Sai Pranay Kumar Nagella

Nellore, Andhra Pradesh, India | +91 6281449747 | sainagella2811@gmail.com

https://www.linkedin.com/in/nagella2811/

EDUCATION

B.Tech : Electronics and Communication Engineering with AIML Specialization   2020 - 2024

GITAM Deemed to be University - Bengaluru | CGPA : **9.33**

- Secured 1st place in IoT Workshop
- Best Presentation in Robotics Workshop

Intermediate : Maths, Physics, Chemistry (MPC)   2018 - 2020

Narayana IIT Academy - Nellore | CGPA : **9.57**

10th Standard   2018

Narayana E.M. High School - Nellore | GPA : **9.8**

- Runner Up in Essay Writing Competition

WORK EXPERIENCE

Research Intern - GITAM University, Bengaluru   05/2024 - Present

- Conducting comprehensive research in the Software Defined Vehicle (SDV) Lab in the area of AD/ADAS.
- Exploring various SLAM Algorithms and gained expertise on numerous sensors for AD/ADAS Applications.
- Got familiar with Linux OS and Learned ROS(Noetic) & ROS2(Humble).
- Familiar with dSPACE tools (SCALEXIO, MicroAutoBox) for Simulation and Validation.

PROJECTS

Gesture Sense : An Automated Hand Gesture Control   2023 - 2024

- Explored two approaches for gesture control: OpenCV & deep learning methods using 3D-CNN with LSTM
- Compared the accuracies of both methods in gesture recognition.
- Implemented practical applications including controlling Spotify for music & the Hill Climbing Race game.
- Demonstrated the versatility and efficacy of gesture recognition technology in enhancing human-computer interaction.
- **Tools -** Visual Studio Code (VS Code), Google Colab | **OS -** Windows
- **Libraries -** OpenCV, PyAutoGUI, Mediapipe, Keras

Student Management System   04/2023

- Developed a student management system GUI using Tkinter for the interface and PyMongo for database interactions.
- Enabled functionalities such as adding, updating, deleting, and retrieving student records.
- Implemented features for efficient data management and user-friendly interaction.
- Ensured seamless integration between the GUI and MongoDB for reliable data storage and retrieval.
- **Tools -** Jupyter Notebook | **OS -** Windows
- **Libraries -** Tkinter, PyMongo

Smart Home Automation [IoT Workshop]   09/2022

- Prototyped a Smart Home Automation project by interfacing various sensors for comprehensive home monitoring and control.
- Utilized Blynk Cloud and Blynk IoT mobile app for remote management and automation of home devices.
- Achieved real-time data collection and responsive control through sensor integration.
- Enhanced home automation system's usability and efficiency with intuitive mobile app controls.
- **Tools -** Arduino IDE | **OS -** Windows

Automated Mask Detection & Smart Gate Control System   09/2023

- Prototyped an Automated Mask Detection & Smart Gate Control System using Arduino UNO and LCD for display.
- Employed Teachable Machine for data collection and PictoBlox for programming and control.
- Developed a functional device for real-time mask detection and automated gate management.
- **Tools -** Teachable Machine, PictoBlox | **OS -** Windows

Face Detection and Tracking
08/2023

- Implemented face detection and tracking with **KLT** and **CAM Shift** algorithms.
- KLT algorithm detects feature points and tracks them across video frames for accurate face tracking.
- CAM Shift algorithm utilizes color information to track objects by adapting the size and orientation of the search window dynamically.
- Utilized Live Video Acquisition for real-time face tracking.
- **Tools -** MATLAB | **OS -** Windows

Line following Robot
08/2022

- Designed and assembled a Line Following Robot during a Robotics Workshop.
- Utilized **Arduino IDE** and **Tetrix Prizm** for programming and hardware integration.
- Implemented obstacle avoidance and line tracking functionalities through interfacing Ultrasonic and IR sensors.
- **OS -** Windows

CERTIFICATIONS

Coursera Courses

- IBM Machine Learning Professional Certificate — 03/2023
- Introduction to Databases, Meta — 10/2022
- Python for Data Science, AI & Development, IBM — 07/2021
- Introduction to Artificial Intelligence, IBM — 01/2021
- Introduction and Programming with IoT Boards, POHANG University — 05/2022
- Introduction to Computer Vision and Image Processing, IBM — 10/2023

INTERNSHIP

Central Manufacturing Technology Institute - Bengaluru 05/2023 – 07/2023

- Initiated the development of an Electrowetting System on Dielectric (EWOD) project.
- Conducted comprehensive research into EWOD principles and applications, establishing a strong theoretical foundation for the project
- Designed and fabricated prototypes, demonstrating the system's capabilities in fluid manipulation and microfluidic applications.
- Collaborated with interdisciplinary teams to explore potential applications in fields such as lab-on-a-chip devices and digital microfluidics.

TECHNICAL SKILLS

- **Programming :** Python, C++, MySQL
- **Tools :** MATLAB, VS Code, Jupyter, Google Colab, Arduino IDE, ROS, ROS2
- **Boards :** Arduino UNO, ESP8266, Tetrix Prizm | **OS -** Windows, Linux
- Internet of Things (IoT)
- Artificial Intelligence & Machine Learning

MENTORSHIP EXPERIENCE

IEEE Student Branch – Program Manager, Vice Chair, Student Advisor 2023 - 2024

- Led technical programs, coordinated events, and mentored students.

IoT Workshop - Mentor 09/2022

- Provided guidance and support to participants.
- Provided expertise and support in various aspects of IoT, including hardware setup, programming, and project implementation.

Arts Club - Student Mentor 2023

- Offered guidance and support to fellow members in various artistic endeavors.

LANGUAGES

- English - Read/Write/Speak
- Telugu - Read/Speak