ARUL VIGNESH M

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PROFESSIONAL SUMMARY

Aspiring Mechanical Engineer with hands-on experience in powertrain design, hydrogen engine conversion, and injector simulation. Skilled in CAD and analysis tools like SolidWorks and ANSYS, with a strong foundation in thermodynamics and fluid mechanics. A quick learner with a problem-solving mindset, eager to contribute technical and leadership skills to innovative engineering projects.

EDUCATION

Bachelor of Engineering in Mechanical Engineering 2022 - Present
CEG Campus, Anna University, Chennai. CGPA : 7.93

Class XII 2022
T.M.H.N.U.Mat.Hr.Sec,School - 96.16%

Class X 2020
T.M.H.N.U.Mat.Hr.Sec,School - 95.8%

SKILLS

Solidworks , AutoCAD, Ansys – Static Structural, OpenRocket , KISSsys.

EXPERIENCE

Conversion of Diesel Engine to H2 Engine *July 2025 – Present*
- Head modification to accommodate Spark plug and H2 Port fuel injector.
- Sensors Mounting for ECU integration.
- H2 lines installation.

Rocket Injectors - Hathor Rocket *June 2024 – July 2024*
- Learned fundamentals of cryogenic propellants through a project-based literature review.
- Gained practical experience with rocket injector systems, focusing on design and functionality.
- Simulated injector performance using ANSYS Fluent.

Fuel Properties – Anna University *June 2023*
- Analyzed key fuel properties such as flash point, fire point, viscosity to ensure safety and performance.
- Gained hands-on experience working with IC Engines.

Peck Drilling Machine – Anna University (Project) *May 2024*
- Developed a peck driller using pneumatic valves and actuators with electronic control via ESP32.

CMM – Anna University (Project) *September 2024*
- Analyzed hole quality (e.g., roundness) on Titanium and Aluminum plates using a CMM machine.

Sugar Rocket – Project *December 2024*
- Obtained thrust vs. time curve for a manually built solid motor.
- Designed and launched a 3D-printed rocket to reach 100 meters altitude.

- **Talyvel - Anna university - Project** *December 2024*
- Analyzed the flatness of metrology lab's bed using an electronic Talyvel machine
- Designed and launched a 3D-printed rocket to reach 100 meters altitude.

AREAS OF INTEREST

- Fluid mechanics
- Thermodynamics

POSITION OF RESPONSIBILITY

Powertrain Lead – CEG Motorsports (BAJA SAE Team) *2025–Present*

• Designed and fabricated drivetrain system for BAJA'26 vehicle.

Senior Drivetrain Member – CEG Motorsports (BAJA SAE Team) *2024–2025*

• Designed and fabricated a tensioner for the chain drive assembly and executed machining on a tubular chassis-based vehicle.

• Conducted workshops on Automotive Powertrain organized by CTF at Bannari Amman Institute of Technology and Kongu Engineering College.

SAEINDIA Student Member *2024–Present*

Placement Representative – Mechanical Engineering Department *2024–Present*

Overall Representative – Mechanical Engineering Department *2025–Present*

Head of Finance – Maathavam, Anna University *2025–Present*

Deputy Marketing head ,Mathavam, Anna University *2024–2025*

Junior Marketing Head , SME , Anna University *2023–2024*

ACHIEVEMENTS

• AIR 1 in Mega ATV conducted by AutoSports India

• AIR 12 in BAJA'25 SAEINDIA

CO - CURRICULARS

• Led the student volunteer team for "The Unsung Heroes" event held at Raj Bhavan, Tamil Nadu.

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