Akhil S Nair

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EDUCATION

B.Tech in Robotics and Automation Engineering, Saintgits College of Engineering, Kerala 2019 – 2023

SKILLS

Programming: Python, C++, ROS1/2, MATLAB, OpenCV **Tools:** Gazebo, RViz, MoveIt, URDF, Git, Linux, Fusion 360, SolidWorks **Robotics:** SLAM, Path Planning, Sensor Fusion, LIDAR, Motor Control, STM32, Arduino, Raspberry Pi **AI/ML:** Computer Vision, Deep Learning, Reinforcement Learning, NLP **Others:** Rapid Prototyping, Human-Centered Design, 3D CAD, Simulation

EXPERIENCE

Robotics Engineer & Founder, Zeo — Personal Robotics Tools for Neurodivergent Focus
Remote / Kerala 2023 – Present
- Leading development of **Zentrium**, a mood-aware calendar that adapts to energy rhythms
- Designing **Neuronote**, a voice-first second brain optimized for chaotic memory & emotional logging
- Building a robot for social child growth and companionship using ROS2 and NLP
- Created emotionally intelligent AI systems that prioritize rhythm over hustle

Autonomous Vehicle Navigation – Self Project 2021 – 2022
- Designed a ROS1-based navigation stack using LiDAR-based SLAM and Kalman filtering
- Improved real-time obstacle avoidance using deep learning
- Boosted pipeline performance by 30% with adaptive sensor fusion

Swarm Robotics System for Disaster Mapping June 2021 – Sept 2023
- Developed collaborative UAV swarm for terrain mapping and response optimization
- Achieved 95% terrain mapping accuracy and reduced coordination delays by 45%

Fire Extinguisher Robot Aug 2020 – Nov 2020
- Built an autonomous robot with fire detection and suppression using Arduino and C++
- Engineered IR-based motion logic with responsive servo actuation

PROJECTS

Gesture-Controlled Arm
- Created a robotic arm that mirrors hand gestures using IMUs and servo mapping
- Integrated Raspberry Pi with wireless control and OpenCV calibration

Child-Friendly Robot Buddy (Startup Prototype)
- Developed interaction protocols for safe, emotionally responsive robot companions for kids
- Used ROS2, NLP, and emotion-tagging to generate adaptive behaviors and dialogue

CERTIFICATIONS & WORKSHOPS

Certifications
Machine Learning Specialization – Simplilearn
Agile Scrum Master – Simplilearn
NLP & Text Mining – Simplilearn
Bits & Bytes of Computer Networking – Google (Coursera)

Workshops
IoT & Drones – Bennett University
Gesture Controlled Robotics – Government Engineering College
LabVIEW – Saintgits College of Engineering