

Shrirang Patil

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EDUCATION

Master of Science - Artificial Intelligence | GPA : 3.67

Expected Dec 2025

Oregon State University, Corvallis, OR, USA

Bachelor of Technology - Computer Science and Engineering (AI and ML) | GPA : 3.60

Jun 2023

Vellore Institute of Technology, Bhopal, India

SKILLS

Languages: Python, R, C++, SQL, JavaScript, MATLAB

Tools: AWS, Google Cloud, Docker, Git, Linux, Postman, Jenkins, MLFlow, Google Firebase, ROS, Kaldi, Whisper, Arduino, MongoDB

Skills: PyTorch, CUDA, Large Language Models, Hugging Face Transformers, Automatic Speech Recognition, Signal Processing, Natural Language Processing, NLU/NLG, Direct Preference Optimization, RLHF, Human Robot Interaction, Choreograph, Safe AI, Distributed Training, HPC Cluster, LLM Fine-Tuning, CI/CD, TensorFlow, scikit-learn, AutoML, Data Structures and Algorithms, Data Science

WORK EXPERIENCE

Graduate Research Assistant- Electrical Engineering and Computer Science advised by [Dr. Heather Knight](#)

Dec 2023 - Present

The CHARISMA Robotics Lab, Corvallis, OR, USA

- Designed and conducted **HRI study** on in-contact underwater manipulation tasks, collaborating with a team of 3 researchers to collect and **analyze trajectory and verbal data** for 30 participants published on [Kaggle](#) findings under review
- Authored and presented '[Exploring the Utilities of LLM's in Robot-Supported Mindfulness Practices](#)' at the *Scarecrows in Oz: LLMs in HRI Workshop, 2024 ACM/IEEE International Conference on HRI*, demonstrating research and presentation skills
- Mentored an undergrad for honors thesis on [Text-to-Pepper-Robot PythonAnimator](#) a python-based markup language, simplifying script-to-performance conversion, showcasing leadership and teaching abilities, research under review
- Received **\$25,000 grant** from OSU for developing an **web-based AI companion** to augment human-machine and human-human interactions in counseling settings, focusing on **speech analysis** and real-time multimodal feedback

Undergraduate Researcher- Information Systems and Analytics advised by [Dr. Tan Wee Kek](#)

Dec 2022 - May 2023

National University of Singapore, Singapore, Singapore

- Developed **multilingual ASR** system with **CNN+RNN** (Bidirectional GRU) architecture for **MFCC** feature extraction, achieving 92% accuracy across 125 syllable classifications on OpenSLR dataset comprising 27 languages, worked with 4 researchers
- Engineered novel **Reconstructed Phase Space** feature extraction AutoML pipeline using spatial-temporal CNNs and LSTM networks to process 10,000+ audio files containing consonant-vowel pairs, improved robustness compared to traditional

Robotics Developer Intern

Feb 2022 - Mar 2022

Bolt IoT Inventrom Private Limited, Bengaluru, India

- Designed a robot controlled by google assistant **API** for **voice commands**, achieving a navigation success rate of 90% in avoiding obstacles, increasing user interaction and accessibility for individuals with mobility challenges

ROS Intern

Jul 2021 - Aug 2021

SmartInternz, Hyderabad, India

- Implemented a 4-wheeled robot navigation system in **ROS** and **GMapping SLAM**, through URDF/Xacro modeling for indoor navigation and obstacle avoidance in Gazebo simulation environment, skill index 9/10, career readiness factor (CRF) 29/32

PROJECTS

- EmotionSport Neural-Powered Athletic Performance Analysis System** [[GitHub](#)]

Developed a **sports facial emotion analysis system** testing CNN and Bi-LSTM models, attaining **90.67% accuracy** on CK+485 dataset, providing **quantified emotional metrics** (frequency, intensity, duration) adding to player performance insights

- Smart Assistive Cane for Visually Impaired Navigation** [[GitHub](#)]

Built a **Smart Assistive Stick** employing **Bolt IoT** and **ultrasonic sensors** for obstacle detection (1.5m) with buzzer alerts, offering a low-cost, energy-efficient solution for visually impaired

- IoT-Enabled Blood Storage Temperature Predictor** [[GitHub](#)]

Created an **IoT-based temperature monitoring system** ensuring compliance with critical +2°C to +6°C range for blood banks with **Bolt IoT** and **LM35 sensor**, predicting anomalies with **Polynomial Regression** and sending **real-time alerts**

- PhonicVision Text-to-Speech Assistant for Visually Impaired** [[GitHub](#)]

Implemented **PhonicVision**, a mobile app based on **OCR** and **Text-to-Speech** to convert image text to audio in real-time, enhancing accessibility for visually impaired users. Features include **PDF saving** and **Firebase integration**