Anvitha Anchala

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Open to relocation

Education

Northeastern University , Boston , MA — Expected Graduation - Dec 2024
Master of Science in Robotics (ECE) — GPA: 3.9/4
Coursework: Robotic Sensing and Navigation, Assistive Robotics, Computer Vision and Pattern Recognition,Robot Science and Systems ,Machine Learning , Human Computer Interaction

Sreenidhi Institute of Science and Technology , Hyderabad , India — Jun 2020
Bachelor of Technology in Electronics and Communications Engineering — GPA: 8.7/10
Coursework: Digital Signal Processing,Control Systems, Probability, Linear Algebra, C++

Experience

Signal Processing Engineer, MethodAI , Needham , MA — Jun 2023 - Dec 2023

- Developed and managed first-generation benchtop data acquisition system for surgical navigation
  - Integrated and validated state-of-the-art Ultrasound and camera systems
  - Acquired data to support the establishment of key algorithms
- Established the first iteration of an algorithm to assist users in spatially registering imagery from two sensing modalities
  - Developed an algorithm to amplify key spatiotemporal waveforms present in both imaging streams to enable soft registration of Ultrasound imaging
  - Processed and analyzed real-time volumetric data streams

Research Engineer, ADAS, Hyundai Mobis , India — Sep 2020 - Jun 2022

- Performed functional testing and static analysis for more than 50 vehicle variants utilizing Vtest Studio and CANoe and developeda test suite for MTCI as a part of the lateral software team
- Optimized scripts using MATLAB for automating processes such as Software Unit Design documentation deployed for Lane Keeping Assist,Lane Following Assist and Highway Driving Assist reducing the manual hours required by 50 %

Control Systems Engineer , Indian Space Research Organization , India — Jan 2022 - Mar 2022

- Devised a PLC based control system utilized for the Automation of a hydraulic jack lifting system for the bogie at the second launch pad of Satish Dawan Space Centre (SDSC),SHAR
- Ensured the safety of the system by monitoring the parameters such as the position of LVDT, pressure at each jack, hydraulic oil level and temperature.

Projects

ASSISTIVE FEEDING USING WIDOW X 250S ARM — Jan 2024 - Apr 2024

- Developed an autonomous feeding system using Trossen WidowX250S robotic arm, Intel RealSense D455 depth camera, and Google MediaPipe for real-time facial landmark detection.
- Engineered a control system for precise feeding by calculating mouth centroid from facial landmark coordinates, enabling autonomous operation.
- Addressed and overcame synchronization and real-time performance challenges, demonstrating system efficacy in assisting individuals with upper extremity impairments.

SENSOR FUSION USING GNSS PUCK AND VN-100N IMU — Jan 2023 - Apr 2023

- Devised a navigation stack deployed in a car by writing Python drivers for GNSS puck and VN-100 IMU sensor calibration, integrated using ROS
- Performed a sensor fusion algorithm to combine GPS and IMU dead-reckoning data estimate to improve localization and error estimation of yaw ,acceleration and velocity by utilizing MATLAB, achieving over 90% accuracy

PERSONALIZED GOOGLE MAPS ETA BY SENSOR FUSION — Jan 2023 - Apr 2023

- Implemented a personalized ETA tool using sensor fusion of GPS and IMU sensors, improving travel time accuracy by 10% over Google Maps estimates, with potential applications in urban planning
- Conducted data collection with IMU attached to a bicycle, capturing speeds between 0-3 m/s; reduced noise in velocity data by 15% using median filtering over 1-second samples.
- Proposed improvements using GPS for velocity calculation and adjustments for pedestrian traffic to enhance the model's accuracy.

PILLAVATE : SELF RAISING PILLOW FOR CHF PATIENTS — Sep 2022 - Dec 2022

- Engineered an affordable, self-raising portable pillow for Congestive Heart Failure patients using Arduino Uno, MAX 30100 sensor, Linear Actuator, DC motor, and L298 motor driver
- Developed this pillow such that, compared to current market offerings, the overall cost is reduced by greater than 50%

Skills

- **Programming Languages**:MATLAB, Python, C++, CAPL , BASH, VimL
- **Hardware Expertise**:Verasonics Ultrasound system , Intel Real sesnse , WidowX250s robot arm,Epuck-Robot , Moorebot ,Raspberry Pi,Analog and Digital Sensors, Arduino
- **Software Tools**: ROS/ROS2,Gazebo, MoveIt,ArGOS, GitHub, Verasonics,KWave,ROS, MATLAB, CANoe, Polyspace,Vtest Studio, CARSIM, Unity pro XL,Azure DevOps, Figma
- **Libraries and Frameworks**: Pandas, NumPy, SciPy, Matplotlib, Scikit-Learn, OpenCV, TensorFlow,