WEST LAFAYETTE, US • OEMARA02@GMAIL.COM • (424) 440-4842

OMAR MOSTAFA

PROFESSIONAL SUMMARY

Computer Engineering major with 2 years of experience in hardware diagnostics and system integration, adept at leveraging skills in FPGA, network administration, and programming languages like JavaScript and Swift. Seeking to join a product-forward company focused on battery and power development, where I can contribute meaningfully and grow alongside a dynamic engineering team.

EXPERIENCE

CONTROLS AND ELECTRICAL TEAM LEAD   *Oct 2023 - May 2025*
Purdue IEEE Racing, West Lafayette, Indiana

› Electronics and Battery team lead for Purdue's IEEE racing go-kart electric go-kart development.

› Managed 45 kW power distribution for safe operation, and **won 1st place in efficiency** (Watt-Hour per lap).

› Designed 20s14p battery pack with Molicel P42A cells, ensuring peak efficiency and stability.

› Engineered battery management system, optimizing motor current flow for secure race conditions.

› Implemented regenerative braking and capacitor buffering to follow energy regulations.

› Led a team of 20+students to develop a high-performance electric go-kart, achieving enhanced speed and efficiency while adhering to safety standards.

HARDWARE TECHNICIAN   *Jan 2023 - May 2025*
Purdue University STEMIT, West Lafayette, Indiana

› Maintained 15,000+ -computer infrastructure via routine hardware diagnostics and network connectivity checks.

› Configured static IP assignments across university machines to ensure seamless integration with host files, subnets, and Organizational Unit groups.

› Responded to support tickets from faculty and students, resolving software and system-level hardware issues within an average turnaround of 7 days.

› Recovered data from drives affected by hardware failure or system corruption using diagnostic and recovery tools.

› Diagnosed faulty components (e.g., RAM, HDDs, motherboards) to restore machine performance and prevent prolonged downtime.

MONORAIL INTEGRATED SYSTEMS ENGINEER INTERN   May 2024 - Aug 2024
Alstom by GE, Cairo, Egypt

› Designed communication methods between various systems (Automatic Fare Collection, Security Surveillance System, etc.) in the Cairo Monorail Project.

› Ensured that all subsystems were connected properly and had streamline communication to the monorail depot.

› Pointed out security threats and weak points in the system design and curated solutions to combat them.

EDUCATION

ELECTRICAL AND COMPUTER ENGINEERING
May 2025
Purdue University - Main Campus
West Lafayette, Indiana

SKILLS

Hardware Programming, FPGA, Verilog, VHDL, SwiftUI, C, C++, JavaScript, PLC, PowerShell, Network Administration, Spiking Neural Network, Digital Circuit Design, Robotics Engineering, Signal Processing, Embedded Programming, Firmware Development, Systems Analysis, Data Analysis, Hardware Security, IoT Integration, Wireless Communication.