Sherry Choi

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EDUCATION

Rice University | GPA: 3.83/4.00 — Expected May 2027
Bachelor of Science, Mechanical Engineering | Minor in Engineering Design

TECHNICAL SKILLS

Mechanical Design: SolidWorks, AutoCAD; machining; MIG & arc welding; laser cutting; waterjet; 3D printing; DFM
Analysis & Testing : FEA (COMSOL, Ansys, Abaqus); MATLAB; Python; tensile and cyclic testing (Instron); failure modes & durability testing; material characterization; experimental data analysis

ENGINEERING EXPERIENCE

Undergraduate Researcher – Human-Robot Interaction Lab
Rice University   *Jan 2026 - Present*
- Design PCB and integrate an 8-node force-sensing resistor (FSR) array into a wearable upper-arm cuff, with architecture planned to scale to 24 sensors for full limb coverage
- Optimized sensor placement, material layering, and cuff compression to balance signal consistency with user comfort and wearability during arm movement

Undergraduate Researcher – Computational Mechanics and Bioelectromagnetics Lab
Rice University   *May 2025 - Present*
- Performed 25+ FEA design iterations on magnesium serpentine interconnects under bending and tensile loading, using displacement- and rotation-controlled boundary conditions, identifying fracture-driven failure modes
- Validated models via mechanical tensile testing and environmental dissolution testing with strong qualitative agreement

Welding Lab Student Instructor
Rice University Mechanical Engineering Department   *Sep 2025 - Dec 2025*
- Trained 8 undergraduate students in MIG and arc welding, emphasizing safe operation, joint quality, and structural integrity
- Led equipment setup and safety inspections for each lab session
- Evaluated weld quality through visual inspection and destructive load testing, identifying failure modes and coaching improvements in consistency

Undergraduate Researcher – Smart Materials and Sustainability Lab
Rice University   *Jan 2024 - Dec 2025*
- Conducted tensile and cyclic mechanical testing on self-healing hydrogel polymers, testing 24 samples per condition under loads up to 2 kN across controlled environmental conditions
- Quantified self-healing performance by comparing post-healing stress–strain response against baseline samples

Robot Control Intern – Translational Biomimetic Bioelectronics Lab
UTHealth Houston   *Jun 2024 - Nov 2024*
- Developed Python-based coordinate transformation algorithms, improving end-effector position accuracy by ~15% on a 6-DoF robotic arm, validated through bench-top experimental testing against surgeon-defined trajectories
- Interfaced directly with robotic hardware during validation and authored reusable control code that was adopted by subsequent researchers

PROJECTS

Rice Electric Vehicle Team – Battery Systems
                                                                                                                Jan 2026 - Present
- Support fabrication and assembly of a battery enclosure for an electric vehicle competing in the American Solar Challenge, applying polymer composites, sandwich panel structures, and additive manufacturing to support safe and manufacturable battery module integration under competition timelines

Retinopathy of Prematurity Screening Device (Kenya)
                                                                                                                Jun 2025 - Jul 2025
- Designed a height-adjustable mechanical frame with a focal-length-calibrated smartphone camera mount to accommodate variable infant anatomy while maintaining stable optical alignment for retinal imaging

Adaptive Assist Device for Fiber Artists
                                                                                                                Sep 2024 - Dec 2024
- Designed and prototyped an assistive mechanical device enabling one-handed fiber drafting, incorporating size, weight, and adjustability constraints; validated with 10 users through structured usability feedback