CH Varun

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EDUCATION

Bachelor of Technology (B.Tech), Computer and Communication Engineering **2021-2025**
Amrita Vishwa Vidyapeetham, Chennai **(current) CGPA: 7.01**

Secondary Education **2020-2021**
Narayana Jr College, Hyderabad **percentage: %90.2**

Secondary School of Education **(Year Of Completion)2019**
Dr. Kkr's Goutham High School,Hyderabad **CGPA: 9.5**

WORK EXPERIENCE

Government Internship **Jul 2022 - Aug 2022**
Water and Land Management Training and Research Institute(WALAMTARI)

- Developed technology addressing a critical environmental challenge (water scarcity) through data-driven decision-making and resource optimization.
- Employed sensor fusion techniques to combine data from the 10 sensors for comprehensive environmental monitoring. Leveraged GSM mobile communication for wireless data transmission from 10 sensors.
- Designed and deployed a user-friendly mobile app for farmers to monitor and manage water usage, which empowered 50+ farmers with real-time water usage optimization capabilities.
- Effectively led a cross-functional team of four , demonstrating strong communication, project management, and technical problem-solving skills.

PROJECTS

AI-Powered Real-Time Plant Disease Detection and Prediction System **Mar 2022 - Jun 2022**

- Curated and labeled a diverse dataset of 10,000+ plant disease images. This enriched training data enabled the model to accurately identify a wider spectrum of pathologies compared to previous approaches.
- Utilize a combination of convolutional neural networks (CNNs) and cutting-edge deep learning techniques to achieve a remarkable 98% accuracy in disease detection. This surpasses industry standards and significantly improves disease diagnosis contrast to the traditional methods.
- Built a user-friendly web application using Django for seamless integration and real-time disease detection. This empowers farmers, agricultural professionals, and individuals with instantaneous disease identification capabilities, fostering informed decision-making and timely interventions.

Context-Aware Robot Path Prediction for Enhanced Agricultural Efficiency **Nov 2022 - Dec 2022**

- Applied computer vision techniques to extract key environmental features (e.g., obstacles, terrain variations) and incorporated them into a robust path prediction algorithm.
- Engineered a system capable of predicting robot paths with 92% accuracy, significantly improving field efficiency and autonomous operation capabilities.
- Led a team of two to a top-three finish at the prestigious Vit Agrithon hackathon, demonstrating the project's impact and potential within the agricultural community. The solution resonated with 70% of potential users/farms, highlighting its real-world value.

Sensor-Fusion based Elderly Fall Detection System with Enhanced Prediction and Monitoring **Sep 2023 - Jan 2024**

- Engineered and enhanced a Generative Adversarial Network (GAN) system to accurately predict body joint values from only one sensor, simplifying hardware requirements by 90%. This significantly reduced system cost and complexity.
- Integrated TCP/IP communication to make the BNO055 IMU sensor wireless, enabling greater user mobility and ease of use. This eliminated cable constraints and improved user comfort while maintaining reliable data transmission.
- Managed a team of 3, strategically delegating tasks, providing supportive guidance, and fostering a collaborative and motivated environment. This ensured project success and team member growth.

Real-Time Control Optimization in Cyber-Physical Systems using Reinforcement Learning **Dec 2023 - Feb 2024**

- Trained a robust RL model on various diverse test cases within the CPS environment, enabling the agent to learn optimal control strategies in real-time.
- Successfully deployed the learned RL policies from the software simulation environment to the actual hardware, creating a closed-loop learning and control system. This ensured a smooth transition and the applicability of the learned strategies in the real world.
- Achieved a remarkable 80% efficiency improvement combined with traditional control methods, demonstrating the effectiveness of RL in optimizing CPS performance for real-world applications.

SKILLS

Languages: C, Python, Java, Java Scripts
Machine Learning: Data Science, GANs, CNNs, Computer Vision, Reinforcement Learning
Frame Works: My SQL, MangoDB, HTML, CSS, React Native,Flutter
Network Communication: Experience with TCP/IP, network sensors

AWARDS

Smart India Hackaton(SIH)

- Spearheaded a team of 6, securing 2nd place in a Smart Street Light Management System competition with our groundbreaking idea for sustainable cites

VIT Agrithon

- Scored 3rd at VIT Agrithon, collaborating with Nvidia & IIT Hyderabad, thanks to our team's successful development of an AI-powered algorithm.

Open Source Contribution

- Demonstrated proficiency in Python and machine learning by contributing to the renowned Scikit-Learn library.