GRACE ONESIME ZONGO

gzongo@wisc.edu | (608) 707-2473 | Madison, WI | linkedin.com/in/grace-ozongo | github.com/zongr-ce

SUMMARY

B.S. Electrical Engineering student at the University of Wisconsin-Madison, with 2 internships and 1 Co-op experience, along with various hands-on, team-based electronic projects. Skills in MATLAB, Oscilloscope usage, C, java, Embedded System, and electronics design.

EDUCATION

University of Wisconsin, Madison **September 2024 – present**

- BS: Electrical Engineering
- UW Credit Union Scholar and JCKF scholar

Madison College, Madison, WI **January 2022 – May 2024**

- Associate degree: Liberal Arts Transfer: Science / Math / Technology
- Dean's List – Perfect Honors for all 5 semesters.

INTERNSHIP EXPERIENCES

Design Engineer Intern | Alpha Controls and Services | Middleton, WI **May 2025 – December 2025**

- Analyzed HVAC mechanical blueprints to perform material takeoffs, select sensors, actuators, and Schneider controllers.
- Created electrical schematics and wiring diagrams for HVAC systems using equipment submittals and sequence of operation.
- Prepared cost estimates for projects by quantifying control system components and materials.
- Gained introductory experience in script and function block programming of DDC controllers for HVAC control logic.

AWS Student Intern | Space Science and Engineering Center – UW Madison | Madison, WI **April 2024 – Present**

- Embedded System Developer for an Automatic Weather Station, a grant project of the AMRDC at MATC and UW-Madison.
- Designed and deployed a low-power sleep mode for the AWS, reducing idle mode current draw from 32mA to 7mA.
- Implemented adaptive frequency sampling method for voltage/frequency-driven sensors, and tested sensors for calibration.
- Developed key communication protocols such as USART and I2C for seamless data exchange between modules and satellite.
- Managed version control workflows using Git/GitHub (Gitbash CLI).

Electrical Engineering Intern | Bemis Manufacturing Company | Madison, WI **June 2022 – August 2022**

- Designed a prototype of Bemis's first smart, health monitoring bidet seat for household use.
- Incorporated a health monitoring sensor into a bidet seat, a mechanism to record health data from this sensor.
- Used a Pugh Matrix and other decision-making tools to select priority features for the product.

PROJECT EXPERIENCE

Promoting Electric Propulsion (PEP) competition for electric boats **September 2023 – April 2024**

- Collaborated with a team to build our first electric unmanned boat, winning 2nd place in the displacement division.
- Developed navigation and control systems using open-source components, and implemented software + hardware fail-safes.
- Programmed a differential thrust system to maximize speed and stability and reduce failure points for the catamaran boat.
- Built two 24 AH battery packs with 18650 Li-ion cells, with a Battery Management System.

Honors Project: Designing an 8-bit CPU on Quartus **June 2023 – December 2023**

- Designed and simulated an 8-bit computer in Quartus following the foundational design of the Von Neumann architecture.
- Implemented FETCH, LOAD, and ADD instructions, and designed BCD segment displays via the Double Dabble algorithm.
- Created comprehensive documentation and presentation explaining computer basics, based on the 8-bit computer project.

Madison College Undergraduate Research **January 2022 – May 2022**

- Analyzed motion sensor systems and their use in Africa where electricity is scarce.
- Designed and developed a motion sensing light switch system prototype to reduce power consumption.
- Created test scenarios and protocols for evaluating the functionality and performance of the motion sensor.

TECHNICAL SKILLS

Programming and Design Tools: C, Java, VHDL, Multisim**,** MATLAB, Altium Designer, KiCad, Intel Quartus Prime
Hardware and Circuit Design: Soldering, Oscilloscope**,** DE-2 FPGA Implementation, Circuit Analysis
Relevant Courses: Digital System, Signal System, Electronics Circuit, Solid State Electronics, Electrodynamic

LEADERSHIP AND CLUB EXPERIENCE

Badger Solar Racing | Low Voltage Team | UW-Madison **December 2024 – Present**

- Integration of CAN (Controller Area Network) to allow communication between different modules of the car.
- PCB design on Altium Designer for Control board and brake system.
- Meeting for 5 hours a week with the team to discuss progress and goals to guarantee efficiency throughout individual work.

Clubs Development Coordinator | Executive Leadership Team (ELT) | Madison College **March 2022 – May 2024**

- Supported the growth of 50+ Student Clubs and representative of ELT in the Student Activity Board.
- Assisted clubs impacted by COVID-19 and helped in the creation of tens of new clubs.
- Administered a campus wide platform, allowing club leaders to manage members, budgets, and events.
- Improved clubs' performance by organizing events and officers training to increase membership and approving clubs' budget.

Peer Tutor | Student Achievement Center | Madison College | Madison, WI **June 2022 – May 2023**

- Coached and mentored students towards academic goals.
- Evaluated students' progress towards goals.
- Encouraged students to maintain efforts towards achieving academic improvement.

STEM Ambassador, STEM Center, Madison College **May 2023 – May 2024**

- Maintenance of 3D printers and Glowforce Laser Cutter
- Coordinated tours and events like open-houses to showcase STEM-related activities to students.
- Developed motion sensor-based automatic light switch to reduce energy consumption for undergraduate research.

VOLUNTEERING EXPERIENCE

Blood Donor Ambassador: American Red Cross (80+ hours) **September 2022 – October 2024**

Wolfpack Volunteer: Volunteer Center - Madison College (60+ hours) **March 2022 – May 2024**

AWARDS AND HONORS

- Karen Roberts Leadership Award 2024, the highest recognition for MATC student leaders.
- Leadership Certificate Award, 2023, MATC
- Student Tutor of the Year award, 2023.
- 1st place - Honor Projects Competition.
- 2nd place - Displacement division for PEP Competition.
- 5th place - Madison College Challenge Entrepreneurship Competition.
- Outstanding Student Life Organization of the Year award, ELT, 2023.
- International Student Volunteer of the Year, 2024, for completing 100+ volunteering hours in one year.

Hobbies

Programming | Cooking | Music | Soccer | Basketball | Meditating