DEVESH DATWANI

ROBOTICS ENGINEER
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OBJECTIVE

Ms in robotics engineering student at the Worcester Polytechnic Institute seeking full time co-op roles in robot perception

SKILLS

LANGUAGES Python 3+ • MATLAB • C/C++ • HTML-CSS
SOFTWARE STACK ROS 1 & 2 • Git • OpenCV • TensorFlow • AWS • Django & Flask • Vim • Linux • SolidWorks • AutoCad
HARDWARE STACK Arduino Uno • Raspberry Pi 3+
CERTIFICATIONS Python Programming • Robotics: Aerial Vehicles • Applied Machine Learning • Introduction To Self Driving Cars

EDUCATION

MASTER OF SCIENCE IN ROBOTICS ENGINEERING
WORCESTER POLYTECHNIC INSTITUTE | WORCESTER, MA
AUG 2021 - MAY 2023
Key Courses: Machine Learning • Computer Vision • Artificial Intelligence • AI For Autonomous Vehicles • Robot Dynamics

BACHELOR OF ENGINEERING IN MECHANICAL ENGINEERING
APSIT MUMBAI UNIVERSITY | MUMBAI, INDIA
AUG 2014 - MAY 2018
Notable Achievement: Received “Young Innovator Award” for experiments with Plasma Actuators at the ICASTe conference

RELEVANT EXPERIENCE

DESIGN & PERCEPTION ENGINEER
SPACE GOAT (WORCESTER POLYTECHNIC INSTITUTE)
SEP 2021 - JAN 2022 | WORCESTER, MA

- Competed at the NASA Extreme Terrain Challenge 2022 to build a Mars rover while representing Worcester Polytechnic Institute
- Actively contributed in the design of a rover that tackles the challenges of traversing the Martian surface
- Integrated sensors with the rover and contributed to the firmware code for rover-environment perception

ENGINEERING PROJECTS

HUMAN POSE ESTIMATION WITH CNN [GITHUB]
MAR 2022 - MAY 2022 | WORCESTER POLYTECHNIC INSTITUTE

- Implemented the DeepPose paper to build a convolution neural network to estimate human body pose in 2 dimensions
- Created a TensorFlow pipeline to fetch and load the FLIC dataset and train an AlexNet on a Google Colab notebook
- Observed convergence after ~ 100 epochs and recorded mean squared error values of ~ 400

TRAFFIC SIGN DETECTION WITH MASK R-CNN [GITHUB]
SEP 2021 - DEC 2021 | WORCESTER POLYTECHNIC INSTITUTE

- Implemented adaptations to the Mask R-CNN network to enhance its performance in detecting traffic signs
- Augmented a dataset of 10,000+ traffic sign images to create motion blur and condensation effect to improve model performance
- Helped enhance mAP values of the r-cnn model from 0.05 to 0.25 after training the model on the augmented dataset

AERIAL VEHICLE DESIGN AND FLIGHT TESTING [PROJECT DOC]
2011 - 2020 | MUMBAI, INDIA

- Designed, fabricated and flight-tested remotely operated fixed-wing planes and quad copters
- Experimented with different power-plant, wing, composite material and electronic configurations
- Gained hands on experience with aerodynamics, electronics and fabrication involved in aerial vehicle design after 200+ flights

AIR FLOW INDUCTION WITH PLASMA ACTUATORS (APPLIED PATENT) [PROJECT VIDEO]
2017 - 2018 | ASPIT MUMBAI UNIVERSITY

- Designed and led a research project on plasma actuators to induce air flow without the use of any moving elements
- Designed and fabricated a plasma actuator inside hollow pipes powered by a high voltage-high frequency transformer
- Observed & recorded wall-bounded jet air flow of ~ 9000 litres/hr during experiments at the aerospace department of IIT, Bombay