlocked by fingerprint only, eliminated discrepancies involved in previous machines and removed electoral frauds.