Dipin Kunhambu Nair

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SUMMARY

Software engineer with 5+ years of experience developing high-quality software solutions in C++, Python, and JavaScript. Proficient in Git, Visual Studio, and Microsoft Azure with strong problem-solving skills.

EDUCATION

University of Cincinnati, Cincinnati **January 2021 – August 2023**
Masters of Science in Mechanical Engineering GPA 4/4

Indian Institute of Technology, Hyderabad **August 2012 – May 2016**
Bachelor of Science in Mechanical Engineering GPA 8.24/10

SKILLS

- **Languages**: C/C++, Python, JavaScript, HTML, CSS, MATLAB, XML, SQL, LaTeX
- **Tools**: Visual Studio, VS Code, Version Control (Git), Microsoft Azure, Linux, MATLAB, ROS, Gazebo, Simulink
- **CAE** : Ansys, Abaqus, SimLab, Hypermesh, UG NX

PROFESSIONAL EXPERIENCE (5+ YEARS)

Ansys Inc. **January 2023 – April 2023**
Software Developer Intern Pittsburgh, Pennsylvania

- Worked with Linear Dynamics team for Adding new release features for ANSYS Mechanical Software
- Made major contributions to code base after ensuring the code quality through Windows and Linux developer builds through Microsoft Azure and ARM test
- Demonstrated expertise in applying Microsoft Component Object Model (COM) principles.
- Worked closely with the test team to identify the bugs and created Technical Documentation for beta and release features
- Participated in Scrum meeting to update the project progress and challenges

Proctor & Gamble (UC Simulation Center) **August 2021 – August 2022**
Robotics Software Engineer Cincinnati, Ohio

- Automated process of determining fragrance consumption rates for test batches of more than 600 air fresheners
- Deployed functionality for the robot to weigh, read QR code using computer vision, and upload data to Siemens server
- Created and recommended Python-based GUI for customer interaction with the help of PyQT

General Motors **September 2016 – November 2020**
Senior Engineer Bangalore, India

- Automated Abaqus system modeling with VBA scripting and reduced 85 % of man hours
- Executed projects in Transmissions (Manual, Automatic, EV & Hybrid) and attended Engine tear-downs
- Coordinated on adding 12 different efficiency modules in MASTA leveraging C++
- Led a cross-functional team of 4 to automate meshing in SimLab software using JavaScript for simulation analysis

PROJECTS

Classification of Rice using Soft Computing AI Techniques (**Conference paper** | **GitHub**) **June 2022**

- Constructed a Genetic Fuzzy Cascading system to classify 2 Rice varieties and presented research at NAFIPS conference
- Analyzed methodology on 80 % of 3810 data sets. Obtained Accuracy of 94.36 % in validation set
- Proposed method produced more accuracy than Linear regression, SVM, Multi-Layer Perceptron, and Decision Tree

Real-time Path Planning using Dijkstra and A* Algorithm (GitHub) **April 2022**

- Devised a 2D rapidly changing environment and accomplished path planning avoiding moving obstacles
- Collaborated with 2 other students to implement Dijsktra and A* algorithm using Python Object Oriented Programming

Mobile robot in Gazebo environment (GitHub) **December 2021**

- Generated a house with two instances of mobile robot Gazebo software and interacted with C++ plugins

Search area Optimization of Unmanned Aerial Vehicles (GitHub) **April 2021**

- Optimized routes of 4 UAVs with more than 20 waypoints with the aid of Particle Swarm and Ant Colony techniques in GPS-denied environment

Motion planning of Robot arm and Obstacle Avoidance **April 2021**

- Formulated forward and inverse kinematics of robot manipulator with 6 DOF. An Artificial Potential field algorithm was employed to avoid obstacles