Rutvik Yamkanmardi

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Education

California State University - Chico June 2025
Master of Science in Computer Science *GPA: 4.0/4.0*

Indian Institute of Information Technology - Dharwad May 2022
Bachelor of Technology in Computer Science and Engineering *GPA: 3.52/4.0*

Skills

Languages: *C/C++, Make, Python*, Bash,
Strengths: Critical Thinking, Communication, Problem Solving, Attention to Detail
Tools: Scikit-learn, OpenCV, CUDA, Jetson Orin, MATLAB, Turtlebot3, ROS2, Gazebo, RViz, Git/GitHub, Unix Shell, GCP, AWS

Libraries: pandas, NumPy, Matplotlib

Relevant Experience

Computer Vision - Research Assistant | *Chico State Enterprises* June 2024 – Present

- Implemented Structure from Motion to calculate Rutting Depth on the Road
- Handled requirements in an AGILE method to ensure on-time delivery
- Used both Python-Matplotlib-OpenCV and MATLAB to generate a Point Cloud of SURF Features
- Worked in a collaborative environment, to resolve conflicts and technical issues as part of "One Team"
- Experimented with different algorithms to boost performance
- Implementation plans to reduce the cost of calculating Rutting Depth by 4000% - by cleverly using a single GoPro to generate the Point Cloud

Software Engineer | *IndiaMart InterMESH Ltd* May 2022 – June 2023

- Developed and maintained a high volume API dealing with millions of per-day requests
- Performed database and server migrations to reduce latency issues
- Performed codebase migration - from PHP to Golang
- Optimised code to ensure faster delivery of packets

Projects

Voice-Activated Auto Navigating Robot | *ROS2, VOSK, GPT-3.5, Turtlebot, Python, Yolo* December 2024

- Deployed a fully functioning Robotis Waffle-Pi robot using ROS2
- GPT 3.5 used for instruction comprehension
- Implemented Wake word detection to ensure privacy and quick activation
- Object Detection implemented using YOLO
- Hand-crafted ROS2 Packages ensured robot navigated to the specified object
- Object Follower logic implemented along with a Search function to ensure continuous detection

Crosswalk Pedestrian Safety System | *OpenCV, Jeston Orin, C++, Yolo Object Detection* May 2024

- Implemented a Pedestrian Safety System aimed at crosswalks
- OpenCV and Yolo used for Object and Person Detection
- Application integrates 3 models across 6 features, parallelized using CUDA to ensure Speed
- Privacy Features implemented by blurring the faces of pedestrians
- Detection and related functions have an accuracy of 90% with a PR score of 95% each
- Application fully deployed on Jetson Orin Board

Autonomous Humanoid Navigation | *ROS - 2, Unix Shell* May 2022

- Implemented an autonomous navigation system on a Humanoid robot
- Learned 3D Modelling of Indoor Surfaces to input a test map
- Collaborated with hardware team to optimise the use of LIDAR
- Implemented an obstacle detection and avoidance algorithm