HAMZA KAMEL

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EDUCATION

Purdue University, West Lafayette, IN — May 2025
Master of Science in Electrical and Computer Engineering — GPA: 4.00 / 4.00
Concentration: Innovative Technologies

Purdue University, West Lafayette, IN — May 2023
Bachelor of Science in Computer Engineering

TECHNICAL SKILLS

- Programming Languages and Tools: Git, GitHub, GitHub Actions, C, C++, Java, JavaScript, TypeScript, Bash Script, Assembly Language, Python, System Verilog, MATLAB, HTML, and CSS
- Language: Fluent in reading, writing, and speaking Arabic
- General Skills: Microsoft 365 Proficiency, Accountability, Adaptability, Attention to Detail, Creative Problem-Solving, Stress Management, Openness to Feedback, and Continuous Improvement

PROFESSIONAL EXPERIENCE

Advanced C Programming, Purdue University — August 2022 – December 2022
Undergraduate Teaching Assistant

- Enhanced and sustained proficiency in C programming by guiding approximately 200 Computer Engineering students through regular office hours, fostering their understanding of programming concepts
- Strengthened students' problem-solving skills by reviewing C content and preparing them for homework and exams
- Curated student questions to improve tutoring solutions discussed in weekly staff meetings

Neurava, Purdue Research Park, Startup Company Backed by Purdue University — May 2022 – August 2022
Firmware Engineering Intern

- Manufactured new firmware for a smart wearable device capable of tracking the vital signs of people at risk of SUDEP (Sudden Unexpected Death in Epilepsy) to give advanced warning
- Programmed in C and Python to establish real-time communication with the microcontroller using radio frequencies, ensuring consistent data updates
- Tested SPI frequencies through trial and error to acquire the most consistent results with the fastest running time and conclusively identified the 2.048 MHz SPI frequency as optimal due to its exceptional code performance
- Utilized I2C and SPI to interface with various chips for real-time physiological data acquisition

PROJECT EXPERIENCE

Software Engineering Project, Purdue University — January 2023 – May 2023

- Created the frontend utilizing TypeScript to allow users to upload, update, rate, and manipulate GitHub packages uploaded as zip files
- Implemented a wide range of features in the backend using JavaScript, harnessing user input from the frontend to enable dynamic functionality such as user authentication, data manipulation, and integration with the database
- Developed the rate feature with a TypeScript file that effectively communicates with multiple Python modules to evaluate diverse aspects of GitHub repositories, consolidating the results in JSON format for further analysis

Digital Systems Senior Design, Purdue University — August 2022 – December 2022
Software Lead

- Incorporated a CC1310 microcontroller and coded instructions in C using Code Composer Studio
- Developed SPI, UART, and Radio protocols to operate concurrently, facilitating the creation of changing light effects on programmable light strips through seamless communication and by setting SPI to a high speed of 2.4 MHz
- Created a robust transmission system for radio communication between a central controller and receivers, efficiently sending 135 bytes of data at each trigger, enabling dissemination of diverse light effects to multiple receivers

Operating System Project, Purdue University — January 2022 – May 2022

- Constructed a Unix-like operating system from scratch using C, leveraging concepts and ideas from basic JOS
- Conducted thorough documentation and analysis at each milestone to address coding errors and record kernel progress

LEADERSHIP EXPERIENCE

Eta Kappa Nu (HKN), IEEE Honor Society
General Member — December 2023 – Present

- Actively contributed to the academic and professional development of myself and fellow HKN members

Purdue Engineering Outreach (PEO), Organization Teaching Engineering Concepts for K-12
President — April 2022 – May 2023

- Oversaw club funds, relations, activities, and events, fostering an inclusive environment for teaching engineering concepts bi-monthly to children from diverse backgrounds