

From Data to Sensation



A Smart Box That Lets You Feel the Weather.



Learn More: <https://www.waynezhang.com/feelit>



| Project Overview

Have you ever realized it's too cold only after leaving home? Or felt frustrated about what to wear, even after checking the weather forecast?

To address these everyday challenges, I created a device called FEELIT—designed to help people **feel the outdoor conditions** through **tangible temperature** and **immersive weather visualization**.



FEELIT consists of two main components: The upper part uses holographic projection technology to visually display the current weather. The lower part features an aluminum shim that users can touch to physically sense the outdoor temperature—offering a more intuitive experience than simply reading numbers.



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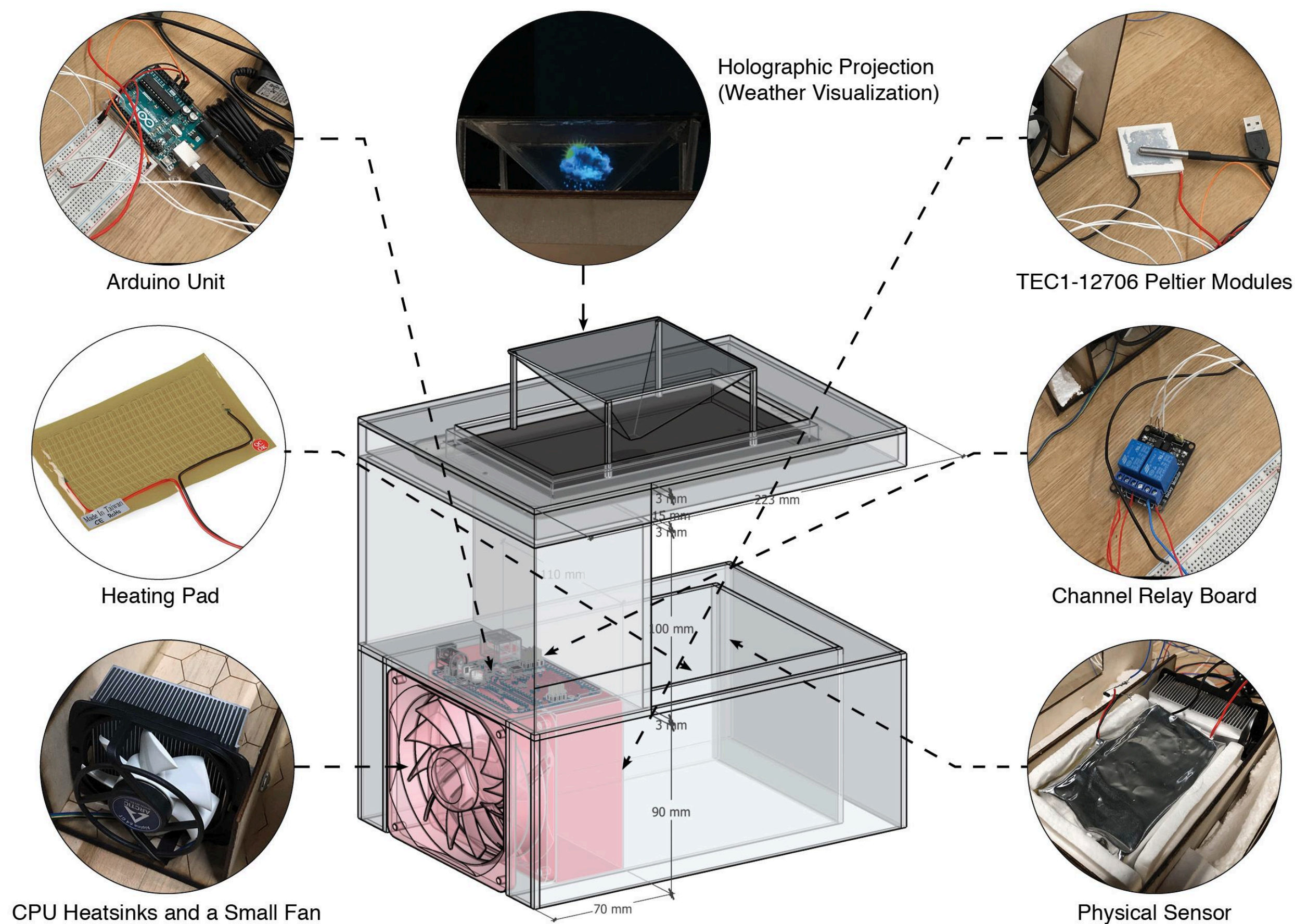
| Design Philosophy

