BEN LEVY

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SUMMARY

Mechanical engineer who works at the seams of hardware, electrical, and software. Has carried products from mechanical design and custom PCB through firmware bring-up, motion control, automated test, and manufacturing handoff, in both pre-seed and regulated medical environments.

EDUCATION

University of Wisconsin-Madison, Madison, WI — Expected Dec 2026

Bachelor of Science in Mechanical Engineering — GPA: 3.83/4.0 (5x Dean's List)

- **Relevant Coursework:** Mechatronics, Instrumentation and Measurements, Advanced CAD, Metals and Polymer Manufacturing.

EXPERIENCE

BeatRite — Madison, WI

Product Engineer — Aug 2025 – Aug 2026

- **Sole technical lead at a pre-seed medical device startup**; owned system architecture and roadmap for a wearable ECG/PPG/IMU remote patient monitoring platform.
- **Architected the end-to-end data path** from wearable to iOS app to cloud, defining the interfaces and handoffs between embedded firmware, mobile, and backend services.
- Designed a **4-layer custom PCB** in KiCad, moving the prototype from breakout boards to surface-mount; resolved sensor front-end signal integrity faults through component placement and trace layout, then ran DFM review and contract manufacturer outreach for pilot builds.

GE HealthCare — Madison, WI

Applied AI Engineer (Contract) — Aug 2025 – Dec 2025

- **Promoted from co-op** to own internal AI tooling; used LLMs to automate company-wide budget allocation.

V&V Automation and Test Tools Engineering Co-op — Jan 2025 – Aug 2025

- Built a **24/7 automated Monte Carlo simulation and test framework** for anesthetic delivery equipment, running 100k+ simulated breathing cycles via 3D-printed hardware interfaces for unattended stress and regression testing.
- **Awarded CTO's 3 Heartbeats Award** for shipping "AI ARC OPS," a Retrieval-Augmented Generation (RAG) tool that cut workforce database query time from 45 min to $<$10s and unblocked 12+ managers' decision workflows.

Glass Imaging — Los Altos, CA

Mechatronics Engineering Intern — June 2024 – Dec 2024

- Built a **working security camera prototype** from off-the-shelf hardware to validate the imaging pipeline on real hardware ahead of custom optics.
- Designed and tested **novel lens housings** for unreleased optics, iterating mechanical concepts against the ML team's imaging requirements.
- Built an **automated photo data collection system**, instrumenting the rig with sensors to monitor capture conditions and enforce dataset quality; cut experiment duration by 30%.

Madison Machine Interaction Lab — Madison, WI

Undergraduate Researcher — Nov 2022 – May 2024

- **First Author (IEEE Haptics 2024):** Identified an unmet need in VR haptics and pioneered a novel method of using **layer jammers as actuators** for feedback devices.

ENGINEERING PROJECTS

BERR EXO - Portable Active-Resistance Elbow Exoskeleton — Aug 2025 – Present

- Won the **Juan Blanco Medical Innovation Award ($3,000)** and the **Borgen Design Competition ($3,000)**, the two top awards at the UW-Madison senior design expo.
- **Leading a 4-person team** on the mechanical and control architecture of a wearable elbow exoskeleton; solved the core problem of **mounting a rigid actuated joint to a human limb**, keeping the motor axis aligned with an elbow center that translates during flexion, across user body sizes.
- Designed a control architecture that **varies torque as a function of joint position at 50 Hz**, so resistance follows a defined curve through the range of motion instead of a fixed load; built on a Raspberry Pi driving an ODrive Pro brushless motor with remote telemetry and a live dashboard.

SKILLS

Mechanical: SolidWorks, CREO, GD&T, FEA, DFM/DFA, CNC machining, 3D printing.
Electrical: KiCad PCB design, SPI/I2C/UART, microcontrollers, biosensors, bench debug.
Software: Python, C/C++, Swift, MATLAB/Simulink, SQL, automated test frameworks, real-time signal processing.
Languages: Hebrew (Native), English (Native).