Christopher J. Kosik

Embedded Systems and Engineering

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EXPERIENCES

Research internship

Center for Advanced Smart Sensors and Structures

May 2018 – May 2020 Kalamazoo, MI, USA

- Implemented multiple mobile applications utilizing standard Bluetooth and BLE for motor control, electrochemical sensing, and temperature logging.
- Designed, ordered, and built PCB implementing Photoplethysmography algorithm for blood flow detection and vascular assement of patients. HemoFlux user application, firmware, and device design.
- Implemented multiple mobile applications utilizing standard Bluetooth and BLE for motor control, electrochemical sensing, and temperature logging.
- Developed firmware for designed lab devices. Work across AVR, ARM and Xtensa processors.

Extracurricular

IEEE WMU Student chapter

January 2018 – May 2020 Kalamazoo, MI, USA

- Chapter body vice president, webmaster
- Ran microcontroller programming introductory labs (digital I/O, Uart, selected peripherals- LED, motors & more) using Arduino and GCC toolchain C for AVR & ARM
- Assisted ECE department

Leadership internship

Air Force Reserve Officer Training Corps.

August 2015 – April 2020 Kalamazoo, MI, USA

- AFROTC Meritorious service award, top 5% class academic term S2019
- AFROTC in college scholarship recipient, S2016
- AFROTC Warrior spirit award F2015, peer elected teamwork & leadership award
- Developed GUI program for collection and processing of 120+ cadet Fitness records. Program capable of generating word & pdf documents Detailing statistical breakdowns across categories of interest

Miscellaneous

- Exposure to RTOS (Free RTOS) API's, limited tinkering with RTOS Kernel code.
- 3D printing & Design. I design through Blender (FOSS). Gcode flavor and Programming familiarity.
- Secret security clearance, strong familiarity with various military systems

EDUCATION

BS: Electrical Engineering

Western Michigan University

2015 – 2020 Kalamazoo, MI, USA

- Minors: Computer Science, Math
- Oriented towards Computer Engineering

Electrical Engineering coursework

Digital Design, Analog Electronics, MEMS,

Electrical Machinery, Microprocessors

Programming coursework

Algorithm Design, Data and File Structures,

System Programming, Microcontroller Applications

High School

Fishers High School

2011 Fishers, Indiana, USA

- Core 40

Some Projects

- **HemoFlux**: Wireless bloodflow monitoring with Tele-medicine applications (Wearables)
- **SafeSense-Live**: Web application for streaming Pressure sensor values via zigbee and rendering time Series data for impact detection and analysis.
- **WMUTemperatureApp**: Mobile application and flexible pcb for uAmp current consumption, Fully remote temperature monitoring.

SKILLS

- Programming languages: C 11, C++11, Java, Js, Asm
- Desktop app development: GTK3, Java FXML, QT (QML & others), Electron, C# Visual Studio
- Hardware descriptive languages: VHDL, Verilog
- System programming, low-level programming, PCB design
- Embedded programming, Classic Bluetooth, BLE, Android applications, Comm protocols (i2C, Spi, CAN)
- Every day usage of Git and Linux

INTERESTS

- Systems, Hardware-Software co-development
- Edge computing, Soft & Hard real time response
- CyberPhsical systems, Wearable applications