The idea behind FeelIt was born from a desire to **make technology feel more human**. Most weather apps are transactional and **cold**—icons and numbers that we glance at briefly and forget. FeelIt slows you down. It's about experiencing weather as sensation, not just information.



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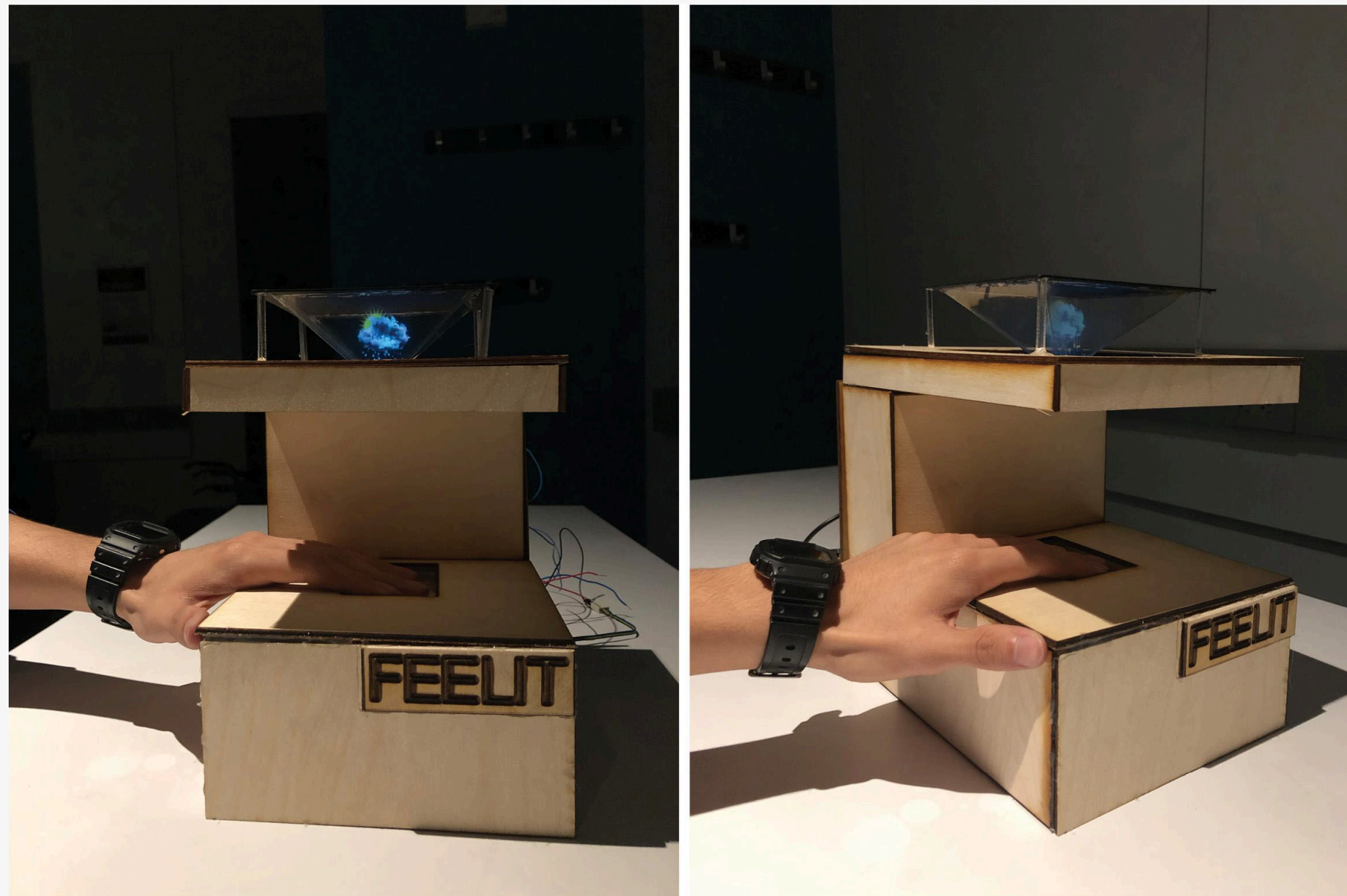
| How it works?

