Kyle Miller

k.miller@berkeley.edu • 916-805-0345 • linkedin.com/in/kylemiller-/ • kylemiller.us/portfolio

Education

University of California, Berkeley, Berkeley, CA — GPA: 3.7
Bachelor of Science, Major in Mechanical Engineering, Minor in Electrical Engineering & Computer Science — May 2024

Work Experience

Tesla, Palo Alto, CA — May-Aug 2023
Robotics Mechanical Design Intern

- Owned two next-gen Optimus subsystems from last minute concept introduction to low level production. Integrated and impacted harnessing and actuator design for mm compactness, ease of assembly, and effector sub-mm error (tolerance/stiffness)
- Optimized stiffness to structure weight by 60% using a combination of generative design and Catia FEA
- Quickly designed and organized manufacturing/build to apply critical current-gen fleetwide changes in less than 1 week

Urban Machine, Oakland, CA — May-Sep 2022
Mechanical Engineering Intern

- Transformed robot prototypes to field ready systems in a fast paced startup environment. Designed backwards compatible electromechanical upgrades, wired sensor feedback boards, and assembled actuator and effector mechanisms
- Developed novel continuous flywheel, cam and linkage based mechanism to replace precision pick and place mechanism, vastly improving machine throughput from 0.03 ft/s to 0.3 ft/s and reducing system costs by half

Apple, Cupertino, CA — May-Dec 2021
Subject Matter Expert, Automation (Manufacturing Design)

- Developed new automated 3D pathway validation system and process for gantry and robotic machines, estimated to save 2 million skilled manual operator hours each product cycle and increase yield by 23% during platform rollout
- Full project R&D responsibility, from CAD, algorithm, and software development through hands-on testing and final validation
- Worked with integrators and vendors to enable high precision designs in several key manufacturing processes and product lines

Intel, Folsom, CA — Jun-Aug 2019
Software Development Intern (AI, Vision & Edge Innovation Technologies)

- Quickly adapted to working with a team of experienced PhD researchers and Intel's deep learning framework for the Nervana Network Processor for Inference. Developed C++ software interfaces and back end algorithms for high-load applications
- Collaborated with experts on machine learning programs, from Recommendation Systems to Smart Cities combining Autonomous Driving, Facial Recognition, and CCTV Emergency detection

Leadership, Projects & Activities

Combat Robotics at Berkeley - Glitch on BattleBots, Berkeley, CA — Jul 2020-Present
President & Founder

- Founded and explosively grew multidisciplinary club to 55 members and 9 robots while managing 190,000-person reach marketing program, the team budget, and relationships with sponsor, supplier and manufacturing partners
- Led design and CAD for an innovative 250lb BattleBot design with our robot "Glitch", utilizing holonomic mobility, simulated weapon and armor optimization, and resulting in one of the hardest hitting weapons in BattleBots history
- Radically exceeded expectations for a rookie team on Discovery's BattleBots with a novel and ambitious design, earning a 7-1 match record, entry into the Tournament of Champions and Rookie of the Year award (see portfolio for more on Glitch)

Space Technologies And Rocketry at Berkeley, Berkeley, CA — Oct 2020-Aug 2021

Placer Advanced Robotics and Technology, Granite Bay, CA — Jun 2018-Jul 2020
President, Founder & Design Lead

- Founded a cross-district nonprofit for student-led competitive robotics, supporting 5 VEX and 10 combat robotics teams
- Derived physics calculations to optimize weapon speed (210.1 mph), wedge angle (37 degrees), and engagement (1.2 in). Used FEA to maximize weapon MoI by 42.5% and shrunk total frame rail weight by 30.8% using Fusion 360 generative design

Granite Bay High School FRC Robotics, Granite Bay, CA — Sep 2016-Apr 2018

Relevant Coursework & Skills

Courses:	Mechatronics Design, Mechanics II, Materials, 3D Modeling, Manufacturing, Controls, Robotic Locomotion, Electronics for IoT, Fluid Mechanics, Thermodynamics, Data Structures, Planar Machinery
Design & Engineering:	CAD (Catia, SolidWorks, Inventor Professional, OnShape, Fusion 360), Finite Element Analysis, GD&T
Manufacturing	DFM, Fusion 360 CAM, CNC Machining, Milling, Turning, MIG Welding, 2D Mfg, Additive Mfg, Prototyping
Software:	Machine Learning, C++, Python, Java, MATLAB, Bash, Swift, XCode, Excel