Available for full time work

Nathan Kadria

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EDUCATION

Northeastern University Boston, MA

B.S. in Mechanical Engineering, Minor in Computer Science (Magna Cum Laude) | GPA: 3.83 December 2024

WORK EXPERIENCE

GREENSIGHT – Mechanical Engineering Coop Charlestown, MA January 2024 – September 2024

- Took complete responsibility of mechanical design of a complex automation system – the "Hive."
- Managed part procurement and assembly of 6 Hives under an extreme timeline.
- Communicated with electronics and software teams to avoid integration issues & allow for parallel development.
- Utilized 3 axis CNC mill and lathe to machine complex parts.

Project: Weather Drone Silo – "WeatherHive"

Drone silo – the "Hive" – capable of storing, deploying, retrieving, and charging a swarm of 10 small weather drones.

- Redesigned the Hive from the ground up with reliability, manufacturability, assembly, and an IP55 rating in mind.
- Developed passive drone retrieval system – only one stepper required for landing, loading, and launching.
- Leveraged use of sheet metal and 3D printed parts to prototype quickly and scale production.
- Conducted fatigue testing on custom drone charging contacts.
- Developed a waterproof electronics box with external active cooling.

ORBIS ELECTRIC – Mechanical Engineering Coop Santa Rosa, CA December 2022 – July 2023

- Engineered and fabricated parts to convert McLaren chassis to electric with in-wheel motor assemblies.
- Designed machinable parts, working directly with machinist to ensure machinability.
- Ideated, modeled, and optimized ring-mounted brake rotor – validated at Greening.
- Designed battery mounting for CARB certified vehicle hybridization retrofit kit, along with detailed drawings.
- Installed hybrid kits onsite, realizing over 100% gain in MPG.
- Functioned under tight deadlines and changing requirements.

Project: Integrated Gearbox, Motor, and Upright Assembly

- Retrofitted existing assemblies to fit on McLaren chassis with planetary gearsets from automatic transmissions.
- Updated assembly's design – NVH results approved by a major auto OEM from Wolfsburg in an in-person visit.
- Engineered complete redesign of assembly to accept next generation motors, gearsets and integrate McLaren upright.
- Specced bearings, gearset, seals, to ensure gearbox longevity, desired NVH, and minimize stack height.

INSTRON – Mechanical Automation Engineer Coop Norwood, MA July 2021 – December 2021

- Designed custom parts for automation systems with machinability in mind, using COTS parts when possible.
- Managed 29 projects from quote to shipment in a fast-paced build to order environment.
- Developed and conducted V&V testing on new automation systems.
- Designed a highly detailed assembly of a system capable of quickly testing high-capacity vial racks.
- Integrated a custom pneumatic gantry and carousel with a single column Instron Machine and XY stage.

TECHNICAL SKILLS

- CAD: SolidWorks (CSWP), SW PDM, Onshape, 3D scanning, weldments, CFD.
- Machining: 3-Axis CNC mill (HSMWorks, Fusion), lathe, 3D printer, fab tools, soldering. I love machines.
- Car and Motorcycle Repair: suspension, drivetrain, engine, and brake systems.
- Coding: Java, Arduino C++, MATLAB, Python. Can read code and learn whatever language necessary.

NORTHEASTERN BAJA SAE

Chassis and Drivetrain Subteams 2021 – 2023

- Sizing drivetrain components – slip clutch, driveshaft, u joints, gearing, to handle shock and engine load.
- Assisted in coast down testing and data analysis to compare firewall area vs. weight effect on rolling efficiency.
- Programmed toolpaths and machined complex CVT parts with lathe and 3-axis CNC.

INTERESTS/HOBBIES

- Motorcycles, cars, machining, 3D printing, rockets, skating, PC gaming, FPV, music, indoor gardening, public transit.