Mahesh Saboo

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EDUCATION

Stanford University — Sep. 2021 – June 2023
Master of Science in Mechanical Engineering (Robotics) — Stanford, USA
- Ongoing Coursework: Principles of Robot Autonomy, Smart Product Design Fundamentals

Indian Institute of Technology Kanpur — July 2016 – June 2020
Bachelor of Technolgy in Mechanical Engineering (CGPA: 8.6/10) — Kanpur, India
- Computing Coursework: Data Structures and Algorithm, Machine Learning
- Robotics Coursework: Autonomous Navigation, Mechatronics, Robot Manipulators, Dynamics & Controls

EXPERIENCE

Software Engineer - Bajaj Finserv Limited — July 2020 – June 2021
Team: Mobile Application Development — Pune, India
- Managed front-end and its integration with back-end for multiple segments of company's android application
- Coordinated with internal teams and external partners and developed solutions for requirements within organization

Research Intern - Soft Computing Lab, Prof. D K Pratihar — May 2019 – July 2019
Project: Gait Event Detection — IIT Kharagpur, India
- Designed a device consisting of arduino, raspberry pi, FSRs and IMUs that helps in collecting lower limb kinetic data
- Enhanced the raw data and devised an algorithm to detect gait events on different terrains using data from IMUs
- Developed algorithm has a potential to act as a high level controller for powered prosthetic and assistive devices

Robotics Intern - Euphotic Labs — May 2018 – July 2018
Project: Automated Cooking Machine — Bengaluru, India
- Designed and manufactured a user friendly ingredients dispensing system for an automated cooking machine
- Employed belt-drive and ball-screw mechanisms controlled by arduino and raspberry pi to achieve the functionality
- Reduced the machine size by 20 percent by incorporating the dispensing system in the remodelled machine

PROJECTS

Delivery Robot
- Implemented autonomous exploration, A-Star, TSP, gmapping SLAM on a Turtlebot using ROS (Python) for navigation in a mock environment.

Autonomous Underwater Vehicle
- Developed familiarity with frameworks and tools commonly used in robotics like ROS, OpenCV
- Designed and fabricated waterproof casings and vehicle frame using in-house manufacturing facilities

Depth Map from Stereo Vision
- Developed a ROS compatible implementation of Kanade's stereo matching algorithm as a solution to assign window size for block matching in stereo vision using SSD

SKILLS

Languages : C, C++, Python, MATLAB, Kotlin
Tools : ROS, Arduino, Raspberry Pi, Solidworks, ANSYS Workbench, OpenCV, Scikit-Learn, Numpy, Pandas, Git
Hardware : LIDAR, Camera, IMU, PIC Microcontroller, Proximity Sensors, Encoders

PUBLICATIONS

• S. Sahoo, M. Saboo, D. K. Pratihar and S. Mukhopadhyay, "Real-Time Detection of Actual and Early Gait Events During Level-Ground and Ramp Walking," in IEEE Sensors Journal, 15 July, 2020

AWARDS AND ACHIEVEMENTS

• Academic Excellence Award at IIT Kanpur (2018-2019), awarded to Top 10% students
• National Talent Search and Kishore Balvaidyanik Protsahan Yojana scholarships by Govt of India