Kieran Hamilton

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Education

Northeastern University May 2026
Candidate for Bachelor of Science in Mechanical Engineering Major GPA: 3.83
Courses: Intro to Computational Fluid Dynamics, Fluid Mechanics, Heat Transfer, Thermodynamics, Introduction to Material Science, Mechanics of Materials, Dynamics, System Analysis and Control
Activities: Club Water Polo Team, Red Vest (peer tutor), American Society of Mechanical Engineerings (ASME)

Computer and Machining Skills

Applications: SolidWorks, Ansys Fluent, CREO, Draftsite, LabVIEW/TestStand, AutoCAD, MATLAB, Microsoft Office, PLM (windchill), MRP (Glovia), OpCenter, Insight, PADs

Programming: C++, Arduino, MATLAB
Equipment/Tools: Bandsaw, Scroll Saw, Laser Cutter, Drill Press, Belt and Disk Sander, FDM and SLA 3D Printer, Cricut, 3D Scanning, Power Drill, Crimpers (Ferule, Molex, Lug), Insertion/Removal Tools, DMM, Power Supplies, Helium leak checkers, Vacuum component assembly

Work Experience

Analog Devices, Wilmington, MA Jul 2025-Dec 2025
Digital Health Care Mechanical Engineering Co-op

- Designed and fabricated low-cost R&D testing patches for wearable heart-failure and ECG devices, collecting ECG and bioimpedance data to enable extensive internal testing without consuming limited prototype hardware
- Applied in-house silicone injection casting by fabricating custom molds using SLA 3D printing to prototype compliant silicone components for heart-signal sensing in wearable heart-failure devices
- Tested acoustic silicone components using a waveform generator and oscilloscope, applying FFT analysis to verify signal fidelity of simulated heart vibrations when transmitted through the silicone
- Created anatomically informed CAD models from 3D ear scans, designing compliant structures that balance fit, comfort, durability, and internal packaging constraints for embedded sensors
- Developed parametric CAD models for a smart ring prototype integrating a flex PCB to support electrical verification and testing, including a low-cost waterproof resin window process to protect embedded electronics
- Supported development of next-generation Sensinel prototypes by designing and iterating mechanical test fixtures to evaluate acoustic signal transmission

Axcelis Technologies, Beverly, MA Jul 2024-Dec 2024
Test Development Engineering Co-op

- Designed, fabricated, documented, and deployed test fixtures for semiconductor ion implantation equipment
- Analyzed schematics and circuits of rolled-out test fixtures to troubleshoot malfunctions and minimize manufacturing downtime
- Coordinated and organized operations group meetings by scheduling sessions, arranging technical presenters, and moderating discussions; presented work to cross-functional teams and management

Personal Projects

Silicone Injection Cast In Ear Monitors (IEMs)

- Designed personalized IEMs from 3D ear scans, optimizing geometry for noise isolation, comfort, and retention
- Modeled in SolidWorks, sliced in Bambu Studio and 3D printed with an insert which houses a balanced armature driver, 2 pin connector, acoustic tubing, and a surrounding silicone shell
- Soldered drivers to connector, and installed acoustic tubing using CA glue and photopolymerizing resin
- Tuned sound signature by installing audio filters to remove abrasive high frequency noises
- Insert-injection casted 2-part platinum cure silicone over driver housing using 3D printer molds featuring alignment, venting, and flash features
- Fabricated custom IEM cables implementing balanced-audio capability with integrated strain relief