Vishal Priy Gautam

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EDUCATION

Virginia Tech *Blacksburg, Virginia*
Master of Science in Aerospace Engineering – Current Sem. GPA 4/4 *Aug. 2024 – Jul. 2026*

University of Petroleum and Energy Studies *Dehradun, India*
Bachelor of Technology in Aerospace Engineering – GPA 2.8/4 *Aug. 2016 – Apr. 2020*

- B.Tech Project: **'Fabrication of Micro Gas Turbine Engine'** (*Project achieved **#1** position in the department*)

WORK EXPERIENCE

VTOL Aviation India Pvt. Ltd. *Navi Mumbai, India*
Engineering Officer - (Propulsion & Aerodynamics Department) *Nov. 2021 – Aug. 2024*

- **Team Lead, Propulsion System Design and Development for six-seater VTOL air taxi**, encompassing multiple subsystems and overall strategic oversight of the aircraft's development.
- **Team Lead, Design and Development** of the all-electric **250 kg class UAV ABHAY 250**.
  - Designed powerplant for a 180 kW coaxial hexacopter; performed propeller estimation using QPROP & BEMT.
  - Executed comprehensive performance testing of a 30 kW coaxial motor system via propeller–motor matching.
  - Conducted detailed component-level analysis to design a battery system capable of sustaining 2400 Amps.
- Designed and developed **Test Rigs** and **Data Acquisition Systems** for the **performance characterization of propeller–motor and propeller–engine combinations** for UAV applications.
  - Developed an engine test bench with thrust, torque, RPM, fuel flow, mass airflow, vibration, and temperature logging (up to 30 kW) at a 1 kHz sampling rate.
  - Built a motor test bench (up to 50 kW, 100 kgf thrust, 40 Nm torque) featuring automated throttle sequencing and multi-parameter logging (thrust, torque, current, voltage, PWM, RPM, airspeed, temperature, and vibration).
- Directed experimental testing and test-rig design for structural, propulsion, and flight safety validation. Played major role in the succssfull **certification** of an **eVTOL UAV** named **AARAV**.
- Led **propulsion system characterization** for UAVs ranging from lightweight platforms to heavy high-altitude systems.
- Team Lead, design and development of an electric, high-speed, 150 kg **High Altitude Long Endurance (HALE) UAS**.
- **Project Manager** for a lightweight 2 kg multi-rotor program; allocated projects across engineering teams and coordinated **multi-diciplinary collaboration**.

INTERNSHIPS

Indian Air Force *Kanpur, India*
Research & Developement Intern, Base Repair Depot *Jun. 2019 – Jul. 2019*

- Conducted research on **thermal analysis** as project lead for **Central Bearing Failure of Rolls Royce Viper Engine**
- Identified and resolved problems related to **gas turbine engine failure** using **aero-thermal modeling**.
- Learned overhauling process and management of Tumansky R29, Snecma M53, and Rolls Royce Viper engines.

TECHNICAL SKILLS

Programming Languages: C, C++, MATLAB, Python, R, Shell/Bash, LaTeX
Software and Libraries: GNU Octave, MATLAB/Simulink, LabVIEW, Docker
Design Softwares: SolidWorks, OnShape, ANSYS Fluent, OpenFOAM, Paraview, Gmsh, Salome
Propulsion Tools: NPSS, AVL, QPROP/QMIL, OpenVSP, XFLR5, OpenProp
Hardware Interfacing: I2C, SPI, UART, National Instruments (NI), ATMega, ARM32, ESP32, Raspberry Pi

POSITIONS OF RESPONSIBILITY

Research Assistantship
Nonlinear Systems Laboratory, Virginia Tech, Blacksburg, USA *May. 2025 – Present.*

- Developed **DRAGON eVTOL**, platform by selecting avionics, and demonstrated successful autonomous VTOL flight including transition.
- Developed and delivered 25 pound hexa-copter called **HEX01**, performed stability tests, improved flying capability by increasing flight time to **60 minutes**.

Recovery Engineer
Experimental Sounding Rocket Association (ESRA), New Mexico, USA *Oct. 2016 – Sep. 2017*

- Developed the **recovery system** in the **Sounding Rocket 'Kalam'** for Team Garud (Rocketry Division of UPES).
- Applied numerous communication protocols such as I2C, UART, SPI etc. on ATMega and ARM32 for the development of automated recovery deployment system for **Intercollegiate Rocket Engineering Competition (IREC)** 2017.