NITHYAASHREE GIRIDHARAN

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ACADEMIC QUALIFICATION

Bachelor of Engineering in **Aerospace Engineering**, R.V. College of Engineering, Bengaluru; year of completion: Aug 2023, CGPA:8.76/10

WORK EXPERIENCE

Mechatronics Engineer, Trify EV, Bengaluru, Apr 2023 - Present

- Contributing to the development of IoT solutions for swappable battery charging stations, which are to be deployed in Africa.
- Contributed to the development of the key mechanical structure of the charging station.
- Developed an ecosystem for battery data reading and analytics on the cloud.

Structures Intern, Range Aero, Bengaluru, Sep 2022 – Nov 2022

- Assisted the team in the development of a scaled-down coaxial helicopter which was displayed at Defense Expo 2022.
- Instrumental in setting up an AUV proposal for the company that was used for collaboration with IIT Kharagpur.

Research Intern, NMCAD Lab @ IISc, Bengaluru, Jan 2022 – Jul 2022

- Conducted analysis on various materials that can be used for the floor of an eVTOL aircraft.
- Involved in spearheading the composite research and analysis in the eVTOL project and worked extensively on the research of Aluminum Sandwich composites and performed the analysis on MATLAB, Ansys, and Digimat.

Team RuaV, Bengaluru, Jan 2021 – Aug 2023

- Founded and led the drone building team for the purpose of mitigating several drone technology gaps.
- Worked on designing, developing, and integrating quadcopter drones.
- Worked with software like MATLAB, Fusion 360, Mission Planner, and Arduino IDE and made use of coding languagessuch as C, Python, and Java for the complete end-to-end development.

Team Antariksh, Bengaluru, Jun 2019-Mar 2023

- Contributed to the development of a model rocket for testing purposes and a sounding rocket that was launched in the LatinAmerica Space Cup 2023.
- Promoted to Chief Subsystem Engineer of Airframe, primarily focusing on structures, materials, and design.
- Worked with Fusion 360, Ansys, Solidworks, CATIA, and Digimat for the development process of the rocket.

ACADEMIC PROJECTS

Title: Aircraft Simulator
Duration: Mar 2020-Jun 2020 **Team size: 0**1
Summary: A flight simulator was designed and built at home for the purpose of getting accustomed to various flying maneuvers and controls in a flight. It included a complete build of the overhead panel, yoke, and throttle. It was built on an Arduino environment and integrated with an open-source flight simulator software.

Title: Development of Sounding Rocket
Duration: Aug 2019-Mar 2023 **Team size:** 80
Brief Description: The objective of the project was to develop a sounding rocket with a desired apogee of 10,000 feet and conduct small experiments during the flight.
Individual Role: Involved in the design of sounding rocket systems and mainly involved in the subsystem of structures, materials, and design. Developed several innovative designs including active rocket stabilization, and performed analysis and calculations. The rocket was for the competition Latin America Space Challenge, 2023 conducted in Brazil, which was launched successfully.

Title: Development of Micro-UAS
Duration: Jan 2021-Aug 2023 **Team size:** 10
Brief description: The goal of the project was to develop a quadcopter with a maximum altitude of 60 m and drop the payload on a given target using image detection techniques.
Individual Role: Led the 10-member team and developed drone systems including quadcopters of less than 2kg that can beused to deploy payloads at different terrains and environments. Involved in the development and integration of the drone. Worked primarily with Fusion 360, MATLAB, Ansys, and Mission Planner. The drone was built to take part in the national-level drone challenge AeroTHON conducted by SAE and later was used for events and other analyses.

Title: Integration of AUV and UAV along with an intermediate communication buoy
Duration: Mar-Jul 2023 **Team size**: 4
Brief Description: This final year thesis involved the development of a complete end-to-end system of AUV UAV and an intermediate floatable communication buoy.
Individual Role: Played a key role in developing the TinyML framework for AUV communications on ESP32 and was involved in the assembly and integration of the electronics onboard the AUV. Performed Fourier analysis and more post-processing techniques for analysis post-testing.

TECHNICAL SKILLS

- **Languages**: C, Java, Python, C++
- **Web Technologies**: HTML5, CSS3, Javascript
- **Database:** MySQL
- **CAD Software:** CATIA, Solidworks, Fusion 360
- **Analysis Tools:** MATLAB, Ansys, Digimat, Openfoam, RoboAnalyzer
- **Other Tools:** ROS, Arduino, Raspberry Pi

PUBLICATIONS

- Design and Simulation of an Unmanned Aerial Vehicle System as Communication Relay for Autonomous Underwater Vehicles, TJIER Journal,2023
- Next-Gen Swarm Cubesats' Synchronization and Re-Programmability, CSITSS, Institute of Electrical and Electronics Engineers (IEEE), Bengaluru, 2022
- AARAMBH, The Futuristic Lunar Surface Vehicle, International Astronautical Congress 2020 Cyber-edition
- Universal positioning system-the future of space navigation, IAC 2021 Dubai
- AARAMBH V2, The futuristic lunar surface vehicle, IAC 2021 Dubai

AWARDS AND ACHIEVEMENTS

- Received M. Kannan Emerging Talent of the Year 2022 award by the Society of Automotive Engineers
- Won first place in the international finals of Citython Hackathon, Netherlands 2020
- Competed and finished with a high ranking in the IBM Quantum Africa Challenge conducted online in September 2021

CO-CURRICULAR ACTIVITIES

- Quantum Computing Workshop at RVCE in the month of May 2021
- AI & ML workshop by Mitra Robotics in the month of August 2023
- Gave a paper presentation at IAC 2021 Dubai on the use of Quantum Computing in Space Navigation and another on the development of a Lunar Rover Vehicle- Aarambh.
- Presented a paper on use of TinyML in Cubesats synchronization and re-programmability at Computational Systems and Information Technology for Sustainable Solutions, IEEE, Bengaluru
- Gave a technical presentation at SAE AeroTHON 2022, on the technical development of the drone at SJC Institute of Technology, Bengaluru

EXTRACURRICULAR ACTIVITIES AND COMMUNITY SERVICE

- Volunteered for cleaning and creating hygiene awareness in a government school at Khazimakan Government School, Bengaluru, April 2023
- Conducted workshops on 3D Printing and Web Development at college for fresher students at RV College of Engineering, November-December, 2022.
- Developed websites for various institutions and groups during 2019-2023 - www.teamantariksh.in, www.aeromania.in, www.projectxlabs.in