Bruce Sun

He/Him | Brooklyn, NY | +1 (425) 305-7960 | zs2480@nyu.edu | Portfolio

EDUCATION

New York University, Tandon School of Engineering, New York, New York 2022 - 2026
Bachelor of Science, Mechanical Engineering (GPA: 3.4)

- **Relevant Coursework:** Machine Design, Finite Element Analysis, Fluid Mechanics, Thermodynamics, Thermo-Fluids, Heat Transfer, Advanced CAD, Material Science, Calculus III, Controls, Dynamics
- **Machine Skills:** 3D Printing, CNC Mill, CNC Lathe, Manual Milling, Manual Lathe, Drill Press, Woodworking, Laser Cutting, Microcontroller, Sensors and Motors, Rapid Prototyping
- **Computer Skills:** SolidWorks, Fusion 360, Ansys Mechanical, Python, JavaScript, Arduino
- **Languages:** English (native), Chinese (native), French (classroom)

RELEVANT EXPERIENCE

NYU Rogue Aerospace Club New York, NY
Manufacturing Lead Engineer Sept. 2024 - Present

- Led manufacturing of Brooklyn's first hybrid rocket by executing fiberglass layups, epoxy bonding, and precision machining of 15+ components using manual and CNC mills and lathes while maintaining tight tolerances
- Collaborated with propulsion, avionics, and payload sub-teams to review designs, plan fabrication methods, and ensure parts can be manufactured in-house within budget and timeline limits while maximizing design standards
- Trained team members on CNC and manual machining across mills and lathes, teaching machining fundamentals, order of operations, and tool selection to improve manufacturability and timeline of hybrid rocket components
- Conducted research on comparable university and commercial hybrid rocket programs to benchmark design approaches, then applied insights to develop processes tailored to the team's capabilities and resources
- Contributed to technical documentation such as FMEA reports, manufacturing plans, and design records to align intent with production while building a knowledge base for future team members to reference and improve upon

Humanscale Design Studio New York, NY
Design Engineer Intern Feb. 2025 - Aug. 2025

- Launched the "Diffrient Lounge Chair", supporting the full product development cycle from concept modeling and prototyping to tooling, UL testing, pilot builds, and production ramp-up at Humanscale's Piscataway, NJ factory
- Iterated on 10+ injection-molded and die-cast components, refining CAD models and drawings for tolerance control and manufacturability while coordinating with external vendors to accelerate readiness for production
- Designed and validated a friction ring through 5+ prototype cycles and collaborated with toolmakers to create injection mold tooling, while revising to improve reliability and accelerating part validation timelines
- Assisted electrical engineers with EMC testing at the UL test facility, diagnosing grounding, shielding and antenna issues, and prototyping multiple mechanical solutions that successfully resolved compliance failures
- Actively supported factory pilot builds by observing assembly workflows, identifying areas to of improvement, and collaborating with engineers and technicians to improve part fit, assembly order, and line setup
- Maintained showroom lounge chairs distributed to global events by repairing components, integrating updated parts to improve functionality, and coordinating with vendors for custom upholstery and machined components

NYU Tandon Motorsports New York, NY
Design Team Engineer Sept. 2022 - Sept. 2024

- Utilized SolidWorks for component design and simulations, then fabricated parts using both CNC and manual machinery, while gaining hands-on skills in welding, grinding, and maintaining a safe shop environment
- Worked extensively with traditional manufacturing tools which included drilling, cutting, tapping, and welding to understand the relationship between design intent, tolerances, and real-world manufacturability

St. Andrew's College VEX Robotics New York, NY
President May. 2019 - Jun. 2022

- Led R&D and robot design by developing and iterating CAD models, testing prototypes, and formulating strategies for both autonomous and driver control to deliver competitive robots that met annual game challenges
- Mentored junior members across 4 school teams by sharing competition experience, teaching design fundamentals, and training students on safe and effective use of hand and power tools in the Makerspace
- Prepared teams for competitions by coordinating logistics and verifying robots were competition-ready

HONORS & AWARDS

NYU Tandon School of Engineering Dean's List 2023
VEX V5 Robotics: 4x Tournament Champion, 2x Excellence Award 2020
Skills Champion, Think Award, Worlds Qualification