

Shanthosh K V

Aerospace Engineering student · RV College of Engineering, Bengaluru

shanthoshkv@gmail.com · linkedin.com/in/shanthoshkv · github.com/shanthoshkv · aboutkvs.vercel.app

Pre-final-year student in liquid rocket propulsion, turbomachinery, and CFD. Builds first-principles design tools and hardware studies — turbopumps, injectors, regen cooling, nozzles — and checks them against published data.

Experience

Research Intern — IIST Thiruvananthapuram Jul 2025 – Oct 2025

- ML model for species concentration in combustion flames using TDLAS.
- Parametric fuel–air mixing study with Planar Laser Mie Scattering (PLMS).
- 4 cm × 1 mm laser-sheet setup (Galilean expander); high-speed imaging; MATLAB post-processing.
- Mixing quantified via unmixedness factor from injector scattering profiles.

Liquid Rocket Engine Design Intern — BOCK SPACE Dec 2024 – Dec 2025

- Regenerative cooling and injector configuration for liquid rocket subsystems.
- CFD in ANSYS Fluent: nozzles, chambers, turbopump components.
- Engine sizing, cycle analysis, turbomachinery design for thrust, efficiency, and reliability.
- Aerodynamic and thermal design of coaxial bi-swirl injectors.

Education

B.E. Aerospace Engineering — RV College of Engineering, Bengaluru 2023 – 2027

Aerodynamics, propulsion, computational simulation. Rocket engine components, turbomachinery, applied ML for diagnostics.

Selected work

- **Two-stage centrifugal turbopump** — RP-1 at 100 kg/s, 35,000 RPM, 175 bar rise; material trades and CFD.
- **Turbo Forge** — 16-tab turbopump prelim suite, NASA CEA / CoolProp / Cantera, 379 tests.
- **Injector Forge** — ten injector families, named correlations, DXF/PDF export.
- **Regen cooling solver** — 1D thermal-hydraulic-structural, 7 margins at 120 stations.
- **rockmoc** — method-of-characteristics nozzles, 43 validation cases.

Skills

Python, MATLAB · SolidWorks, CATIA, Fusion 360, ANSYS, HyperMesh, ParaView, STK · OpenFOAM, CFD, propulsion design · LLMs, RAG, Ollama