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, analyzed, and fabricated Variable Length Intake Manifold as B.tech project.

Skills

CAD: Catia V5, Solidworks, creo
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

- Conducted research and analysis of autonomous electric vehicle.
- Studied various control theories and control strategies used in the Formula student and DARPA challenge for autonomous vehicle.
- Developed MPC and Lateral-Stanley controller for OBR electric Vehicle.
- State space models prepared for each controller design.

Variable Length Intake Manifold for small 4S IC engine

- Active length variation design to adapt the RAM supercharging between 3000-7000 RPM range.
- Rack & pinion design for length variation.
- Construction of self-designed rope dynamometer for testing and validation with 80% accuracy.

CFD analysis of wing & nose of F1 car

- Study of effect of yaw in lift and downforce generation experienced during cornering of F1 car.
- The design is as such to produce maximum downforce at 6-degree yaw angle.

IED Blast simulation on V-hull tank

- Developed V-Hull tank from the old v-hull military design material properties.
- CATIA v5 for meshing and LS-DYNA for Blast simulation.
- Used Oasys for post-processing.

Experience

Engineering Doctorate (EngD) – Automotive Systems Design
Eindhoven University of Technology, Netherlands 10/2022 – PRESENT

- Automotive sub-system software development & systems engineering.
- Developed Software for extrinsic calibration of ImRadar & camera in matlab achieving less than 15% error.

Sr. Mechanical Engineer
Coexlion, Bengaluru, India 04/2022 – 10/2022

- Performed CAE, FEA analysis for OEM clients.
- Conducted 1D-Modelling and mathematical simulation of sub-systems.
- Modelling kinematic parameters of Automotive sub-systems.
- Defined Control strategies and Motor Controller design.

Sr. Research & Development Mechanical Engineer
InGO Electric, Bengaluru, India 04/2021 – 03/2022

- Led the technical design team of 4, to develop novel powertrain system with SRM Motor to effectively utilize the Low-end torque.
- Developed mathematical 1D matlab/simulink model of the motor-CVT system.
- Defined processes and methodologies like FMEA, DFM, GD&T, etc.
- Facilitated the CAE team with the formulation of load cases, encompassing static and fatigue loading, both at the component and full vehicle level.
- Developed MBD (Multi-Body Dynamics) model for studying Vehicle Dynamics parameters.
- Won the ASC '21 (Altair Start-up Challenge), securing 3.5lac Rs award.

Founder & Technical Officer
RS Automotive pvt ltd, Bengaluru, India 01/2020 – 03/2022

- Automotive 2W and 3W electric vehicle Consultancy.
- Technical support for organizations and start-ups in chassis, CAE and kinematics.
- Vehicle integration: CAD, CAE, GD&T, DFM, DFMA.

Team Member (AI, EV & CV)
Oxford Brookes Racing, Oxford, UK 09/2018 – 01/2020

- Being a stand-in powertrain EV lead, managed a team of five to design, fabricate and document reports for competition.
- Conceptualized and carried out the calculations for the exhaust manifold to reduce noise by 3-4 dB and improve performance using AQWT.
- Developed a lateral controller for autonomous car using Simulink and hardware requirements for testing software, being control systems engineer.

Team Leader
Infieon Supermileage, Chennai, India 02/2017 – 04/2018

- Managed a team of 26 People, the team won Its first award overseas for technical innovation at shell eco-marathon Asia '18.
- Introduced a variety of new sub teams to restructure the team, improving productivity with the limited resources available, resulting in the team attaining best Indian team status.

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

Additional Certifications

Model-based Automotive Systems Engineering Chalmers-edX

- Modelling and simulation of system dynamics in automotive engineering