

Fnu Tenzin Sonam

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EDUCATION

Villanova University – Villanova, PA
Bachelor of Science (B.S.) in Electrical Engineering

August 2023 – May 2027
GPA: 3.2

WORK EXPERIENCE

Banquet Staff, *WhiteMarsh Country Club*

November 2025 – Present

- Served weddings and formal events for **300+ guests**, handling room setup, décor placement, and teardown.
- Reset **20–40 tables per course** and refreshed food stations between courses to maintain smooth service flow.

Facilities Attendant, *Connelly Center*

September 2024 – Present

- Supported 10–15 large-scale** campus events weekly, ensuring operational efficiency by coordinating room layouts, equipment placement, and facility setup for **events hosting up to 600 attendees**.
- Reduced average event setup time by 20%**, improving operational workflow by optimizing room configuration processes and coordinating logistics with facilities staff.

Electrical Engineer, *Innovate: L3Harris Summer Program*

June 2025 – August 2025

- Developed and prototyped a smart hydration monitoring system**, improving real-time water intake tracking accuracy during testing by **integrating flow sensors, embedded microcontrollers (ESP32), and Bluetooth communication for automated data acquisition and control feedback**.
- Built a functional hardware prototype in 8 weeks**, validating sensor performance and system reliability by **designing embedded control logic in C/C++ and integrating multiple electronic subsystems including sensors, power regulation, and wireless communication modules**.

Sales and Corporate Trainer, *NOVA Group Marketing*

May 2024 – August 2024

- Reached out to **80 businesses per day**, pitching T-Mobile Business and Quill solutions to decision-makers.
- Trained and mentored **5+ new sales representatives**, accelerating onboarding efficiency and sales readiness.

LEADERSHIP & ACTIVITIES

President/Secretary, *Lambda Phi Epsilon*

December 2023 – Present

- Led outreach and recruitment initiatives, **resulting in a 50% increase** in new member enrollment.
- Organized **10+ cross-organization events per semester** with fraternities and sororities across Greek Life.
- Coordinated chapter communications, meeting documentation, and event logistics.

Electrical Engineering, *Agrivoltaics*

January 2026 – Present

- Designed a distributed agrivoltaics solar power system**, estimating farm energy demand and developing **electrical one-line diagrams, and load calculations to support safe and scalable electrical system operation**.
- Validated system performance through field measurements and testing**, collecting operational data and analyzing results to **verify electrical output, system efficiency, and power delivery reliability**.

Vice President, *Badminton Club*

December 2024 – December 2025

- Led tournaments, practices, and recruitment events, managing logistics, and volunteer staffing.
- Increased the club budget by 800%**, raising **\$9,000** by planning and executing targeted fundraising campaigns, securing alumni sponsorships, and generating consistent revenue through club-led events.
- Implemented training plans and feedback surveys to increase practice attendance and member retention.

Treasurer, *Society of Asians for Scientists and Engineers (SASE)*

May 2024 – May 2025

- Managed a **\$7,000 annual budget**, ensuring accurate tracking and transparent financial reporting.
- Prepared **monthly financial reports** for executive board meetings.
- Coordinated **fundraising and sponsorship** outreach to support **3+ events per semester**.

SKILLS

Technical: Arduino, ESP32, C/C++, MATLAB, Python, LTSpice, Oscilloscope

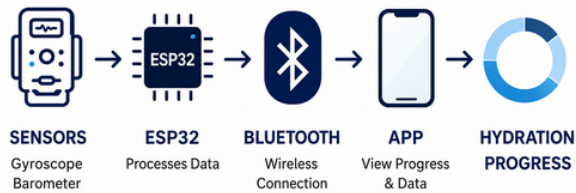
Electrical: Power Systems, Electrical Transmission, Circuit Analysis, Amplifiers, Diodes, BJTs, MOSFETs

Design: Revit, Solidworks, InkScape, BambuLab

AquaSense

SMART WATER BOTTLE

Smart water bottle that tracks hydration through an app.



