Aditya Rastogi

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Education

- **Indian Institute of Sciences** — Bengaluru, India
  Ph.D. in Computational and Data Sciences; CGPA: 8.80/10 — Aug. 2018 - Present
  Mentor:- Dr. Phaneendra Yalavarthy

- **Delhi Technological University** — New Delhi, India
  Bachelor of Technology in Mechanical; Percentage: 81.1 (8.86/10.0) — Aug. 2012 – July. 2016

Research interests

My research interests are computational methods in medical imaging, multi-modal imaging, medical image reconstruction techniques, physiological modelling of pathologies using multi-modal data, cardiovascular imaging.

Ongoing Projects

- **Sparse DCE MRI parameter estimation:-** — IISc
  Under Dr. Phaneedra Yalavarthy (Mentor) — Feb 2019 - Present
  - **Task**: To determine arterial input function (AIF) and Tracer Kinetic maps from undersampled DCE MRI k-t space data.

- **CT material decomposition** — IISc
  Under Dr. Phaneedra Yalavarthy & SSSIHMS — Jan 2019 - Present
  - **Task**: Using dual energy CT scan data differentiate, between Otitis media and middle ear Cholesteatoma by material decomposition. *In tendem with Shri Satya Sai Institute of Higher Medical Sciences.*

- **Fusion of Cardiac Angiography Images** — IISc
  Under Dr. Phaneedra Yalavarthy & SSSIHMS — Jan 2019 - Present
  - **Task**: Fusion of Cardiac Angiography images of different RR phases using guided image fusion. The ECG data is used to detect the phases with less motion of right coronary artery. The objective is to reduce the number of study images required by the diagnostician for detecting stenosis in RCA or LDA. *In tendem with Shri Satya Sai Institute of Higher Medical Sciences.*

Completed Projects

- **Defianz Racing, DTU Formula Student Team** — DTU
  Aerodynamics and Bodyworks department — 2014 - 2016
  - **Overview**: Defianz Racing is an undergraduate student team of DTU which focuses on designing and developing a formula race car to participate in FSAE competition organised by SAE.
    https://www.facebook.com/teamdefianzracing/
  - **Task**: **1.** Designing of undertray diffuser and side pods of the car for increasing the downforce for providing better traction. **2.** Fabricate the package with carbon fibre using in-house vacuum bagging process.
  - **Participation**: FS India 2016 (now formula bharat) at BIC, Noida and got 3$^{\text{rd}}$ for business proposal

- **Autonomous Underwater vehicle, DTU** — DTU
  Team Lead — 2012 - 2016
  - **Task**: Designed and fabricated ZYRA and ZYRA 2.0, 5th generation model of DTU AUV capable of grabbing objects and navigating its path by digital image processing and passive sonar navigation. It had the capacity to go up to 50 feet of depth and has 6 degrees of freedom. http://auv.dtu.ac.in
  - **Application**: Funded by ONGC for its potential application in offshore pipeline fault detection and repairing
  - **Participation**: **1**. RoboSub 2013,2014 organised by AUVSI in San Diego, California and went into semi-finals. **2**. NIOT SAVe 2014 a competition for autonomous underwater vehicles held in Chennai, India.

- **Computational modelling of Composite dynamics and fabrication techniques** — DTU
  Bachelor's Thesis — 2015-2016
  - **Task**: The thesis was a part of my project of Defianz racing in which I built a MATLAB library for computing the dynamics of Carbon fibre composites and calculated their deformations under tensile, compressive, shear, thermal, moisture and curing induced stress for different layers of composites and their orientation. The library could be used to analyze the final shape of the composite after curing based on the orientation of the layers.
  - **Application**: Main application was to decided the orientation of CF layers w.r.t each other while fabricating the aerodynamic packages of the car so that the composite takes the shape of the mould without much distortion.

Professional Experience

- **R&D Hero Moto Corp** — Jaipur, India
  Assistant Manager , Engine Calibration and Emission group — *Dec 2017 - July 2018*
  - **Power Train Control Strategy development**: ECU control strategy development for BS 6 vehicles along with Magneti Marelli (Italy)

- **R&D Bajaj Auto ltd.** — Pune, India
  Senior Engineer, Engine Calibration and Emission group — *Aug 2016 - Oct 2017*
  - **ECU calibration**: Powertrain Calibration and Validation aspects of gasoline engines with Bosch Motronic software structure for Bajaj 2W.
  - **Developing MIL algorithm**: Developing MIL(model in loop) testing algorithms for control strategy department to meet ISO26262 safety regulation, emission reduction and performance optimization

Programming Skills

- **Languages**: MATLAB, Python, C