**Vinamr Arya**

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**EDUCATION**

**University of Michigan, Ann Arbor** *Graduated: July 2023* Double Major: B.S.E Computer Science, B.S.EAerospace Engineering

**Coursework:** Data Structures and Algorithms | Aerospace Structures | Aerodynamics | Spacecraft Dynamics | Aerospace Engineering Systems | Aerospace Propulsion | Controls of Aerospace Vehicles

**WORK EXPERIENCE**

**Medical Drone UAV** *University of Michigan, Ann Arbor*

*Lead Engineer June 2021 - Present*

* Led a cross-functional team to design, prototype, and test a hybrid-electric heavy-lift tilt-rotor quad plane for rapid medical supply deployment. Collaborated with executives from BlueFlite, KNUST team from Ghana, and professors from the University of Michigan.
* Analyzed and resolved field failures by performing rigorous testing to validate major components of the aircraft, including static and dynamic thrust tests to estimate flight performance.
* Utilized solidworks software to maintain and update aircraft models and documentation, ensuring high up-time and economical operation.
* Achieved a 5lbs reduction in weight and a 3 feet reduction in wingspan while increasing the range by 6 km through aerodynamic tuning using Flight Stream and openVSP

**M-Fly Autonomous Aircraft** *University of Michigan, Ann Arbor*

*Structures Lead June 2022 – May 2023*

* Designed a 45lbs MTOW autonomous aircraft using a combination of carbon fiber, balsa wood, and 3D printed components.
* Developed a novel payload system with a rotating barrel mechanism, effectively managing shifts in center of gravity and minimizing drag, ensuring high up-time and safety for the deployed hardware.
* Collaborated with operations to transition engineering projects into production seamlessly.
* Conducted tolerance analyses and worked through DFM challenges to engineer a two-part payload housing for 16 oz water bottles, incorporating a parachute system triggered by barometric pressure for safe dropping from 100 feet.

**PROJECT EXPERIENCE**

**Igor (All-Terrain Vehicle)**

* Designed and prototyped an all-terrain vehicle (ATV) with remote control capabilities from scratch in 9 months.
* Used commercially available motorcycle sprocket and chains to create a caterpillar track drive train.
* Generated low-fidelity prototypes to get user feedback for propulsion controls of the two 125 cc engines.
* Used a suite of sensors, servos, and a Raspberry Pi to add remote driving capabilities with a range of 5 km.

**FireFly (Fire Extinguishing Hex copter)**

* Designed and prototyped a semi-autonomous hex copter capable of carrying up to 6lbs of fire extinguisher.
* Used a suite of ultrasonic and thermal imaging sensors with DJI FPV system, an Ardupilot and a Raspbery Pi to add semi-autonomous capabilities to the aircraft.
* Investigated the root cause of high-priority mechanical failures, implementing changes to improve reliability and safety.

**SKILLS**

**Computer skills:** MATLAB | Python | C++ | Ardupilot | Siemens NX | XFoil | AVL| Catia | VSP | SolidWorks | PX4

**Machine skills:** Soldering | Laser cutter | 3D Printer | Welding | Lathe | Bandsaw | Carbon Fiber

**CAMPUS ORGANIZATIONS**

**Michigan Cricket Club, Treasurer** *July 2022 – July 2023*

* Managed venue selection and booking for indoor cricket tournaments throughout the school year.
* Organized practice games and tournaments involving various universities.

**Michigan Aviators, Pilot** *December**2018 – July 2023*

* Completed Private Pilot License course from DCT Aviation and received a Private Pilot License.