MRIDUL AGGARWAL AMIMechE
MSc Aerospace Computational Engineering

Location: Milton Keynes, United Kingdom
Mobile: + 44 (0) 7824046057
Email id: aggarwalmridul@outlook.com
LinkedIn: https://www.linkedin.com/in/mridul-aggarwal-2000
Website: https://mridul8878.github.io/mridulaggarwal-portfolio/
Nationality: INDIAN (Currently holding 2 year Graduate
United Kingdom Visa till Dec 2024)

PERSONAL STATEMENT

Demonstrates profound knowledge of mechanical engineering projects and stronghold in developing modelling simulations using different commercial software and tools with attained mechanical knowledge. Firsthand experience in distributed scientific computation for replicating and investigating different turbulence behaviour. Strong collaborator having collaborated with global teams on different projects related to engineering and project management.

KEY SKILLS & HIGHLIGHTS

Computational Engineering: High-Performance Computing, Computer Aided Engineering & Design, Finite Element / Volume Analysis, Computer Aided Modelling

Engineering Software: MATLAB Simulink, ParaView, Tecplot, Abaqus, Solidworks, ANSYS Workbench, Fluent, SpaceClaim, CFD-Post, CES Edu Pack, Latex, Overleaf, Microsoft Office, C++, C, Python, LINUX.

Language: English (Professional), Hindi (Native), Sanskrit (Beginner)

For more detailed information about my projects please look at my website: https://mridul8878.github.io/mridulaggarwal-portfolio/

KEY ACHIEVEMENTS

- Experienced in using UDF in ANSYS Fluent and parallel computing using HPC.
- Implemented discrete phase modelling to track sneeze particles using multiphase flows in the ANSYS application.
- NASA Space School Certification for being part of the team to work on rover functioning and demo rocket launching at NASA in the USA.

WORK EXPERIENCE

Contractor at Cranfield University, UK (November 2022 – present)

Working as a contractor for Cranfield university in the computational science department in collaboration with Dr. Laszlo Konozsy in the field of Aerospace Computational science simulating the different ventilation systems to minimize the impact caused by a covid infected personnel inside an aircraft.

INDUSTRIAL EXPERIENCE

RACL GEAR TECH LTD: Gajraula, Uttar Pradesh, India - Internship (January 2021 - April 2021)

- Allocated as a Production process quality engineer to overlook process quality for gear manufacturing on daily basis and to solve issues faced by the machine operator
- Conducted 60 Internal Process Audits as well as a Process Capability Study to analyze machines' efficiency for better manufacturing productivity
- Prepared root causes analysis for five gear process on gear rejections resulting in a decrease in rejections in a 2-month time
- Co-ordinated with the project head in the installation of new gear manufacturing machines

EDUCATION

MSc: Aerospace Computational Engineering, Cranfield University, Cranfield, UK (September 2021 – August 2022)

- **Modules:** Computational Methods & Engineering Structures, Numerical Modelling for Compressible / Incompressible Flows, Analysis & Visualization of Big Data Systems & High-Performance Computing, Modelling Approaches / Validation & Verification for Aerospace Applications.
- **Grade:** Achieved 79.55 % with distinction (Class Rank: 2).
- Awarded £2,000 "Course Director scholarship" at the beginning of the course.

Bachelor of Engineering (Honours) (Mechanical): The University of Newcastle, Australia (August 2017 - May 2020)

- With strong grades in Engineering Mathematics I, II, dynamics, control systems, and Thermodynamics fluids with training in MATLAB, C, Solidworks, and other engineering tools.
- **Grade:** Achieved 2:2 degree

ACADEMIC PROJECT EXPERIENCE

Numerical Investigation of the Airflow Ventilation system in the Interior of an Aircraft Cabin in Presence of an Infected Passenger September 2022

Completed successfully by placing a modified displacement ventilation system for the aircraft cabin and implementing the discrete phase modelling to track the virus particle movement inside the aircraft cabin. Additionally, learned the use of parallel computing by using High-Performance Computing for my research project.

Jetstream 31 full aircraft simulation May 2022

Led a team of five to work on "Aircraft Simulation" focusing on the simulation of the Jetstream 31 full aircraft and/or a model aircraft simulation to gain transient data in terms of lift and drag coefficient for relative analysis with experimental data using different Unsteady Reynolds-Averaged Navier-Stokes (URANS) and Detached Eddy Simulation modelling approaches for better prediction of airflow.

Simulation of Air Distribution in an Office room Ventilation by an Air-Conditioner April 2020

Worked on office room ventilation to decrease energy consumption and increase the oxygen level inside the office room for the personnel present within the enclosed room. Designed the office room using ANSYS Workbench and then a pressure-based solver implemented with a SIMPLE algorithm to model the airflow and thermal comfort of the people inside the room.

Developing Bicycle Sharing Mobility System for University Students November 2019

Collaborated with four other university students to develop a mobility system for setting up a bicycle-sharing system for university students. Cost and quality management was my sole responsibility in the group. The project idea given by me was to help students to cut down their travel costs and time during their stay at university.

INTERESTS & EXTRACURRICULAR ACTIVITIES

- **Membership:** CRANSEDS & Engineers Australia
- **Sports:** Table Tennis played from Junior School (2009-present), Swimming, Cricket, Lawn Tennis
- **Leadership:** Appreciation Certificate for work on TEDx PSB Academy, Singapore in 2018 had an audience of five hundred.
- **Volunteered**: Award of excellence by Indian Development Foundation in Resource Mobilization for Humanitarian Causes arranged for helping 1000+ people suffering from cancer.

OTHER WORK EXPERIENCE

Warehouse Operative – John Lewis **Milton Keynes, UK** **October 2022 – present**

Working in a highly busy John Lewis warehouse in Milton Keynes in extreme situations to achieve daily targets in terms of packaging, sorting, and loading the goods into the vehicle.