

Tarun Prakash

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EDUCATION

Purdue University, West Lafayette, IN

Expected May 2024

Bachelor of Science in Mechanical Engineering

GPA: 3.21 / 4.00

Minor in Organizational Leadership; Certificate in Entrepreneurship & Innovation

PROFESSIONAL EXPERIENCE

Tesla, Palo Alto, CA

Mechanical Design Engineering Intern

May 2022 – August 2022

- Designed hardware for a motor dynamometer test considering lubrication, sealing, & handling using CATIA & ANSYS
- Evaluated next-gen drive unit quality control equipment to validate stator electrical metrics for production vehicles
- Managed the assembly of 3 prototype drive units, ensuring adherence to design specifications and project timeline
- Measured partial discharge inception voltage at 20 environmental conditions to validate magnet wire insulation design
- Performed 12 thermal & tensile tests on bonded wire samples to compare material properties & select optimal configurations

Maurice J. Zucrow Laboratories, West Lafayette, IN

Propulsion Test Engineer

May 2021 – May 2022

- Operated 100+ tests on LabVIEW with H₂O₂ fueled thrusters and subscale test articles with various catalyst beds
- Analyzed performance data in MATLAB and Excel to determine if reaction catalyst beds were meeting design standards
- Developed a heat exchanger and data acquisition system for evaluating a Hydrogen/GOx rotating detonation rocket engine

Nize Systems, Pleasanton, CA

Founder & Chief Operating Officer

August 2018 – January 2022

- Founded a team of 15 engineers, developers, & designers to design an RFID consumer electronics product to automate the attendance process for K-12 schools with an end goal to save them more than \$100,000 of state funding each academic year
- Designed and constructed a 3D printed case and custom through-hole PCB for a fully integrated solution using NX and KiCAD that improved student, parent, teacher, and administrator satisfaction with attendance procedures and outcomes

Ray W. Herrick Laboratories, West Lafayette, IN

Undergraduate Research Assistant

August 2021 – January 2022

- Formulated mixtures of polymer-bound materials for large-scale manufacturing of high solids loaded composite materials
- Performed shear viscosity tests on various material systems to characterize flow impacts on vibration-assisted 3D printing

LEADERSHIP EXPERIENCE

Purdue Space Program, West Lafayette, IN

Technical Director

December 2021 – January 2023

- Coordinated 6 aerospace related projects and L1 launch certifications under the Purdue Space Program student organization
- Mentored 200+ aspiring new members and guided them towards technical projects that aligned with their skills and interests
- Enforced safe practices and procedures throughout design, build, & test ops for all technical teams and L1 launch events

Propulsion Lead

August 2020 – January 2023

- Launched an LNG/LOX fueled rocket twice in one weekend, setting the record for first reflight of a collegiate liquid rocket
- Leading development of a 2,000 lbf Ethanol/LOx fueled engine, propelling a rocket targeting an apogee of 75,000 ft
- Redesigned lower airframe and fin can assembly in SOLIDWORKS to reduce weight by 10 lbs and increase assembly ease
- Created a 3,000 lbf test stand P&ID in Visio to visualize fluid system designs and enable rapid testing of propulsion systems
- Directed trade studies on various propulsion topics including injectors, composite chambers, cooling methods, and igniters

PROJECT EXPERIENCE

Audi E-Tron RC Car

Project Manager & Engineer

January 2023 – May 2023

- Designed a parametric RC car using solid & surface modeling, dynamic motion analysis, & topological optimization
- Analyzed vehicle assembly & components using FEA in NX to decrease mass and CFD in STAR-CCM+ to reduce drag

Hammer Down!

Project Manager & Engineer

August 2022 – December 2022

- Designed crank & lever mechanisms for a carnival game using Creo Parametric with top-down motion skeleton modeling
- Wrote C++ for an Arduino to control stepper motor based on button input and display final game score when time elapses

Awards: 2022 Dreammaker & Risktaker, Purdue ME Toy Design Best Market Potential Award, Eagle Scout Rank, 1st Dan Black Belt