SREEKAR REDDY SAJJALA

Aachen, Germany. 52064

+49-1764 7085664

sreekar2858@gmail.com

Publications

[1] https://doi.org/10.1080/21681163.2020.1858968

[2] https://doi.org/10.1016/j.jmapro.2019.07.033

Skills

Programming Languages

Python	Advanced
C/C++	Intermediate
Java	Intermediate

CAD/ CAE Tools

Siemens NX	Expert
ANSA	Intermediate
ABAQUS	Advanced
Optistruct	Expert
Radioss	Advanced
OpenFOAM	Advanced
Star-CCM+	Advanced
Ansys	Advanced
Paraview	Advanced

Languages

German	A2
English	C2

Mechanical Engineer specializing in CAE and CFD analysis with over 3 years of experience in simulation-driven design and optimization. Proficient in industry-standard tools such as **ANSYS**, **OpenFOAM**, and **ABAQUS** with a strong focus on fluid-structure interaction, thermal analysis, and advanced topology optimization. Proven ability to enhance product design through accurate simulations and multi-disciplinary collaboration. Currently seeking to leverage skills in a dynamic engineering environment to solve complex technical challenges.

Work Experience

Internship, Master Thesis — **10/2023 - 07/2024**

Siemens Energy - Mülheim, Germany

Topic: Generative Design of a Premixing Passage for a Hydrogen Combustor.

- Developed combustion simulation workflows using **Star-CCM+**, automating processes with **Python** and **Java** to streamline operations.
- Conducted combustion simulations and trained an **AI model** to augment datasets, allowing for advanced analysis without additional simulations.
- Integrated **Generative AI** toolchains for hydrogen combustion gas turbines, focusing on minimizing boundary layer flashback and optimizing performance.

Student Research Assistant — **08/2021 - Present**

RWTH Aachen University

- Created adjoint-based **topology optimization** workflows for coupled heat transfer cases in **OpenFOAM**, incorporating **neural networks** to accelerate solver runtimes.
- Enhanced a **MATLAB** program for generating aerogel geometries, transitioning to **C++** for improved performance and accuracy.
- Upgraded a VBA-based exam management system, developing a **Python** program to expand functionality and improve user experience.

Internship - Thermo-mechanical Engineer, Battery — **02/2023 - 08/2023**

Volocopter HQ - Bruchsal, Germany | *Reference Letter*

- Performed **mechanical and thermal simulations** on CFRP parts and **battery packs** using Optistruct and Star-CCM+, improving structural performance.
- Conducted modal analysis to optimize eigenfrequencies, enhancing the stability of battery packs.
- Investigated **thermal runaway** stresses for different battery configurations, ensuring compliance with EU safety standards.

Mini Thesis — **02/2023 - 08/2023**

Digital Additive Production - RWTH Aachen University

- Designed a **Neural Network**-based evaluation model for multi-purpose support structures, reducing the need for manual setup through automation.
- Accelerated the development of cooling channels by utilizing neural network evaluations, streamlining the design process.

CAE Engineer — **03/2019 - 08/2020**

Upwork

- Provided **design**, **simulation**, and **toolchain development** services across multiple industrial projects, delivering results within tight deadlines.
- Collaborated with clients to refine product designs and implement CAE analysis to meet project specifications.

Education

M.Sc: Computer Aided Mechanical Engineering **2020 - Present**
RWTH Aachen University - Germany
Electives: Parallel Computing, AI for Engineers, Data Science, and Adv. C++.
Addl. Courses: Additive Manufacturing and Turbulent Flows.

B.Tech: Mechanical Engineering **2015 - 2019**
BML Munjal University - India

Electives: Computational Fluid Dynamics, Robotics, and Bio-Mechanics.