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EDUCATION

Aug 2021 – present	**International Institute of Information Technology Hyderabad,** *MS by Research ECE*	Hyderabad, India
Aug 2014 – May 2018	**Anil Neerukonda Institute of Technology and Sciences,** *B.E. in ECE*	Vishakapatnam, India

PROFESSIONAL EXPERIENCE

Jun 2024 – present	**Embedded Software Engineer,** *Miko*	Mumbai, India
Sep 2021 – Jun 2024	**Research Assistant,** *Robotics Research Centre, IIIT-HYDERABAD*	Hyderabad, India
Sep 2023 – Dec 2023	**AI Prompt Engineer,** *Soul AI*	
Mar 2019 – Jun 2020	**Consultant Engineer,** *L&T Technology Services*	Mysore, India

SKILLS

C | C++ | Python | Embedded C | Assembly Language of 8085/8051 | Pytorch | Webdriver IO | Selenium | Appium | OpenCV | MATLAB | ROS | Proteus | Pybullet | MuJoCo | Gazebo | Photoshop | Fusion 360 | Git | 3D Printing

PROJECTS

Miko Mini Robot – Audio Integration Project
- Configured ALSA (Advanced Linux Sound Architecture) to interface with the TAS2563, ensuring optimal audio performance.
- Developed and implemented software drivers to facilitate communication between the embedded Linux system and the TAS2563.
- Conducted comprehensive testing and debugging to ensure audio output met quality standards and integrated smoothly with the robot's interactive features.
- **Tools Used:** Embedded Linux, ALSA, I2S/TDM interfaces, I2C communication, TAS2563 amplifier, C/C++ programming.

Miko Mini Robot – Feature Optimization Project
- Implemented the "Miko Dance" feature to function offline by eliminating reliance on WebSocket communication.
- Developed local processing logic to ensure seamless performance without network dependency.
- Optimized the robot's responsiveness for enhanced user experience in disconnected environments.
- **Tools Used:** C++, WebSocket, Embedded Systems.

Pointnet: Deep Learning on Point Sets for 3D Classification and Segmentation
- Implemented the "PointNet" project for 3D classification and segmentation
- Showcased expertise in advanced deep-learning architectures
- Demonstrated precise 3D object classification and segmentation skills

Lenet-5 Implementation for Handwritten Digit Recognition
- Developed Lenet-5 from scratch for handwritten digit recognition.
- Implemented a seven-layered architecture with trainable parameters.
- Demonstrated model functionality through a user-friendly web app.

Application of PID control on a Bionic-Hand
- Applied PID control to the Bionic Hand project
- Contributed to Mujoco simulation and hands-on fabrication
- Showcased practical skills in control systems and robotics, integrating theory into real-world applications

Eli Lilly - Madelyne Mobile Medical Application(R2)
- Writing test features based on test cases
- Scripting the step definitions based on features.
- Execution of features on different operating systems (iOS and Android real devices & Emulators).
- **Tools Used:** Appium, Cucumber, JavaScript, WebdriverIO

Eli Lilly - Madelyne Mobile Medical Application(R1)

- Writing test features based on test cases
- Scripting the step definitions based on features.
- Execution of features on different operating systems (iOS and Android real devices & Emulators).
- **Tools Used:** Selenium, Cucumber, Java, TestNG

RESEARCH WORK

Integrated Robotic System Development: Enhancing a novel end-effector Design with Raspberry Pi, Arduino, and ROS Integration

- The modification of the novel end-effector design and seamless integration of Raspberry Pi and Arduino platforms to enhance control and functionality.
- Implemented ROS for seamless management of the robotic arm(Xarm7), facilitating efficient task execution.

Parameter Identification for the novel end-effector: Bridging Mathematical Model and Hardware

- Conducted parameter identification for the end-effector to minimize discrepancies between the mathematical model and the physical hardware.
- Applied optimization techniques to iteratively adjust parameters using a two-stage parameter identification method, optimizing the end-effector's performance.

Rigid Body Dynamics-Based Trajectory Optimization for Object Throwing

- Formulating the dynamics of the rigid body and implementing trajectory optimization.
- Simulation of the motion of the rigid body using MATLAB, gazebo and ROS.
- To obtain the optimal initial conditions to throw an object to a desired location.

Ensemble Learning Integration: Enhancing Object Feature Extraction with PointNet, SVM/Random Forests

- Implemented ensemble learning by combining PointNet with SVM/Random Forests for object recognition tasks.
- Leveraged PointNet's robust feature extraction capabilities to enhance object recognition accuracy.
- Demonstrated versatility and proficiency in machine learning techniques, showcasing enhanced classification performance.

PUBLICATIONS

Identification and Learning-Based Control of an End-Effector for Targeted Throwing,
IEEE Robotics and Automation Letters (RA-L)
Accepted August 2024

A Novel Hybrid Gripper Capable of Grasping and Throwing Manipulation,
IEEE/ASME Transactions on Mechatronics
Impact Factor: 6.4

AWARDS

2023 **IEEE SPECTRUM**
The work related to this Paper ”A NOVEL HYBRID GRIPPER CAPABLE OF GRASPING AND THROWING MANIPULATION”, Featured on the IEEE Spectrum in April 2023.