Suresh Nayak

suresh.nayak@colorado.edu   **720-761-3440**   **https://www.linkedin.com/in/suresh-n-nayak**   **https://sureshnnayak.github.io/**

EDUCATION

UNIVERSITY OF COLORADO BOULDER, Boulder, CO   Expected 2023
MS Computer Science GPA: 3.71
- Relevant course work: Linear Programming, Neural Networks and Deep Learning, Datacenter scale computing, Advanced Algorithms, Object-Oriented Analysis & Design, Distributed Systems.

R V COLLEGE OF ENGINEERING, Bangalore, India   2018
BE Information Science. GPA: 8.4/10

PUBLICATIONS

- ShelfHelp: Empowering Humans to Perform Vision-Independent Manipulation Tasks with a Socially Assistive Robotic Cane.   AAMAS, 2022.

SKILLS

- Languages: Python, Java, C/C++, SQL, HTML/CSS, LaTeX.
- Databases: MySQL.
- Frameworks and Libraries: NumPy, Rest, RabbitMQ, Pandas, TensorFlow, Pytorch, TF Light, Media pipe, OpenCV.
- Tools and Software: Git, Docker, GitHub Actions, Postman, Kubernetes. Robotic Operating System (ROS).
- Knowledge: Data Structures & Algorithms, Testing, Data Analysis, Machine Learning, Neural Networks, POMDP.

PROJECTS

GOAL OBJECT DATA ASSOCIATION   Spring 2023
- Developing an autonomous system to identify potential human goals in any environment, and aid in autonomous navigation using the POMDP framework.

SMART CANE FOR GROCERY SHOPPING ASSISTANCE   03/22-01/22
- Designed and executed an end-to-end AI system to assist a visually impaired person in grocery shopping. The AI would Detect desired product and person's hand location using deep learning models (YOLOv5) and issue appropriate verbal commands leveraging an MDP planner to fetch the item from the shelf.

CLOUD DEPLOYMENT AND INFRA   08/21-08/21
- Deployed a cloud-native application- stock-recommendation provider using Artificial Neural Networks on google cloud platform to predict the stock opening price for a given stock with an accuracy of 40%.

ROTLA GAME SIMULATION   08/21-08/21
- Implemented a java based RotLA simulation game by incorporating multiple design patterns.

AUTONOMOUS SURVEY DRONE
- Created a software to identify objects in bird-view images taken during Drone surveying using OpenCV (C++). The software could classify and detect objects in images with an accuracy of 95%.

EXPERIENCE

UNIVERSITY OF COLORADO BOULDER, Boulder   2021 - Present
Graduate Teaching Assistant
- Conducted recitation classes, interview grading, and held office hours for the course "Computer Systems" for a class of 379 students.

Graduate research Assistant - Robotics Lab
- Generated hand movement dataset using Opti-Track sensor and emulated the system on RealSense D435 Camera using Deep learning algorithms and set up the cross-platform data computing using Robotic operation system.
- Trained and unsedYOLOv5 Model on SKU110k Dataset to identify grocery items on the shelf with an accuracy of 93%.

CISCO SYSTEMS, Bangalore (Software Engineer)
- Redesigned a software mechanism to monitor the liveness of process in Cisco XR routers and provide a means of recovering it whenever a critical process gets hung. Feature is currently deployed in the XR routers resulting in bug count by 10%.
- Devised a feature related to high availability components (in-memory database) during product release cycle efficiency reducing workload overhead by 80%.
- Developed a feature for Private line emulation (a Cisco patented project) to encapsulate other network packets in OTN packets. enabling customers to leverage existing infrastructure to connect to an OTN network with zero hardware cost.
- Migrated software components from GCC to Clang Compiler enforcing inter component tight coupling, helping team achieve bug count less than 10.

ACHIEVEMENTS

- Finalists of the Student Unmanned Arial Systems, hosted by the AUVSI Seafarer Chapter.
- Multiple Connected recognitions for Dedicated Project Deliverables, Cisco Systems.