SANKARA NARAYAN V

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EDUCATION

EASWARI ENGINEERING COLLEGE, RAMAPURAM, CHENNAI (2019-2023)
- **Bachelor of Engineering in Mechanical Engineering**
  - CGPA: 8.85
  - First Class with Distinction

PROJECTS

- **MORPHSEC DRONE**
  - Designed a transformable security camera with automatic weapon detection that morphs into a long-range autonomous drone, specifically designed to apprehend fleeing robbers.
  - Implemented a real-time weapon detection system using YOLO V3 to identify knives and guns.
- **PHOENIX BICYCLE**
  - Designed and prototyped an innovative bicycle incorporating a Continuous Variable Transmission (CVT) system for SAE Bicycle Design Challenge.
  - Optimized weight by designing of single cross tube frame connecting seat and head tube.
- **NEOTRIC ELECTRIC SCOOTER**
  - Designed an electric scooter featuring ram cooling intakes for enhanced battery performance in the SAE Electric Two-Wheeler Design Competition.
  - Explored diverse fuel cell technologies, focusing on Metal-air and Lithium polymer batteries.
  - Developed a IoT based Battery health monitoring system using Adruino IoT Platform.
- **REDUCING NVH IN AUTOMOBILE HVAC**
  - Identified Major Noise sources in HVAC system of a TATA INDIGO car.
  - Developed innovative solutions, including the integration of resonators and custom blower blade design, to mitigate NVH in Automotive HVAC for L&T Techgium Competition.
  - Simulated and analysed the efficiency of proposed solutions using COMSOL Multiphysics.
- **SAE AERO DESIGN UAV**
  - Developed a long range fixed wing UAV with payload capacity of 5 kg for SAE Aero Design Challenge.
  - Designed the UAV to reach a flight altitude of 1500 meters and sustain flight for 20 minutes.
- **ANALYSIS OF COMBUSTION CHARACTERISTICS OF RDE ENGINE**
  - Numerically Simulated and analysed combustion characteristics of Rotating Detonation Engine addressing issues of pressure back propagation, stability and direction of detonation wave in ANSYS FLUENT
  - Employed diverse meshing strategies, including Structured and Unstructured mesh through ANSYS ICEM and Fluent Meshing, to optimize simulation efficiency and reduce computational costs.

SKILLS

- **CAD & SIMULATION**
  - SolidWorks,
  - CATIA V5,
  - Siemens NX
  - Ansys ICEM, Fluent, Mechanical
  - Comsol Multiphysics
  - STAR CCM
- **PROGRAMMING & AI**
  - Python
  - C
  - C++
  - Tensorflow
  - Matlab
  - Simulink

CERTIFICATIONS

- Non Conventional Energy Resources - Indian Institute of Technology, Madras
- Fundamentals of Artificial Intelligence - Indian Institute of Technology, Guwahati
- Deep Learning Computer Vision, CNN, OpenCV, YOLO, SSD & GANs - Udemy
- AutoCAD - Autodesk
- Deep Learning: Advanced Computer Vision - Udemy
- Solidworks Essentials

EXPERIENCE

- **The Eplane Company(IIT-M NCCRD) |CFD Intern|**
  Sept 2022 - July 2023
  - Worked in development of custom BET (Blade Element Theory) Code in MATLAB to design propellers.
  - Carried out both transient and steady state Numerical Analysis of propellers using employing various turbulence models.
  - Engaged in a research study focused on determining the optimal propeller position for a 2-seater aircraft to minimize drag and maximize Thrust using Numerical Analysis.
  - Assessed and selected electric propulsion units (motors) for a UAV with MTOW of 160kg.
  - Conducted an in-depth analysis of the overall system performance of a 50 kg payload UAV equipped with 20 propellers, combining flight data and numerical analysis.
  - Worked on enhancing the accuracy of propeller Numerical Analysis to exceed 94 percent, based on flight test data.
  - Developed and optimized custom user-defined function in C++ to simulate propellers as an actuating disc for numerical simulation and analysis.
  - Conducted edgewise flow study to evaluate the dynamic performance of propellers within a multicopter configuration.
  - Automated CFD tasks using PyFluent (pythonic way to transmit messages to Ansys Fluent)
  - Engaged in the optimization of the air-cooling system for a power plant through the implementation of NACA ducts.
  - Actively participated in the implementation of Quality Function Deployment (QFD) processes.

- **Society for Space Education Research and Development |Research Intern|**
  Mar - Apr 2022
  - Conducted in-depth research on Powder Bed Fusion manufacturing applied to Hall Thrusters.

- **Simulation lab |Research Intern| |Research Fellow|**
  Dec 2021- Jan 2022   Feb 2022- Feb 2022
  - Simulated and conducted study on performance of wing flap with vortex generators to enhance aerodynamic efficiency.
  - Performed thermo-structural analysis for aerospike nozzles in rocket engines, simulating and comparing the performance of toroidal and linear aerospike nozzles.

HONORS & ACHIEVEMENTS

- **L&T Techgium Finalist - L&T Technology Services Limited**
  - Honoured with recognition as a "True Engineer" for successfully demonstrating a proof-of-concept in the National Finale of the L&T Techgium Competition.

- **Graduate Aptitude Test in Engineering(GATE)**
  - Achieved a top 5 percentile rank in GATE Mechanical Stream, which is one of the hardest graduate examination conducted in India that primarily tests the comprehensive understanding of undergraduate subjects in engineering and sciences for admission into technical postgraduate programs