

Hello! from AgniKul.

### **Who are we?**

AgniKul Cosmos Private Limited focuses on design, development and launching of all aspects of rocket launch vehicle technology. We are working on creating a small orbital class launch vehicle that will be designed in India.

*("AgniKul" is inspired by the sanskrit word "Gurukul". Translates to: "a place where we learn to use fire")*

The company was founded with the sole idea of making space access affordable for everyone. Getting to space shouldn't be the hardest part about being space-faring. We would like to do our part in bringing space access to the common man. We strongly believe that making space access extremely cheap will open up currently unexplored paths in fields that are not even remotely linked to space today.

**Advisors:** We are both, very proud and thoroughly humbled to have an extremely accomplished set of advisors spread across senior scientists from ISRO, IIT-Madras, the Indian Govt. and even our customer base (i.e.. Cubesat developers) helping us accomplish this mission.

### **What do we offer?**

We are not here to just give grunt work to interns and employees. (non AI) Computer programs do that really well. Our people will be working either directly help us shape the design of the rocket, or work with us on carving out the business strategy, or build an operations framework for an international supply/chain problem in rocket manufacturing.

### **Eligibility**

We strongly prefer working with interns and employees who are passionate about aerospace and willing to work with us for long term

### **Structural design engineer**

If you have wondered where the center of gravity of the Penrose Stairs lies, this is for you. Even better if you have spent more than 100 hours trying to figure out the best material for Space Elevator Tethers.

Preferably, you have also googled: "Inconel vs. carbon composites for 3d printing"

### **RESPONSIBILITIES:**

- Responsible for build of initial development hardware, ensuring efficient manufacturability and modifying design as needed (**Can't "stress" this point enough - pun intended**)
- Anticipate needed analyses and provide input throughout the design cycle

- Perform, document, and present static, dynamic, modal, thermo-mechanical, fatigue and fracture analyses
- Perform initial sizing analyses by hand calculation, detailed structural analysis using ANSYS or similar tools
- Perform detailed fluid system layout and/or mechanical design utilizing CAD and understanding of materials
- Seek out and evaluate state-of-the-art analysis techniques and tools
- Identify and procure long lead items such as machining parts, seals, forgings, etc.
- Coordinate and perform development and qualification efforts of hardware
- Design and build testing equipment or stands
- Manage the transition from development to production for flight quality hardware

**BASIC QUALIFICATIONS:**

- Bachelor's degree in an engineering discipline
- 2+ years of professional experience in structural analysis of turbomachinery
- Experience with Finite Element Analysis (FEA) and commercial tools: ANSYS, Nastran, or Abaqus
- Excellent understanding of fatigue and fracture mechanics principles

**PREFERRED SKILLS AND EXPERIENCE:**

- Master's degree or PhD in an engineering discipline
- Experience with Finite Element Analysis (FEA) and commercial tools: ANSYS, Nastran, or Abaqus
- Strong background in solid mechanics and structural dynamics (modal, transient, and random vibration analysis)
- Expert on fatigue, crack initiation, propagation mechanisms and metallic failure prevention
- Familiar with crack growth analysis codes
- Excellent oral and written communication skills
- Ability to deliver against an aggressive schedule

**What you could take away?**

- Your work will directly impact the company's (and the rocket's) trajectory
- You will learn rocket science from some of the most senior and respected minds in ISRO
- You will work on shaping space policy in India
- You will dirty your hands in a global supply/chain optimization problem

**Location**

- Chennai, India
- Remote working can be considered on a case-by-case basis



*Launch rockets anywhere, anytime, affordably.*

**Employment Type**

- Internship
- Part Time
- Full Time
- PhD Programs

**In conclusion**

A rocket, like anything else, is just the outcome of the right group of individuals coming together and working towards a common vision. We deeply value people we work with and are looking to collaborate with some of the best minds in the country to bring space closer to earth.

Pls. send us a three line email about yourself and a resume to : [humancapital@agnikul.in](mailto:humancapital@agnikul.in) if you are interested.