PROBLEM

Busy Students often forget to track how much water they drink.



SOLUTION

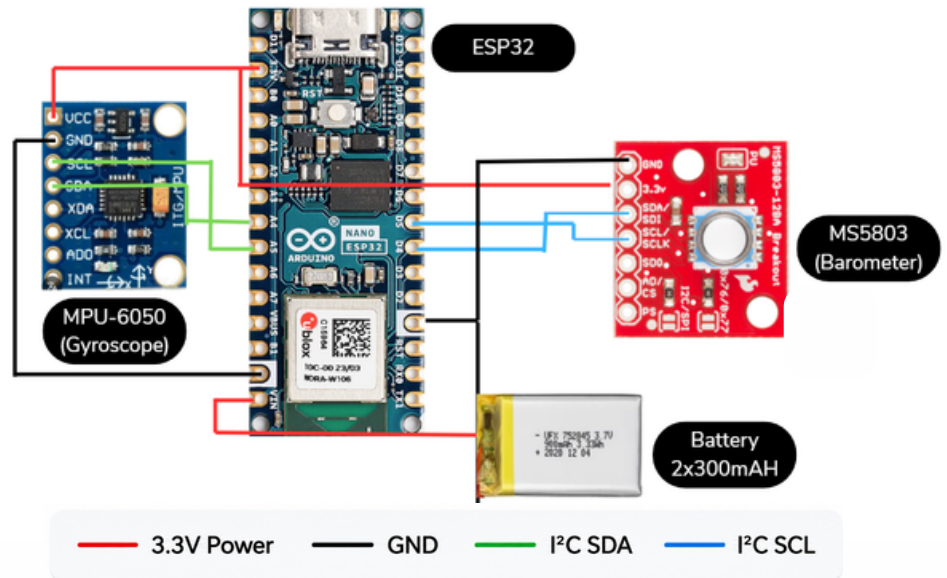
Aquasense is a smart water bottle with built-in sensors, Bluetooth, wireless charging, and an app that shows daily hydration progress.



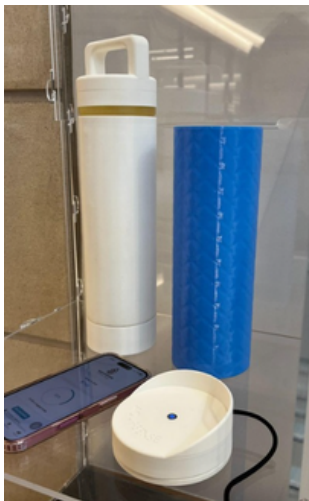
MY WORK

- Connected the ESP32 to the gyroscope and barometer.
- Built and tested the circuit in Arduino IDE.
- Soldered the electronics together.
- Helped assemble the final bottle prototype.

SYSTEM ELECTRONICS



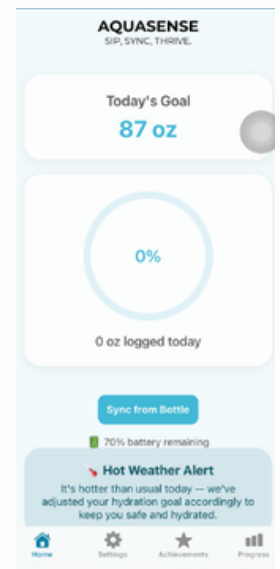
Final Prototype



Bottle with Removable Sleeve



Wireless Charging



App UI



RESULT

- Built a working smart water bottle prototype.
- App tracks water intake.
- Wireless charging works.
- Removable bottle sleeves allow customization.
- Reliable sensor readings and data transmissions.



DESIGN CHANGE

Our first idea was a smart cap, but we changed to a full bottle. This gave us more space for the electronics, improved usability, and allowed us to include the water reservoir, sensors, and removable sleeves for customization.

Initial Idea
Cap



Final Design
Full Smart Bottle

