CHRISTINE ZHOU

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EDUCATION

Brown University (GPA: 3.91/4.00) **September 2019 – May 2023**
Sc.B. Mechanical Engineering and Visual Art *Providence, Rhode Island*

- **Relevant Coursework:** Dynamics and Vibrations, Metalworking, Electricity and Magnetism, Fluid Mechanics, Mechanics of Solids/Structures, Structural Analysis, Computer Aided Visualization/Design, Electrical Circuits, Instrumentation Design

EXPERIENCE

Tesla **January 2022 – April 2022**
Mechanical Design Engineer Intern (Interior Engineering) *Fremont, California*

- Led product cycle for an injection molded mechanism, from ideation to DFM to 2 motorized prototypes in 3 months
- Performed root cause analysis and ran trials on 5+ key ramp issues on a program launch, increasing ramp efficiency
- Extensive usage of Catia V5, GD&T, DFA, DFM, and cross-functional reviews for fixture and product design/optimization
- Utilized human-centered design to create and retrofit an ergonomic fixture, cutting loose object issues by 87%

Hasbro **July 2021 – December 2021**
Product Design Engineer Co-Op (NERF) *Pawtucket, Rhode Island*

- Invented new internal blaster mechanism, optimized with force vs. time plots generated from SolidWorks Motion Analysis
- Modeled and tested 20+ barrel designs using rapid prototyping and DOE, enhancing blaster firing accuracy by 20.2%
- Programmed MATLAB code that stores user input points on a photo as array data, reducing data collection time by 67%
- Manufactured casting molds for rapid prototyping of repetitive part designs to vary durometers, materials, and textures

Temple Allen Industries **May 2021 – July 2021**
Mechanical Engineer Intern *Rockville, Maryland*

- Drove product development for user-controlled surface preparation robots: part design, procurement, and assembly
- Wrote and performed 15+ tests to verify IP waterproof ratings, pneumatic valve function, material strength for parts
- Calculated numerical parameters for pneumatic cylinder force, drivetrain wheel torque, gear ratios, and cycle times
- Designed custom sensor window mount after root cause analysis, reducing sensor system assembly time by 30%

USC Space Engineering Research Center (SERC) **June 2020 – September 2020**
Manufacturing Research Intern *Los Angeles, California*

- Developed a quantized inertia theory-based system that generates propellantless thrust using high-powered lasers
- Maximized thrust by iterating cavity designs while attentive to material thermal limits and CNC manufacturability

PROJECTS

Scallop Music Box (christinezhou.info/scallops) **October 2021**

- Designed and built animatronic music box combining hardware, electrical, and software: Arduino code, sensors, motors
- Debugged hardware by reducing frictional contact, determining maximum motor torque required, fully constraining parts

Apple Design Test: iPod Battery Door Mechanism (christinezhou.info/apple) **April 2021**

- Innovated latch and damped spring door mechanisms, modeled in SolidWorks assembly with 10+ dynamic components
- Determined total production cost of new iPod using costs of direct labor, raw materials, and manufacturing overhead

UtiliTool: A Touchless Keychain Tool (christinezhou.info/utilitool) **August 2020**

- Performed primary market research, financial modeling, competitive landscape research, and market size evaluation
- Utilized FEA to observe stress concentrations under applied loads and iterated designs to ensure tool longevity

SKILLS & INTERESTS

Design/Testing: SolidWorks, Catia V5, NX, Design for Manufacturing, Design of Experiments, GD&T, Materials Selection, ANSI/ASME Drawing Standards, Fits/Tolerances, Finite Element Analysis, Electronics Assembly and Testing, Plastic Part Design
Fabrication: 3D Printing, CNC Router, Laser Cutter, Mill, Power and Hand Tools, Welding, Soldering, Woodworking
Software: MATLAB, Arduino, LabView, LTspice, Adobe Creative Suite (Photoshop, Illustrator, Premiere), Microsoft Office
Interests: Illustration, Animatronics, Photography, Hiking, Gardening, Architecture