

Vinaykumar Venkateshkumar

LinkedIn: [linkedin.com/in/vinaykumar-venkateshkumar](https://www.linkedin.com/in/vinaykumar-venkateshkumar)

GitHub: github.com/Itsvid

Cranfield, United Kingdom

Email: kumarvsvinay@gmail.com

Mobile: +44 7742 914241

Work authorization: sponsorship required

Propulsion/CFD engineering graduate with hands-on ANSYS Fluent simulation experience from a validated jet-mixing CFD study, and ongoing parametric CAD (pyOCC/Open CASCADE) work on a nacelle-installation research project. Seeking an entry-level propulsion, CFD, or aircraft design role.

TECHNICAL SKILLS

- **CFD & Simulation** ANSYS Fluent, ANSYS ICEM CFD / Meshing, $k-\varepsilon$ / $k-\omega$ turbulence modelling, OpenFOAM, grid-independence studies
- **CAD** CATIA V5 (Proficient), ANSYS DesignModeler, pyOCC/Open CASCADE, parametric geometry (iCST)
- **Programming & Analysis** Python, MATLAB
- **Engineering Domains** Propulsion, aerodynamics, jet flow control, thermodynamics, aircraft structures, non-destructive testing

TECHNICAL PROJECTS

- **Installation Aerodynamics of Aero-Engine Nacelles – Cranfield Individual Research Project (Ongoing, Propulsion Integration, Parametric CAD, Python):** Investigating installation aerodynamics using Python-based propulsion-integration tool, applying iCST parametric geometry to model nacelle installation effects. Developing and benchmarking a pyOCC/Open CASCADE geometry-generation workflow against commercial CAD output for accuracy and robustness. Tech: Python, iCST, pyOCC, Open CASCADE, OpenFOAM (Ongoing, expected Sep 2026)
- **Investigation of Controlled Jets for Enhanced Mixing Rates – BEng Final Year Project, team of 3 (CFD, Jet Aerodynamics, Experimental Validation):** Investigated passive flow-control tab geometries (Delta Tandem Tab, M Delta Tandem Tab) to enhance nozzle jet mixing, using ANSYS Fluent CFD simulations across Mach 0.6–1.0 with grid-independence studies to 3.4M+ nodes, validated against experimental shadowgraph imaging. Achieved 64–76% potential core-length reduction versus an uncontrolled jet baseline at Mach 0.8, with no significant thrust penalty. Tech: ANSYS Fluent, ANSYS DesignModeler, ANSYS ICEM CFD (Mar 2025)

EDUCATION

- **Cranfield University** Cranfield, UK
Thermal Power and Propulsion – Postgraduate Coursework Oct 2025 – Sep 2026
Modules: Gas Turbine Performance, Combustion, Turbomachinery Aerodynamics, Propulsion System Design
Research Project (ongoing): Installation aerodynamics of aero-engine nacelles
- **KCG College of Technology, Anna University** Chennai, India
BEng - Aeronautical Engineering; CGPA: 7.37/10 2021 – 2025
Courses: Air Breathing Propulsion, Rocket Propulsion, Aero Engineering Thermodynamics, Aerodynamics I & II, Computational Fluid Dynamics, Aircraft Structures I & II, Finite Element Methods, Wind Tunnel Techniques, Non-Destructive Testing, Aircraft Design

EXPERIENCE

- **AI Engineering Services Limited (AIESL) – Boeing 737 MRO Base** Thiruvananthapuram, India
Engineering Intern, Aircraft Maintenance Mar 2025 – Apr 2025
 - Rotational internship across Component Overhaul, Material/Production Planning, and Stores at a 737 base-maintenance facility servicing Air India Express.
 - Documented wheel/brake overhaul procedures (torque spec 158 lb-ft, tyre pressure 205 ± 5 psi) and Eddy Current Testing (ECT) for non-destructive flaw detection.
 - Used AMOS and RAMCO systems to track parts issuance, stock levels, and task-card compliance.

CERTIFICATIONS AND ACHIEVEMENTS

- IELTS Academic – Overall Band 6.5 (Listening 7.0, Reading 6.5, Writing 6.5, Speaking 5.5); UKVI B2 – Jan 2025
- CATIA V5 (Proficient) – CADD Centre Training Services, 80 hrs – 2024
- MATLAB Essential Training – LinkedIn Learning – 2024
- Machine Learning with Python; Deep Learning with TensorFlow – IBM / Cognitive Class – 2024