Rishi Dhar

Master Thesis Student @Siemens in CFD Simulations for Battery Production

Profile

CFD & DEM Simulation | Battery development | Multiphase Solver Development | Experienced Design Engineer| FEM Simulations |Fluid Structure Interaction | Thermal Simulations |

Academic Experience

Student Research Assistant, Institut für Technische Verbrennung, Aachen
February 2022

- Spray Simulations (using Fotran) on RWTH cluster preparing reduced order models in coherence with experimental results.
- Extending the model for multi fuel multiphase fuel injections using ECN data for validation along with in house experimental data.

Student Research Assistant, Institute of Jet Propulsion, RWTH Aachen
December 2022 — April 2023

- LES for Compressor Blade Cascades using Trace for Periodic Boundary Conditions in coordination with MTU.
- Postprocessing using Tecplot and Pytecplot for Temperature and Pressure Contours.
- Data filtering and model validation in python.

Education

Masters in Computer Aided Conception in Mechanical Engineering, RWTH Aachen, Aachen
October 2021 — Dec 2023

Grade: 2,0

Bachelors in Mechanical Engineering, Maulana Azad National Institute of Technology Bhopal, Bhopal
April 2013 — June 2017

- Graduated among top 10% of Class.
- Grade 1,9

Professional Work

Master Thesis at SIEMENS, Munich
May 2023 — December 2023

- Preparing a nano-scaled model to replicate the cathode slurry components including PVDF, CB in NMC. Model validation using experimental results.
- Viscosity vs shear analysis for non-newtonian fluids using CFD solvers along with coupling discrete element method(DEM) and the nano-scaled model..
- Model validations with experimental data on CFD DEM Coupling
- Thermal runaway simulation of Li-ion batteries for NMC Cathodes.

Intern at SIEMENS, Munich
March 2023 — May 2023

- Created and validated models for Battery Slurry mixing using CCM + and NX.
- Worked on OpenFOAM for running mixing modules.

Details

Karl-Marx-Ring 62, Munich, 81735, Germany,

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Date / Place of birth

08/11/1995

Kolkata, India

Nationality

Indian

Links

Linkedin | GitHub

Skills

- Star CCM +
- Java
- OpenFOAM
- NX
- Python
- FORTRAN
- Ansys
- Data Analysis
- Tecplot
- Matlab
- Solidworks
- Hypermesh
- Contract Negotiation
- Management Skills
- Flexibility and Adaptability

Languages

- German
- English

Design and Thermal Engineer at Bharat Petroleum, Vadodara
July 2017 — June 2021

- Worked on integrating the existing automation and safety PLC along with managing an expansion project for the Manmad terminal worth 600 Cr INR capex.
- Thermal validation simulations for guaranteeing flameproof nature of Rubber Safety nets on Hydrocarbon Sensors and Blow-valves.
- Performed DFM and DFA on Solenoid Valves and Piezo-electric sensor on Pipeline Walls and integrating with PLC.

Summer Intern at Hero Moto Corporation Limited, Gurgaon
May 2016 — July 2016

- Designed and constructed an Engine Test Bench. This helped in delivering 100% quality certification on Engine Exports.

Projects

Design Lead at Electric Solar Vehicle Championship, Bhopal, India
January 2015 — July 2016

- Leadership and Budget responsibilities for 5 member Team.
- Design and Manufacturing of 1.2 Cd Drag Chassis for a Solar Operated Vehicle including Lightweight Alloys and highly ergonomic and safe roll cage.

Project Leader at Canard Missile Design , Bhopal, India
July 2016 — January 2017

- Designed Nose Profile(CATIA and Solidworks) for Canard type Missiles analyzing Mach profiles at Transonic Flows (ANSYS)

Team Member at Exhaust Gas Recirculation, Bhopal
January 2015 — June 2015

- Prototyped an EGR for simulating real-time behaviour.
- Measured COx, NOx emissions using Exhaust Gas Analyzer under different Load conditions.

Courses

Introduction to Machine Learning in Python, Coursera

Artificial Neural Networks, Udemy

Engine and FI Technology, Bosch

Achievements

Gear Up for GMV, Bharat Petroleum Corporation Limited
July 2020

FINO payments Bank Limited's collaboration with BPCL has promoted banking at the village level. This has also been achieved through our presence in the rural market. The innovative relationship between BPCL and FINO has simplified the distribution and handling of cash and made life easier for countless citizens.

Best Design Award, Electric Solar Vehicle Championship.
April 2016

Award for the best design for a solar-powered vehicle in a nationwide competition called ESVC in 2016. Across India, more than 150 universities participated, of which our design was rated best in the areas of safety, weight reduction, and

ergonomics.

Hindi