AITHIHYA KOMPELLA

ELECTRICAL ENGINEERING III, McMASTER UNIVERSITY
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EDUCATION

McMaster University *September 2020 - December 2025 (Expected)*

- Bachelor of Engineering in **Electrical Engineering**, Minor in **Computer Science**

University of California, San Diego - Extended Studies *July 2023 - December 2025 (Expected)*

- **Embedded Systems Engineering** Professional Certificate

Relevant Courses: Embedded Systems Hardware Design, Computer Architecture, Microprocessor Systems Project.

EMPLOYMENT

Electrical Engineering Intern, Introba *May 2023 - Present*

- **Supported senior electrical engineers** in **designing electrical systems**, **conducting load calculations**, and ensuring **compliance with codes and standards** for projects including a new university building and community centre/medical facility, while optimizing **energy efficiency** and keeping consistent with **client requirements**.
- Utilized **Revit** to **model** electrical equipment like lights, generators, transformers, circuit panels, and receptacles on floor plans.
- **Drafted single-line diagrams** to depict the distribution of power through a facility, **fire alarm and lighting control risers** to indicate where and on which floors the devices are located, and performed **lighting calculations** by using **Elumtools**.

PROJECTS

Arduino-Based Remote-Control Quadcopter – Personal Project *July 2023 - Present*

- Demonstrating personal interest and enthusiasm in learning about drone technology through **assembling** and **programming** an **Arduino Nano**-based quadcopter, using **C++** and optimizing aerial stability through **selection and integration of components** (including a **Bluetooth receiver module**, brushless DC **motors** and **ESCs**, and battery).
- Exhibiting **practical PCB design expertise** by **designing** and **fabricating** a custom remote controller using EasyEDA, featuring an **Arduino Pro Mini**, **transmitter**, IMU module, battery, potentiometer, and joysticks.

Designing a Power Regulator and LED Board – Personal Project *June 2023 - Present*

- Gained proficiency in **Altium Designer** through independent study and practice by **designing**, drawing a **schematic capture**, **simulating** in **LTSpice**, **modelling**, and creating a **bill of materials** for a **power regulator** and LED shield board for an Arduino that will be sent out for manufacturing.

PCB Light Up Name Tag - Personal Project *April 2023*

- **Performed calculations** for voltage and additional components required, with the goal of optimizing the longevity of the PCB.
- **Designed a circuit, drew a schematic capture**, and **simulated** the circuit board in **Autodesk EAGLE**, then milled it on a single-sided pure copper-clad laminate board, with a focus on process comprehension and **experiential learning**.
- Assembled 42 3.5mm x 2.8mm SMD LEDs and a battery holder with **solder paste** and a **reflow oven** and **tested** the PCB with **test probes** and a **digital multimeter**.

Engineering a LiDAR Scanner – Microprocessor Systems Project *January - April 2022*

- Leveraged **computer architecture** and **hardware** skills to **design** and **build a circuit** interfacing **GPIO**, **I2C**, **UART**, a **ToF sensor**, and **stepper motor** with a **microcontroller** and **PC** to achieve the functionality of a **LiDAR scanner**.
- Programmed the microcontroller with **embedded C** in **Keil uVision**, then **tested** and **debugged** the system to **verify** and **validate** its functionality with the given requirements of the project.
- Procured and displayed over 11520 sets of coordinates to generate a 3D model of a space in Realterm with a **Python** script, the **PySerial API** and **Open3D library**.

CLUBS AND ACTIVITIES

Arduino Sub-team Manager, IEEE McMaster University Chapter *January 2023 - Present*

- **Delegated tasks** and **supervised** a team of 11 **software** and **hardware** designers on an **Arduino** currency counter project.
- **Wrote documentation** in LaTeX to detail the basics of **Arduino** and how the currency counter works and how the **motion** and **colour sensors** used in the project **interface** with the Arduino to distribute to folks interested in learning about this process.

CERTIFICATIONS

- **Verification and Validation of Systems, Software, and Hardware** - IEEE *July 2023*
- **PCB Design and Manufacturing in Altium Designer** - Altium *June 2023*
- **Circuit Simulation Onramp** – MATLAB Simulink *June 2023*

SKILLS

- **Software/Languages:** Altium Designer, KiCAD, LTSpice, OrCAD PSpice, Simulink/MATLAB, ARM, C /C++, Python, Linux.
- **Equipment:** Oscilloscope, Digital Multimeter, Microcontroller, Analog Discovery 2, Power Supply, Soldering Iron.