RAHUL AREAPAKA

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EDUCATION

École Centrale School of Engineering, Mahindra University — *Hyderabad, Telangana, India*
Bachelor of Technology in Computer Science and Engineering | SPA: 7.56 — Oct 2020 – Exp. June 2024

Our Own High School Al Warqa'a, GEMS Education — *Dubai, United Arab Emirates*
Science Stream with Computer Science, CBSE | Overall Percentage : 82.3% — April 2010 – March 2020

SKILLS

Programming Languages: C, C++, Python.
Operating Systems: Linux, Windows, WSL.
Technical Tools: Arduino, Raspberry Pi, OpenCV, Autodesk Fusion 360, Git, VS Code, Image Processing, IoT, NodeMCU.
Interests: Robotics, Reverse Engineering, Product Engineering, Rapid Prototyping, Hardware Hacking, Product Innovation.
Activities: World Robot Olympiad, Babson Build Challenge, MU Hult Prize, FIRST Tech Challenge, Hacktoberfest, TEDx.

EXPERIENCE

Center of Excellence Artificial Intelligence and Robotics, GEMS DAA — *Dubai, United Arab Emirates*
Project Lead and Robotics Designer — June 2021 – July 2021

- Designed a dashboard for Renault Twizy Self Driving Car at the GEMS DAA which unlocks the car using facial recognition and can add multiple faces and syncs google maps and music player based on facial recognition.
- The dashboard also can automatically start the car using Arduino and Relay based upon the facial recognition using Bluetooth module.
- This project was a collaboration with GEMS DAA, Center of Excellence Artificial Intelligence and Robotics.

FarmBot Inc — *Dubai, United Arab Emirates*
Project Lead and Robotics Designer — April 2021 – June 2021

- Designed a laser mount for the FarmBot kits which detect weeds by using weed detection computer vision and gives the coordinates and then kills the weeds precisely using 500mW laser connected to the Farmduino, Arduino, and Raspberry Pi.
- This project was a collaboration between FarmBot Inc (an Open-source organization) and GEMS DAA, Center of Excellence Artificial Intelligence and Robotics.

Team UAE - World Robotics Olympiad — *Dubai, United Arab Emirates*
Team Leader and Lead Programmer — March 2018 - December 2018

- Designed and worked with various microcontrollers and single-board computers and developed a cable suspended robot for agricultural farms and high-tech greenhouse farms and solves soil compaction crisis in farming lands and raised AED 60,000 in funding.
- The project also included onboard computer vision to detect various plants and precisely perform farming and was presented at World Robotics Olympiad, UOWD, and MURS.

SELECTED RESEARCH PROJECTS

Project Cyclops - Laser Killing Weeds Module — April 2021 - June 2021

- Created a Laser Module for FarmBot Genesis as a Proof of Concept where the onboard camera would detect the weeds in the farm and call the locations of the weeds using API and precisely go the location, calculate the offset, and power the laser to kill the weeds. This reduces mechanical movement, a faster and more efficient way to destroy weeds from farms.
- This Module would roll out to all the farmbot consumers in 2023 (Expected).

Co-Axial Drone – Increase Flight time — January 2021 - Present

- Created a 3D rendering of the Coaxial drone using Autodesk Fusion 360 and designing the battery layout using 18560 batteries.
- This project is part of the Babson Build Challenge and makes the prototype to increase flight time up to 80 mins and use solid-state batteries instead of lithium-ion or lithium polymer-based batteries for environmental and safety purposes.

Cable Suspended Robot – Clara | Dolly — May 2018 – January 2019

- Created a 6 Degree of Freedom robot controlled by stepper motor using custom gear ratio and controlled using multiple types of microcontrollers over 12C Protocol and the movement is computed using the distance formulae.
- This project is made to be used in the Agriculture field to tackle the social compaction issue and presented at the World Robotics Olympiad and Mahindra University Research Symposium and used as proof of concept for a shipping company based in UAE which is used to clean large shipping containers.

LEADERSHIP AND AWARDS

- **Team Leader and Programmer/Builder Head** - Team UAE WRO | FIRST Tech Challenge
- AI Camp @OOW **Head** | **Innovation Captain** and **Student Council** @ OOW
- **Finalist** for Global Babson Collaborative challenge – Bachelor's level (**Top 10 Teams**)
- **First Place** at Mahindra University Research Symposium
- **Think Award** at FIRST Tech Challenge | **Mentor** and **Judge** at the FIRST Lego League – National Level 2020 and 2021
- **14th Place** at the World Robotics Olympiad Thailand – **Team UAE** | **First Place** at the National Robotics Olympiad UAE
- **First Place** at Technobizad Business Challenge | **First Place** at University of Wollongong – Robotics Annual Competition