KIRTHIK ROSHAN NAGARAJ

Phone: (469) 352-4343 | Knagar14@asu.edu | www.linkedin.com/in/Kirthik-Roshan | https://github.com/KirthikRoshan
1717 S Dorsey Ln #1039 Tempe AZ 85281

EDUCATION

MS **Robotics and Autonomous Systems (**Majored in Mechanical and Aerospace Engineering**)** Aug 2022 - Present
Arizona State University, Tempe, Arizona GPA: 3.90/4.00
Courses: Modelling and Control of Robots, ML & AI, Robotic Systems II, Mechatronic Device Innovation

BE **Mechatronics Engineering** Jul 2017 - May 2021
Kumaraguru College of Technology, Coimbatore, Tamil Nadu CGPA: 7.71 / 10
Courses: Manufacturing Technology, PLC, Design Of Machine Elements, Control Engineering, CAD-CAM, Additive Manufacturing

TECHNICAL SKILLS

Programming: Python, C, C++, ROS 2, MATLAB, Simulink,
Software Tools: Creo, Pro-E, AutoCAD, Solid Works, Kivy, Arduino, Robo studio, Jupyter, Visual Studio Code

Office Management: Microsoft365, LibreOffice, Slack, Collab, PowerPoint, Excel, Google Suite, MS Office Suite
Operating Systems: Linux (Ubuntu), Microsoft Windows

WORK EXPERIENCE

Student Worker, Barrow Neurological Institute Jan 2023 - Apr 2023
Phoenix, Arizona

- Collaborated with Barrow Neurological Institute (BNU & ASU collaboration) to design and develop a Mechatronic device with a Biofeedback device to assist patients with Parkinson's disease in adjusting their vocal intensity, resulting in a 60% improvement in patients' ability to modulate their vocal intensity.
- Contributed to the design and development of a vibrotactile feedback system that alerts users when their voice is overly loud or soft based on their surroundings, leading to a significant reduction in instances of inappropriate vocal volume by 30%.

Project Intern, Salzer Electronics Ltd Unit II Oct 2020 - Apr 2021
Coimbatore, India

- Perceived knowledge and understanding of manufacturing products like toroidal transformers, sensors, magnetic parts, wiring harnesses, load break switches, and connectors and terminals, with a proficiency rate of 95%.
- Innovated components for manufacturing using Pro-E, SolidWorks, and AutoCAD after working with a team of engineers to troubleshoot a few design flaws, resulting in a 20% improvement in overall efficiency and aesthetics.

CERTIFICATIONS

- Successfully completed an online certificate program on "**Control of Mobile Robots**" from the Georgia Institute of Technology and "**Introduction to CAD, CAM, and Practical CNC Machining**" from Autodesk on Coursera.
- Completed online certificate programs on "**ROS2 For Beginners**," "**TensorFlow 2 and Keras**," and "**Pro Engineer Creo Fundamental 3D Design**" on Udemy.
- Obtained an online certificate in "**AutoCAD**" from Internshala.
- Achieved an online certificate in "**PYTHON**" from GUVI.
- Volunteered for and organized the workshop titled "**Dronity 2.0: From Concept to Reality**."

ACADEMIC PROJECTS

Simulation for Forward and Inverse Kinematics of Hexapod Oct 2022 - Dec 2022
Arizona State University, Tempe, Arizona

- Using an interactive webpage designed in JavaScript, the simulation of hexapod kinematics can be performed based on dynamic inputs sent by the user.
- This can be carried out with remarkable accuracy, providing up to 95% precision in the simulated results.

Predict the Rating for a User using Jaccard Similarity Oct 2022 - Dec 2022
Arizona State University, Tempe, Arizona

- As a result of experimenting with a variety of machine-learning algorithms, we found that the Jaccard similarity approach outperformed the bag of words approach with a significant improvement of 15% in accuracy.
- This approach can also be applied to other types of machine learning, leading to similar performance enhancements.
- Depending on the rating a user has given on previous purchases, the model can also provide a personalized product recommendation. The rating is determined by analyzing the ratings of similar users with similar purchase patterns, resulting in a recommendation accuracy of 80%.

Vehicle Collision Detection System Jan 2021 - Apr 2021
Kumaraguru College of Technology, Coimbatore, India

- The main objective of this project is to save victims who need emergency medical attention. Through a gyroscopic sensor on the bike, the device will be able to identify when an accident has occurred with a high accuracy rate of 85%.
- The system will then be able to identify the type of accident and alert the emergency services and ambulances, ensuring the Golden hour of 10 mins.

The Automatic Refill Notification System Jan 2020 - Apr 2020
Kumaraguru College of Technology, Coimbatore, India

- This can be used in bubble-top water dispensers, with the help of a water level sensor and GSM module, the device can send a prompt notification to the maintenance staff indicating the location and status of the dispenser enabling rapid refills.
- This technology has been shown to reduce refill response time by 30 mins, improving overall efficiency and customer satisfaction.