I retrieved local weather data using the **AccuWeather API** to power a holographic weather visualization. This same data also drives a temperature-regulating system for a touch-sensitive metal sheet, built with Arduino. The system features a heating pad and a cooling unit composed of **TEC1-12706 Peltier modules**, a 2-channel relay board, CPU heatsinks, and a small fan—**allowing users to physically experience the outdoor temperature in real time.**



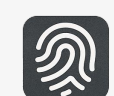
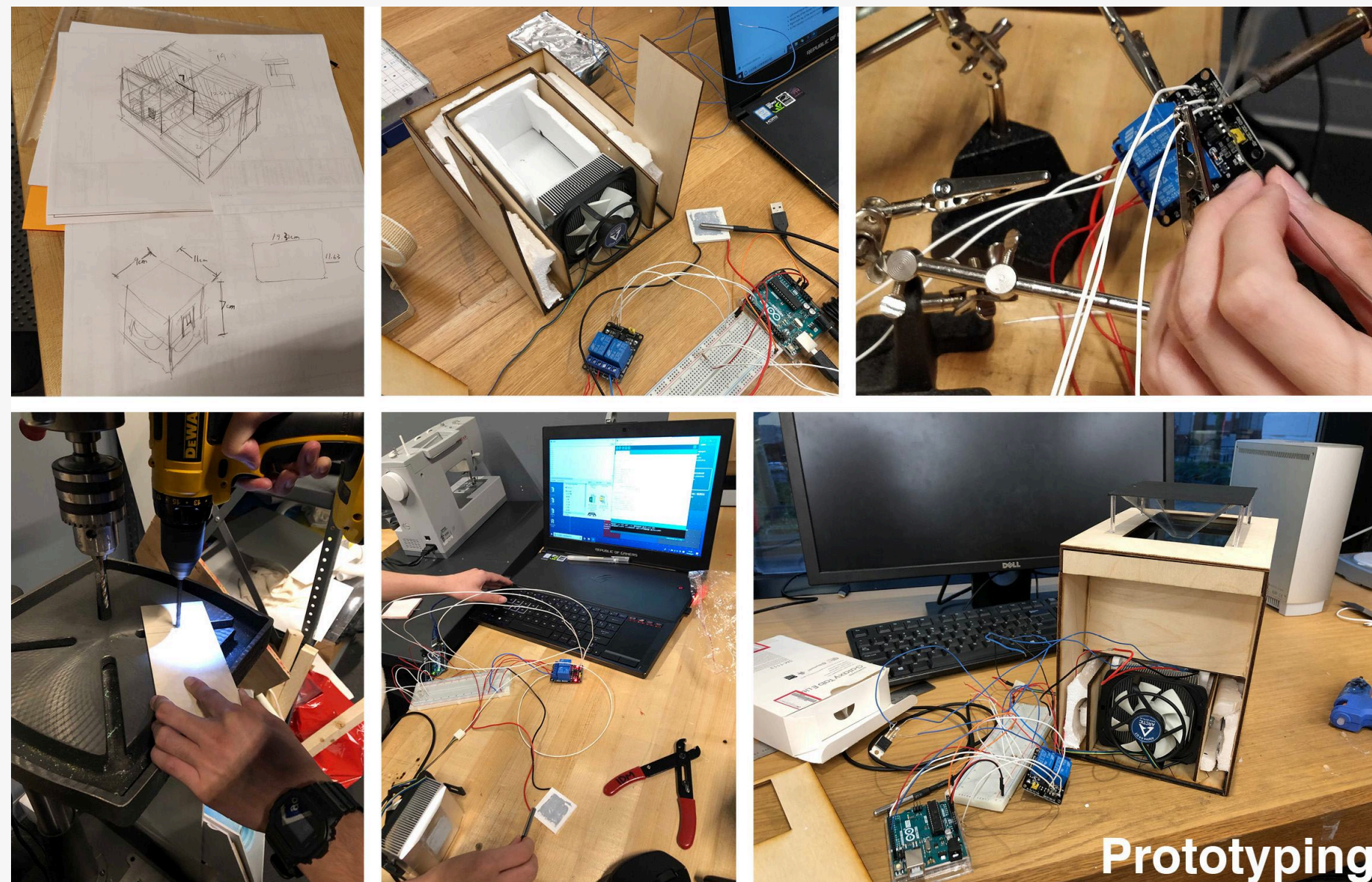
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| Design Process: From Low-Fidelity to Tangible Touch

