Lakshmana rao gandi

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EDUCATION

Technical university Darmstadt Darmstadt **PRESENT**

MASTERS IN AEROSPACE ENGINEERING

Vignan Institute of Information and Technology **Visakhapatnam**

BACHELORS IN MECHANICAL ENGINEERING **Aug 2021**

PROJECTS

TUTORIAL PROJECT **TU Darmstadt – GLR Department**

CFD in Turbomachines

- Independently completed a 4-week project on transonic compressor simulation using ANSYS and MATLAB.
- Constructed and assembled compressor geometry (hub, shroud, rotor, stator) in ANSYS DesignModeler defined flow paths and boundary inputs.
- Generated high-quality meshes for rotor and stator using ANSYS TurboGrid ensured accuracy through mesh independence study.
- Performed CFD simulation in ANSYS CFX applied appropriate physical boundary conditions based on compressor specifications.
- Validated simulation results with experimental data provided by the university conducted post-processing and analysis using MATLAB.
- Tools & Technologies: **ANSYS DesignModeler, ANSYS TurboGrid, ANSYS CFX, MATLAB**

BACHELOR THESIS **Visakhapatnam**

Design and CFD Analysis of Wind Tunnel for Testing Aerodynamic Bodies

- Utilized **Siemens NX, ANSYS**, and **SOLIDWORKS** for engineering tasks. Contributed significantly as a team member.
- Led wind tunnel design using Siemens NX and CATIA. Created and analysed car body model.
- Conducted CFD analysis, assessing lift, drag, thermal, and stress factors on car body.
- Showcased innovative solutions in aerodynamics through Bachelor's thesis, emphasizing technical impact and problem-solving skills.

MACHINE LEARNING PROJECT **TU Darmstadt**

Prediction of Helicopter Flight Paths using ADS-B Data

- Collaboratively completed an 8-week project focused on predicting future helicopter positions using machine learning techniques.
- Utilized real-world ADS-B flight data of German HEMS helicopters (2017–2021), sourced from the OpenSky Network.
- Performed extensive data exploration and preprocessing, including time-series grouping and trajectory mapping using pandas and Matplotlib.
- Developed regression models to predict helicopter positions (latitude, longitude, altitude) 60 seconds ahead using structured flight data.
- Evaluated models using Root Mean Square Error (RMSE); ensured reliability through train-test splits and performance comparisons.

MASTERS ADVANCED DESIGN PROJECT **Darmstadt**

Literature report on Application of Rotating Detonation Engine

- Conducted in-depth research on Rotating Detonation Engines (RDEs).
- Gathered information from various literature to examine diverse applications in aircraft propulsion and space launch vehicles.
- Identified and documented key advantages and challenges of RDEs.
- Compiled insights and ongoing research efforts into a detailed report.

CERTIFICATIONS

SIEMENS NX SOFTWARE **Visakhapatnam**

- Familiarization with the interface and capabilities, creating 2D sketches and turning them into 3D geometry and Basic shape manipulation and understanding key features.
- Lofting, sweeping for complex shapes, Utilizing Boolean operations for shape manipulation and Implementing surface modelling techniques.
- Creating and managing assemblies, understanding constraints between assembly components and Generating 2D drawings with annotations and dimensions.
- Applying industry-standard practices for efficient CAD modelling, optimizing designs for manufacturability and performance, solving practical design challenges and troubleshooting and reviewing key concepts for certification readiness and practical exercises.

SKILLS

MS OFFICE SOLID WORKS SIEMENS NX AUTOCAD ANSYS MATLAB PYTHON CATIA FUSION360

LANGUAGES

ENGLISH (C2) GERMAN(A2)