ARVIND KRISHNAN RAJIV

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EDUCATION

UNIVERSITY OF MARYLAND, College Park, MD: M.Eng. Aerospace Engineering **Graduated 3.06/4.00 GPA May 2020**
AMRITA SCHOOL OF ENGINEERING, India: B.E. Aerospace Engineering **Graduated first class May 2017**

SKILLS

- **Software:** MATLAB, Simulink, AutoCAD, Autodesk Inventor, Solidworks, ANSYS, Mathematica, Microsoft Office, Autodesk Illustrator.
- **Programming skills:** C++, python.
- **Laboratory Experience:** VARTM (composite manufacturing), Wind tunnel testing, MTS machine, Laser cutting (Epilog Laser Fusion M2).

PROJECT EXPERIENCE

Automated Tricopter Design Project (ongoing project)

Role: Founder (self-interest project)

- Designed a unique tricopter and determined equations describing the forces/moments generated by the tricopter. The equations of motion have also been generated and a mathematical model was finalized using **MATLAB** code.
- State Space form for a linearized model was determined and a robust LQR model-based control system has been generated and tested using **Simulink.** Please visit my website for further details.
- Project aims to create a prototype capable of autonomous flight using sensors or image processing.

Potential Planetary Exploration Rover Project **January 2019 – till date**
Role: Founder (self-interest project) **Maryland**

- Designed (**using Autodesk Inventor and Illustrator**) and Built a 6-wheeled rover using laser-cut acrylic sheets and 3D printed parts, manufactured **using an Epilog Laser Fusion cutter and Makerbot replicators**.
- Programmed multiple microprocessors **using python** to solve individual tasks and communicate results to one another. Please visit my website for further details.
- Current prototype of rover capable of detecting obstacles and avoiding collision.

Satellite Design Project **January 2019-May-2019**
Role: Structural Design Head **Maryland**

- Designed an Earth imaging satellite capable of being launched on the Pegasus XL Launch Vehicle.
- As Design Head, I developed a 3D modelled satellite bus using **Autodesk Inventor** that efficiently carried the equipment on board the satellite.
- This included **research work and trade studies** on mechanical & thermal properties of potential design materials, **developing an optimized CAD model** of the satellite and establishing its physical properties (Mass, Center of Gravity, moments of inertia etc.).
- My design was successfully tested for the satellites load bearing capabilities and vibrational limits against the launch vehicle requirements.

Composite Bridge Project **March 2018-May 2018**
Role: Team member **Maryland**

- Worked in a team of four to manufacture a carbon fiber composite I-section bridge of dimensions 30”x4”x4” using **VARTM method**.
- Successfully built and tested the bridge using an **MTS machine** to find the maximum load to be 2500 lbs. before the bridge deflected by 1 inch.