VISHAL NADIG

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EDUCATION

Arizona State University, Tempe, United States   Aug. 2022 – May. 2024
  Master's Robotics and Autonomous Systems (Systems Engineering)
  Related Courses: Robotics Systems 1, Multi Robot Systems, System Control and Optimization, Robotics Systems II,
  Experimentation and Deployment of Robotics Systems(ROS2), Engineering Computing with Python, Mechatronic Systems

The Oxford College of Engineering, Bangalore, India   Aug. 2016 – Aug. 2020
  Bachelor of Engineering, Electrical and Electronics Engineering
  Related Courses: Analog and Digital Electronics, Power Electronics, 8051 Microcontroller Programming
  Digital Signal Processing, Control Systems.

PROFESSIONAL EXPERIENCE

Software Engineer, Hypersonix AI, Bangalore, Karnataka, India   Jan. 2022 – Aug. 2022

- Worked on building a data validation framework to validate the data that is stored in our database through ETL processes.
- Contributed to build the core product of Hypersonix and expanded our customer base from brick and mortar (retail) stores to online ecommerce stores by writing backend code to fetch data from major ecommerce platforms such as Shopify, BigCommerce.
- Wrote the complete end to end logic to automate the entire process of fetching data, transforming it using DBT, and storing them in the database, both for first time customers and current customers.

Software Engineer Intern, Hypersonix AI, Bangalore, Karnataka, India   Jul. 2021 – Jan. 2022

- Wrote a complete end to end API product to create, fetch and edit the data of all customers in our databases, including onboarding of a new customer and updating the data of a present customer and saved many hours of human labor.
- Created a complete data pipeline for automation by implementing directed acyclic graphs(DAGs) python scripts. The program performed the complete data ingestion process from data collection to ingestion to be used by AI algorithms.

Engineering Intern, Bharat Electronics Limited (BEL), Bangalore, Karnataka, India   Jun. 2019 – Jul. 2019

- Studied the generation, distribution and transmission of electric power in real time
- Worked on Programmable Logic Controllers (PLC) based Supervisory Control and Data Acquisition System(SCADA), its operation and maintenance and prepared a case study of the PLC system implemented at the operating facility.

TECHNICAL SKILLS AND KNOWLEDGE

Languages:	Python, C++(basic)
Databases:	MySQL, MSSQL
Tools/Libraries/Technologies:	Linux, Ubuntu, ROS2, Pycharm, Solidworks, Jupyter, VS Code, Git, GitHub, FastAPI, NumPy Pandas, Matplotlib, SymPy, S3, Snowflake, EC2, Airflow, Docker, Microsoft Office, Jira
Development Boards:	Raspberry Pi, Arduino, Jetson Nano
Soft Skills:	Creativity, Analytical Skills, Consistent and Reliable, Lifelong Learner,Interpersonal Skills.

PROJECTS

Hand Gesture Controlled Turtlebot4   Mar. 2023 – Apr 2023

- Participated in a team of two to integrate various sensors and components on a turtlebot.
- Used ROS2 to interface between the various sensors of the robot.
- Used Google Mediapipe to train a RandomForrestClassifier model to recognize hand gestures to control the Turtlebot 4 Lite remotely over the ROS2 network.

Trading Bot   Nov. 2021 – Feb. 2022

- Built a trading bot to trade cryptocurrencies 24/7 in Python and hosted it on my local Raspberry Pi.
- Used various APIs to pull real time data feed from Tradingview for all the cryptocurrencies listed on the exchange to get real time prices, indicators, candle data and historical price data and used pandas to sort and organize the data to be used by the bot.
- Made REST API endpoints using FastAPI to send commands to the trading bot remotely over the internet with the help of a VPN.

Armoth-e   Nov. 2021 – Feb. 2022

- Wrote a python program to calculate the kinematic equations of a 3 DoF robotic arm
- Cut down on prototyping time by simulating and plotting the forward and inverse kinematics of a 3 DoF robotic arm and then recreating it on the prototype.

3-DoF Robotic Arm   Nov. 2021 – Feb. 2022

- Assembled and built the arm using aluminum brackets.Designed and built the circuit from scratch based around an Arduino Microcontroller.
- Implemented a basic Inverse Kinematics Algorithm using a geometric approach to calculate the joint angles of the various links and move the end effector of the robotic arm.

Chefbot Nov. 2021 – Feb. 2022

- Wrote a python program to parse thousands of cuisines from a CSV file.
- Used FastAPI to host a server and had various API endpoints to fetch the name of the dishes from the CSV file.
- Wrote several API endpoints to also fetch the recipes of the dishes and be able to download the file from the FastAPI endpoint.

Regenerative Braking Circuit for Electric Vehicles using H Bridge Circuit: May. 2020-Jul. 2020

- Led a team of four students and undertook various tasks such as decision making, coordinating between team members and oversaw the whole project throughout its duration.
- Came up with the circuit topology by studying various research papers on current technologies used in Regenerative Braking Circuits and doing thorough and conscientious literature surveys.
- Proactively involved in all aspects of the project including component selection, circuit design, simulation and implementation. Designed and built the circuit from scratch required for Regenerative Braking.
- Built and assembled a custom battery pack consisting of individual lithium ion cells.
- Came up with the algorithm and wrote the software that dealt with the switching logic required for successful operation of the regenerative braking circuit.
- Successfully demonstrated a working prototype of the circuit while being under time and financial constraints.