N. Suresh K. Kondepudi

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EDUCATION

ARIZONA STATE UNIVERSITY
MS in Robotics & Autonomous Systems
4.0 GPA | Tempe, AZ
Graduating Fall 2024

MAHINDRA ÉCOLE CENTRALE
BTech in Electrical & Electronics Engg
2016 - 2020 | Hyderabad, India

CERTIFICATIONS

Robotics Specialization by University of -Pennsylvania
Modern Robotics : Coursera
Machine Learning : Coursera
Signal Processing Onramp : Mathworks

SKILLS

PROGRAMMING
C • C++ • Python • Javascript
MATLAB• Rust • Julia • bash
Java • Verilog •

CAD
Fusion 360 • FreeCAD • Inventor
E-CAD:
KiCAD • EAGLE • Circuitmaker
Altium Designer

HARDWARE
STM32F3/F4/F7 • ESP8266 • ATmega 328p/2560 • Raspberry Pi Zero-W/Pico
NVDIA Jetson Nano • Intel - NUC

MISC SOFTWARE
OpenCV • Mujoco • Tensorflow
ROS1 | ROS2• Arduino
FreeRTOS • Git • PyTorch
Ubuntu Linux

ACTIVITIES

- Participated in Competitions like *SAUVC-2020*, *e-Yantra Robotics* and *Google Kickstart*.
- Volunteered for the org committee at *The 4th IEEE International Symposium on Smart Electronic Systems (iSES 2018) & National DD-Robocon(2019)*

EXPERIENCE

ETERNAL ROBOTICS | Robotics Engineer
Dec 2021 - July 2022 | Hyderabad, India

- Built feedback controllers, state estimators and filters for perception and locomotion systems deployed in STM32F7 & AM437x range processors for industrial robots.
- Worked on Debian and Ubuntu Linux for compiling GCC ARM-Linux code and for deployment.
- Built Modbus communication Ethernet drivers in C-code to interface mobile robots with Industrial PLCs.
- Wrote and mantained kernel drivers for a Linux based machine to interface with a mobile robot.
- Designed Circuits for compatible interfacing with multiple control devices.

MAHINDRA & MAHINDRA | Graduate Engineer trainee
Mar 2021 – Nov 2021 | Pune, India

- Built user control interfaces on paint robots for vehicle paint profiles.
- Developed a ML model to detect defects during assembly of 100HP car engines using recorded data from the *Advanced Cold Test(ACT)* of engines.

INDIAN INSTITUTE OF TECHNOLOGY | Intern
May 2019 – July 2019 | Delhi, India

- Built the Electrical system circuitry of an Autonomous Guided vehicle and implemented *Odometry*.
- Designed and maintained USB communication drivers in C-code to communicate with peripheral microcontrollers on an Intel-NUC.
- Implemented *SLAM* and *RRT* path planning for navigation along with *ROS middleware* to perform autonomous movements between way-points with obstacle avoidance.

PROJECTS

AUTONOMOUS UNDERWATER VEHICLE | Co-Founder & Electrical team lead of research group
July 2019 – Dec 2020 | Mahindra École Centrale, Hyderabad, India

Worked on a group research project on an *Autonomous underwater vehicle*, that acquired funding of *500,000 INR*. Designed Electronics & Control systems and built the entire software stack running a robot behavioural model.

PUBLICATIONS

[1] N. S. K. Kondepudi. Development of a mobile robotic platform, 2019. Poster presentation at Undergraduate Research Symposium, Mahindra École Centrale.

[2] S. K. K. Nalla, N. Pattar, N. Patnaik, P. Mehta, S. S. V. M. Tripuraneni, S. M. Surabathula, N. S. K. Kondepudi, and S. Uppapalli. Systems engineering v cycle approach for design and development of autonomous underwater vehicle. In *OCEANS 2021 San Diego-Porto Conference & Exposition*, 2021.