Shambhuraj Mane

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EDUCATION

WORCESTER POLYTECHNIC INSTITUTE
MS MECHATRONICS, ROBOTICS AND AUTOMATION ENGINEERING
August 2023 | Worcester, MA

SAVITRIBAI PHULE PUNE UNIVERSITY
BE MECHANICAL ENGINEERING
April 2020 | Pune, India
Cum. GPA: 8.12/10

COURSEWORK

UNDERGRADUATE
Mechanical System Design Engineering
Mechanics
Dynamics of Machinery
Linear Algebra
Mechatronics
Computational Fluid Dynamics
Finite Element Methods
Product Design & Development

ONLINE
ROS: Motion, OpenCV, Localization, Navigation and SLAM
Modern Robotics:: Foundations of Robot Motion, Robot Kinematics
Certified SolidWorks Professional: Mechanical Design, Advanced Surfacing, Adv. Drawing Tools

SKILLS

SOFTWARE
• ROS • Python • pandas/scikit-learn
• openCV • Gazebo • Solidworks
• CATIA • Git

APPLIED
• Robotics • Raspberry Pi • Machine Learning • Computer Vision

EXPERIENCE

INFOSYS LIMITED | SENIOR SYSTEM ENGINEER
June 2022 - July 2023
- Led 5 member team and analyzed technical information to develop 150+ engine manuals and service bulletins.
- Created automated tools for consumables and spares used in inspection tasks to improve process efficiency by 15%.

INFOSYS LIMITED | SYSTEM ENGINEER
Jan 2021 - June 2022
- Collaborated with a team of 10 and delivered 500+ production orders (POs) in CATIA and simulation in SAP 3D Visual Enterprise Viewer.
- Attended machine learning specialized sessions including logistic regression, decision tree, naive bayes and clustering using python.

PROJECTS AND RESEARCH

BIONIC ARM | PROSTHETICS, BIONICS, MACHINE LEARNING
Aug 2018 - Mar 2020 | La Fondation Dassault Systèmes
- Designed a mechanical arm with 14 Degrees of freedom in the Solidworks platform to create a 3D printable prototype.
- Collected datasets of 10k+ sample points per person from 3 human subjects using MyoWare Muscle Sensors.
- Trained machine learning model and achieved an average of 89% accuracy in predicting pinch and fist grasp.

REAL TIME CLOUD SENSING (RTCS) | DATA ANALYSIS
Oct 2018 - Aug 2019 | IEEE society
- Originated the RTCS idea and published the findings in the International Journal of Advanced Science and Technology.
- Acquired data from IR, humidity and temperature sensor using Raspberry Pi and assigned timestamp and zonal coordinates using GPS module for further predictions.
- Aggregated, visualized and analyzed live data streams in the cloud server using ThingSpeak.

COURSE PROJECTS

BALL TRACKING | ROS, OPENCV, COMPUTER VISION
- Detected a ball using HSV thresholds for color filtering.
- Applied contour detection on video input with openCV and ROS using CvBridge.

AUTONOMOUS ROBOT | ROS, URDF, LOCAL PATH PLANNER
- Built Robot model with URDF and simulated in Gazebo Environment.
- Implemented a local path planner using the Dynamic Window Approach (DWA) algorithm and tuned DWA trajectory score.