Kevin Yuan

Atlanta, GA | kevin.yuan@duke.edu | www.linkedin.com/in/kevinzyuan | https://kevinyuan.framer.website

Education

Duke University | *Durham, NC* **Aug. 2023 – May 2027**

B.S.E. in Mechanical Engineering, Concentration in Materials Science, Minor in Computer Science *GPA: 4.0/4.0*

- **Relevant Coursework:** Heat Transfer, Materials Science, Control Systems, Mechatronics
- **Honors + Societies:** 4x Dean's List With Distinction, Theta Tau, Duke AERO, Huntsman Cancer Foundation

Georgia Institute of Technology | *Atlanta, GA* **Aug. 2020 – May 2023**

Dual Enrollment during last 3 years of High School – Concentration in Physics *GPA: 3.83*

- **Relevant Coursework:** Quantum Mechanics I, Modern Physics, Combinatorics, Differential Equations

Professional Experience

Calidar | *Mechanical Engineering Intern* | *Durham, NC* **Jan. 2024 – Present**

- Engineered subsystems for a 4D mammography device in SolidWorks; prototyped with 3D printing/sheet metal and produced final parts in CNC-machined aluminum and acrylic.
- Performed ANSYS Mechanical (Static Structural) analysis to quantify rail deformation; identified weak sections and revised geometry/constraints, cutting deflection 3.0 mm → 1.0 mm and stabilized motion.
- Implemented a MATLAB–Python diagnostics and operator UI to cut operation cycle from 14 min to <5 min, increasing radiologist throughput and identifying error modes.
- Developed and deployed a Python (OpenAI API) pipeline to classify 1,000+ mammography facilities, delivering market insights that backed a $50M+ Series A fundraising projection.

BlueStamp Engineering | *Engineering Instructor* | *San Jose, CA* **May 2025 – Aug. 2025**

- Directed development of 10 functional prototypes (gesture robots, rehab devices) by guiding teams in CAD, embedded C++ firmware, and hardware validation.
- Created BOM/schematic checklists that reduced last-stage rework by 78% and enabled all prototypes to pass demo.

Duke University | *Structures & Properties of Solids TA* | *Durham, NC* **Jan. 2025 – May 2025**

- Led weekly discussion sections for 100+ students on stress–strain behavior, crystal structures, and phase transformations; achieved >95% positive feedback on TA reviews.
- Co-developed assessments and coordinated grading with two TAs, maintaining <48-hour turnaround and ensuring consistent evaluation standards across the course.

Projects

Acoustic Enclosure Resonance Optimization **July 2025 – Aug. 2025**

- Evaluated five enclosure/brace configurations with ANSYS (modal and harmonic) analysis to identify first-bending modes and guide the brace layout.
- Raised the first panel mode 0.74 kHz – 1.32 kHz (+77%) by adding cross-rib and baffle-ring braces at modal antinodes on side/baffle panels, reducing midband cabinet resonance.

Wireless Sprint Timer with Adaptive Distance Calibration **June 2025 – July 2025**

- Developed a wireless sprint-timing system using ESP32 microcontrollers, I^2C sensors, and LCD modules to automate interval measurements between checkpoints.
- Integrated RSSI with Kalman filtering in C++ to automate calibration and reduce setup time, achieving ±1% accuracy over 40 m in real time.

Battery Health Modeling **Mar. 2025 – May 2025**

- Evaluated battery pulse logs in Python to build a calibrated model and state-of-charge estimate; identified internal resistance and electrical response time directly from data.
- Achieved 3 mV pulse-prediction error on a 10 min dataset and reported practical figures—internal resistance ≈ 0.05 Ω and response time ≈ 7.5 s—enabling fast health checks and clean parameter handoff.

Technical Skills

CAD/CAE: SolidWorks, Fusion 360, CATIA, ANSYS Mechanical (Static Structural, Modal, Harmonic, Thermal), GD&T, FEA, COMSOL Multiphysics

Manufacturing & Prototyping: CNC Machining, FDM/SLA 3D Printing, Sheet Metal Fabrication, Laser Cutting, DFM, Soldering, PCB Assembly, Oscilloscopes/Multimeters

Programming & Hardware: Python (pandas, NumPy), MATLAB/Simulink, C, C++, Git, Arduino, ESP32, Raspberry Pi, SQL