# Shreyas Ravi

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## Education

**Oxford Brookes University, Oxford, UK**
M.Sc. Motorsport Engineering, Merit
September 2018 - September 2019

- *Conducted research on Driverless vehicle analysis and compared control theories for Formula Student Autonomous Vehicle as master's dissertation.*

**SRM University, Chennai, India**
B. Tech, Automobile Engineering, 8.3 GPA
July 2014 - May 2018

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

## Skills

**CAD:** Catia V5, Solidworks
**CFD:** Ansys fluent, star ccm+
**Other:** LS-dyna, Matlab/Simulink, Adams, EcoCal, EM-tune (*engine calibration software*), Avl vsm; MoTec i2, Ni multisim

## 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**

- ***A**ctive 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.*
- *Oasys was used as post-processing tool.*
- *Model was successfully analysed for blast simulation on the undertray of military tank.*

## Experience

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

- *Leading the design team of 4, managing R&D projects.*
- *Developing novel powertrain system with SRM Motor to effectively utilize the Low-end torque.*
- *Developing 1-D simulation Matlab/Simulink model of the motor-CVT system.*
- *Methodology engineer, defining processes like FMEA, DFM, etc.*
- *Providing CAE team with load case development for static and fatigue loading at component and full vehicle level.*
- *MBD model development for the FLEE and TRON models for studying Vehicle Dynamics*

**Team Member (AI, EV & CV)**
Oxford Brookes Racing, Oxford, UK 09/2018 – 09/2019

- *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 fulfil hardware requirements for testing of 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.*

**Team Driver and Powertrain Lead**
Infieon Supermileage, Chennai, India 04/2015 – 02/2017

- *As the combustion powertrain leader, developed a unique rear wheel hub specific for the vehicle and proposed an innovative clutch design to improve coasting distance by 56% and reduce rolling resistance.*
- *Collaborated with the electrical team to convert carbureted engine to fuel injected engine, while also developing ram intake and ceramic coating, improving fuel efficiency by 16%.*

**SUMMER INTERN**
TAFE, Chennai, India June 2017

- *Studied different gear production methodologies and understanding the gear architecture of TAFE gear cum steering casing.*
- *Suggesting international standards be implemented and ways to implement them with the help of report.*

## Publication

"MPC Controller for Autonomous Formula Student Vehicle", SAE Technical Paper 2020-01-0089, 2020, https://doi.org/10.4271/2020-01-0089

## Additional Certifications

**Model-based Automotive systems Engineering** Chalmers-edX

- *Modelling and simulation of system dynamics in automotive engineering*