

GANESH KUMAR REDDY BOMMAVARAM

GKRB@UW.EDU || (206.387.9641) || LINKEDIN: [HTTPS://WWW.LINKEDIN.COM/IN/GANESH-BOMMAVARAM/](https://www.linkedin.com/in/ganesh-bommavaram/)

TECHNICAL SKILLS AND CERTIFICATIONS

Design and CAE Analysis skills: Catia V5, Solidworks, Auto CAD, Ansys, Matlab, Python, MS Office, Davis LaVision.

Certifications: Introduction to Engineering Simulations by CornellX, FEA, CATIA (CAD software) by CADD Essentials, ANSYS Structural by Internshala, ANSYS Fluent by Udemy, Solidworks by Udemy, MATLAB Essentials from edX, Python from Udemy.

WORK EXPERIENCE

Propulsion Engineer, Abyom SpaceTech and Defence, India

Jan - June 2022

- Applied advanced engineering principles to **design and optimize a 750kN** liquid rocket engine.
- Designed a **CAD model** of the rocket engine in **CATIA** to perform **computational analysis**.
- Performed **heat transfer analysis** on regenerative cooling systems for the engine in **ANSYS**.
- Designed a **CAD model** and performed **structural analysis** of a test stand to test the rocket engine.
- Performed **CFD analysis** on **Aerodynamic stability fins** for rockets during landing conditions.
- Demonstrated a deep understanding of complex propulsion systems and provided crucial insights into the development of cutting-edge technologies in the aerospace industry.

Aerospace Summer Research Intern, AATWRI Aerospace & Defence, India

Jul - Nov 2021

- Pioneered** cutting-edge research on propellant-less **Electrogravitics Anti-Gravity** space propulsion technology.
- Worked alongside a talented team of **6** to **design a craft**, engine duct, and exhaust manifold using **Catia** and performed **CFD Analysis** to estimate high stress regions using **Ansys Fluent**
- Demonstrated exceptional design skills and beating out over **800** other applicants to secure this highly coveted position.

Trainee at Maintenance Training Organization, Air India, New Delhi, India

Dec 2019 - Jan 2020

- Executed comprehensive **aircraft maintenance** procedures, utilizing **non-destructive testing** methods to diagnose and repair complex mechanical and electrical systems on Airbus A320, contributing to the safe and efficient operation of Air India's fleet
- Among the top 1%** of interns to receive a performance rating of **90%** during the training.

Training Intern, Hindustan Aeronautics Limited (HAL), India

Jun - Jul 2018

- Conducted** in-depth research and analysis of the advanced **manufacturing processes** for multi-purpose turbojet engines (AL31-FP) used in Su30-MKI fighter jets, gaining valuable knowledge of the intricacies involved in the production of critical components such as compressors, turbines, combustion chambers, and nozzles, etc.

RESEARCH EXPERIENCE AND PUBLICATIONS

Aerodynamics Research Engineer, Kirsten Wind Tunnel, BOEING, Seattle, US

Jan 2023 - June 2024

- Conducting experimental research in **Kirsten Wind Tunnel** on **high-speed Common Research Model (CRM)** to study Turbulent separated flows during Stall conditions.
- Worked on **CAD modeling** of the PIV assembly into the wind tunnel using **Solidworks** and documented **Bill of Materials**.
- Working on PIV setup to **analyze** and look at dynamics of Stall cells on CRM along both Span-wise and Streamwise locations
- Using Matlab for post-processing the **velocity and pressure fields** using data acquired from the PIV.

Research Scholar in Research and Development Department, Abyom SpaceTech and Defence.

Oct 2021 - Feb 2022

- Published** a research paper on "[Numerical Analysis of Electric Pump Feed System for Upper-Stage Rocket](#)"

ACADEMIC PROJECTS

Structural Analysis of Cubesat Satellite Frame, India

Aug 2021

- Performed **static structural** modal, **pre-stressed modal** & **buckling analysis** using **Ansys** to evaluate total and directional deformations, equivalent stress & strain, first 6 mode shapes & their frequencies for 3 different aluminum material properties.

Analysis of Hypersonic flow on Reentry Module, IIAE, Dehradun, India

Jan - Apr 2021

- Designed and Simulated** the behavior of a re-entry module across various Mach numbers using **Catia and Ansys** software, delving into the intricacies of deceleration dynamics, shock wave interactions, and thermal protection systems to evaluate velocity, pressure, and temperature effects during re-entry.

CAD Model Rocket, IIAE, Dehradun, India

Aug - Dec 2020

- Led** a team of 6 to build a model rocket; **worked** on propulsion and designing the **C/D nozzle** using **Catia** & performed **heat transfer, structural, velocity, and pressure analysis** for different nozzle configurations using **Ansys Fluent** and **structural modules**.

EDUCATION

University of Washington

Seattle, United States

Master of Science in Aeronautics and Astronautics | Fluid Dynamics

Sep 2022 - Jun 2024

Teaching Assistant: Atmospheric flight mechanics, Engineering Statics, Thermodynamics

- Courses:** Compressible fluid Mechanics, Incompressible fluid Mechanics, Turbulence, Modern Manufacturing Processes, Computational Fluid Dynamics (CFD) of Compressible flows, Cardiovascular Fluid Mechanics

Indian Institute of Aeronautical Engineering (IIAE) Dehradun

Dehradun, India

Bachelor of Science in Aerospace and Rocket Engineering

Aug 2017 - May 2021

- Courses:** Aerodynamics, Finite element analysis, Computational tools, Thermodynamics, Propulsion, Boundary layer theory and Heat transfer, Heat and mass transfer, Manufacturing processes, Aero-thermodynamics, Engineering Design, etc.