Early in the design process, I explored multiple interaction models and form factors through low-fidelity mockups, ranging from simple foam core shapes to cardboard enclosures and laser-cut wooden bases.



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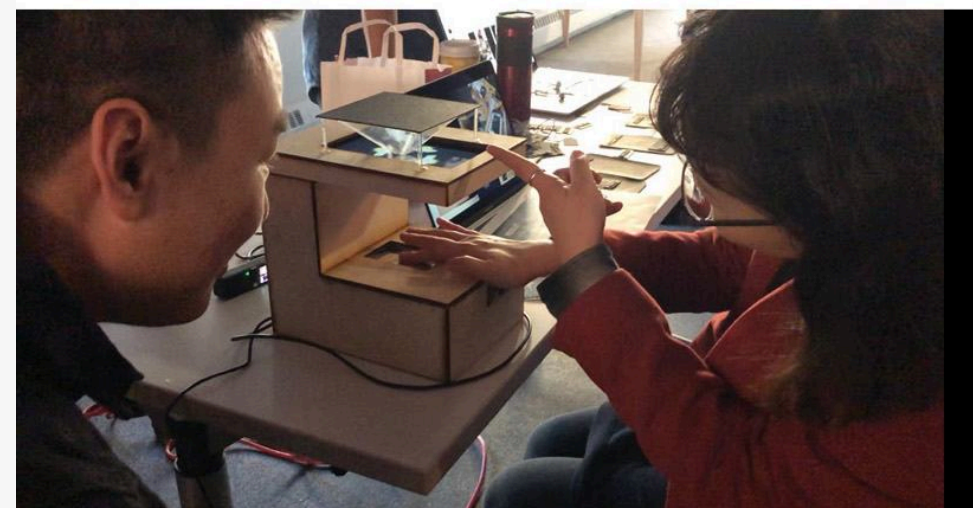
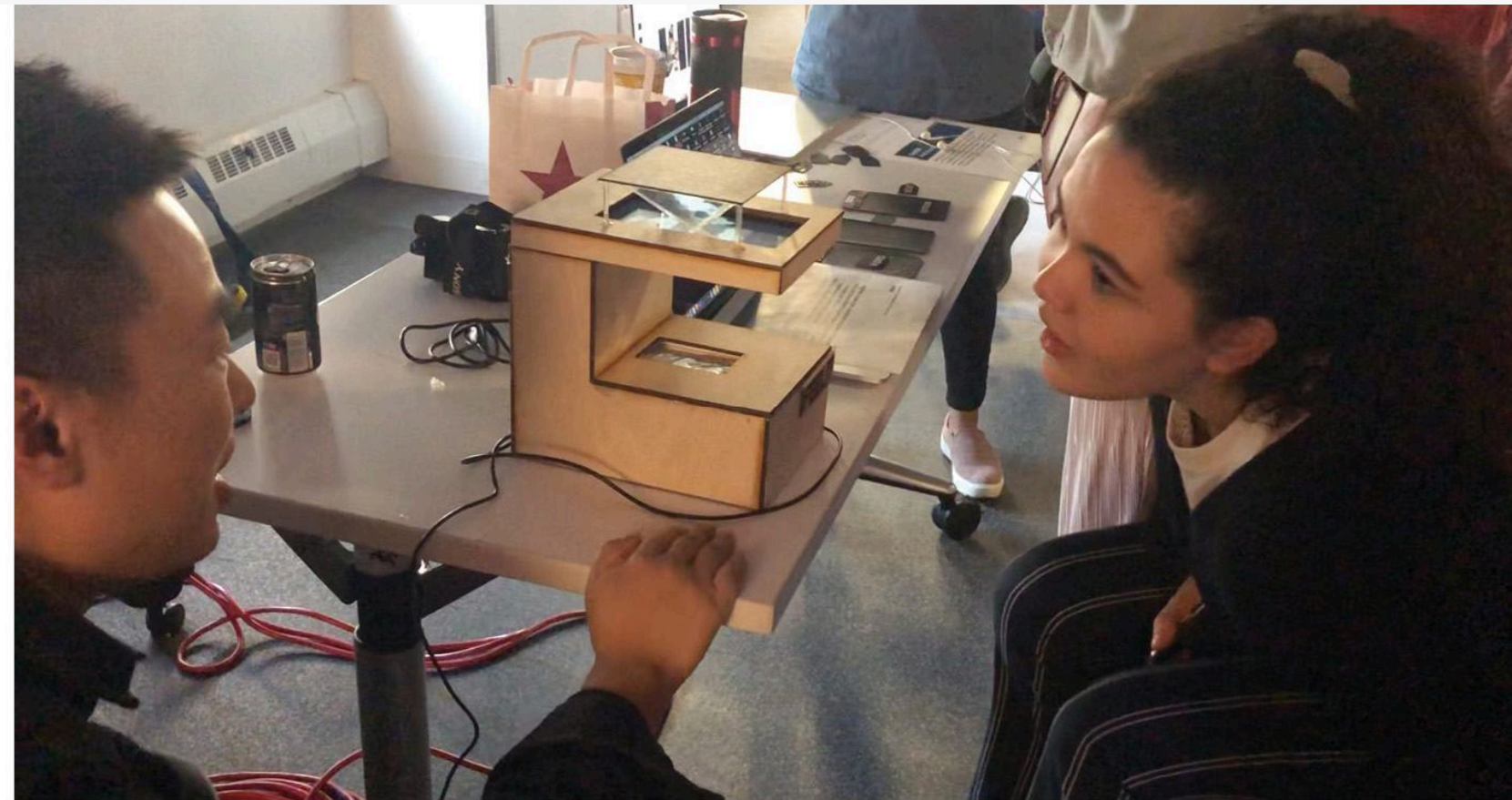
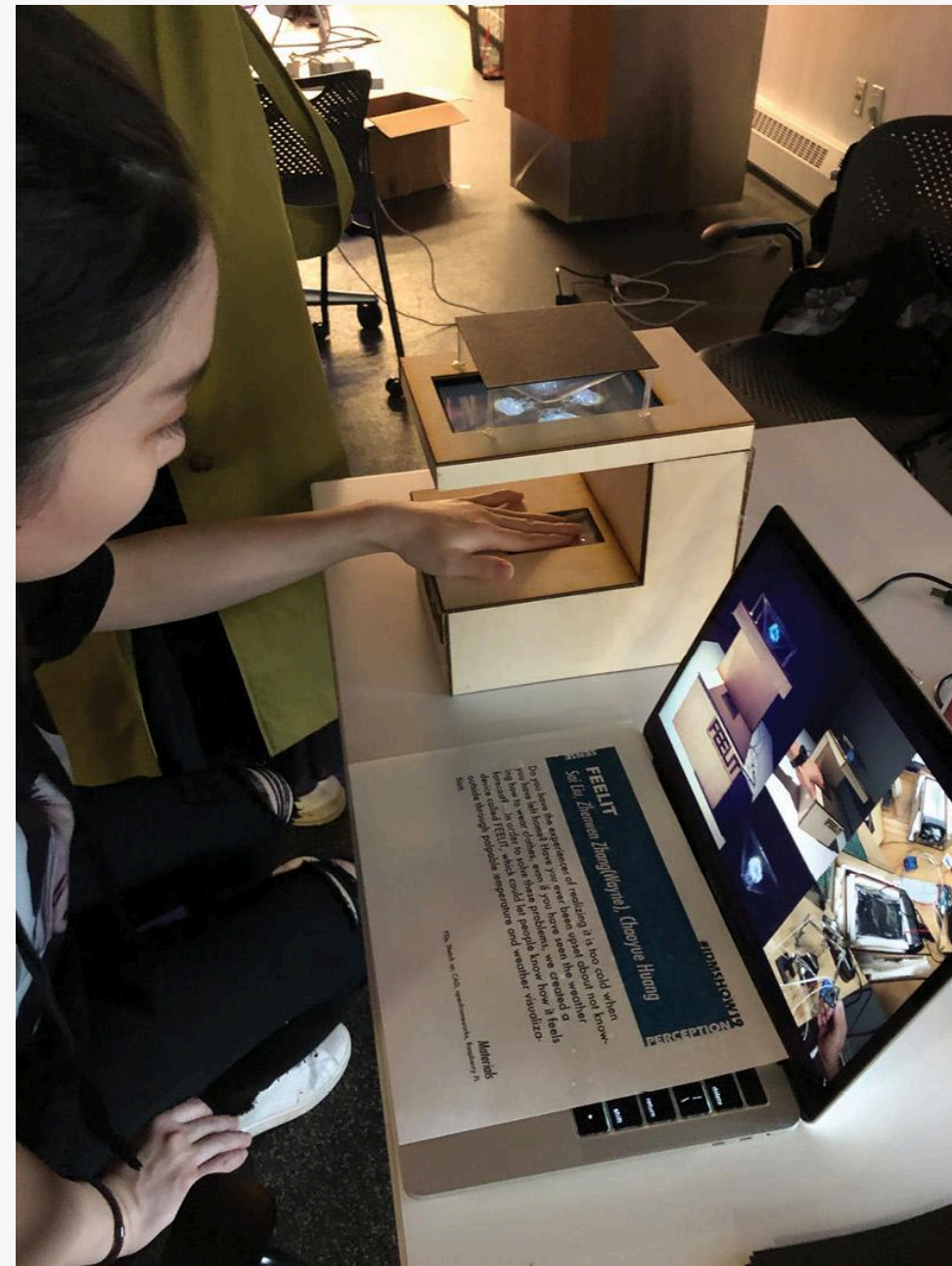
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| User Testing & Feedback Loops

To evaluate both the usability and emotional resonance of the experience, I conducted **3 rounds** of user testing with a total of **12 participants**.

Some Results:

- **Intuition & discovery:** Users appreciated the minimal interface but benefited from soft onboarding cues (e.g., pulsing light around the sensor).
- **Emotional engagement:** Participants described the holographic cloud as “calming,” “magical,” and “personal”—reinforcing the product's goal of ambient, sensory-based interaction.
- **Size & scale:** Several testers noted that a smaller pyramid felt more balanced atop the wooden base, which directly informed the decision to reduce the projection element by 5% in the final design.



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