Shreyas Ravi

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Education

M.Sc. Motorsport Engineering Merit
Oxford Brookes University, Oxford, UK
September 2018 - September 2019
- Conducted research on Driverless vehicle analysis and compared control theories for Formula Student Autonomous Vehicle as master's dissertation.

B. Tech, Automobile Engineering 8.3 GPA
SRM University, Chennai, India
July 2014 - May 2018
- Designed, analysed, and fabricated Variable Length Intake Manifold as B.tech project.

Skills

CAD: Catia V5, Solidworks, Creo, Siemens NX
CFD: Ansys fluent, star ccm+
Other: LS-dyna, Matlab/Simulink, Adams, EcoCal, EM-tune, C++, Avl vsm; MoTec i2, Ni multisim, python

Projects

- Driverless Formula Student Vehicle, Control strategies and event analysis
- Variable Length Intake Manifold for small 4S IC engine
- Energy storage-inverter-motor system design for FS vehicle
- CFD analysis of wing & nose of F1 car
- IED Blast simulation on V-hull tank
- Vehicle Dynamics portfolio
- Exhaust manifold Adaptive Quarter Wave Tube design
- 2020 lmp1 car qualifying and race simulation analysis
- Lap sim analysis of hybrid vs non-hybrid lmp1 cars

Additional Certifications

- Model-based Automotive Systems Engineering (Chalmers-edX)
- Self-Driving Cars Specialisation (Coursera)
- Business Model Innovation in an Exponential World (TU/e)
- Mechatronics Systems Design (TU/e)

Publications

- "MPC Controller for Autonomous Formula Student Vehicle", SAE Technical Paper 2020-01-0089, 2020, doi: 10.4271/2020-01-0089
- "Design optimisation of Bicycle Wheel Hub Assembly for Automotive Applications", SAE Technical Paper 2022-01-0262, 2022, doi: 10.42771/2022-01-0262

Experience

Design & Development Engineer (research) – Automotive Systems Design
Eindhoven University of Technology, Netherlands 10/2022 – PRESENT
- The Experience emphasizes technical and professional competencies for designing efficient high-tech automotive systems.
- Developed Software for extrinsic calibration of ImRadar & camera in matlab achieving less than 15% error.

Systems Design Engineer Trainee – Tin Mechanics
ASML Holding N.V, Netherlands 10/2023 – 03/2024
- Conceived and executed virtual simulation models to optimize the performance of a high pressure-high temperature thermodynamic system, resulting in a 15% increase in efficiency and a 20% reduction in energy consumption.

Design and Development Engineer - Intern
DAF Trucks N.V, Netherlands 05/2023 – 10/2023
- Conceptualised and developed a Range Estimation tool tailored specifically for electric trucks using insights from Diesel truck data.
- Incorporated road gradient information from open-source platforms to enhance range estimation accuracy by an estimated 10-15%.
- Devised a methodology for precise range estimation of up to 5% without relying on simulation techniques.

Sr. Mechanical Engineer
Coexlion, Bengaluru, India 04/2022 – 10/2022
- Conducted CAE-FEA analyses on chassis for OEM clients, notably Royal Enfield.
- Utilized 1D modelling and mathematical simulations to analyse kinematic parameter of suspension and steering sub-systems.
- Defined control strategies and designed motor controllers with an entrepreneurial mindset.

Research & Development Mechanical Engineer
InGO Electric, Bengaluru, India 04/2020 – 03/2022
- Led a technical design team of four to develop an innovative powertrain system featuring an SRM Motor for enhanced low-end torque utilization.
- Created a mathematical 1D Matlab/Simulink model for the motor-CVT setup.
- Collaborated with the CAE team to formulate load cases for static and fatigue loading at component and full vehicle levels.
- Engineered an MBD (Multi-Body Dynamics) model to optimize Vehicle Dynamics parameters.
- Secured victory in Altair Start-up Challenge, winning a sum of INR 5 lac award.

Team Member (AI, EV & CV)
Oxford Brookes Racing, Oxford, UK 09/2018 – 01/2020
- Led a team of five as Powertrain EV Lead, overseeing the design, fabrication, and documentation of competition reports.
- Spearheaded the conceptualization and execution of calculations for the exhaust manifold, achieving a notable reduction in noise by 3-4 dB while enhancing performance through AQWT methodology.
- Innovated the development of a lateral controller for autonomous vehicles utilizing Simulink, alongside defining hardware requirements for software testing as a Control Systems Engineer.

Team Leader
Infieon Supermileage, Chennai, India 02/2017 – 04/2018
- Spearheaded a team of 26 individuals, achieving international acclaim for technical innovation at Shell Eco-Marathon Asia '18.
- Pioneered the implementation of diverse sub-teams, strategically restructuring operations to enhance productivity despite resource constraints.