Wyatt Hansen

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SKILLS

Programming Languages: C / C++

Frameworks & Protocols: SPI, I2C, USART**,** GPIO, STM32 HAL, RTOS, FreeRTOS, ROS

Hardware: STM32F4 Series, ARM Cortex M, Nucleo, 16x02 LCD, Tiny RTC, Arduino

Development Tools: STM32CubeIDE, Git / GitHub, Agile, Linux, Multisim

PROJECTS

STM32 Robotic Arm Project

- 3D Printed Robotic Arm with a **STM32** micro-controller, integrating a smaller robot as the primary controller using a Super Loop Control methodology.
- Using STM32 **HAL**, I mapped the readings of the Potentiometers using the **ADC** Peripheral to control the servos through a Servo Driver with **I2C** communication.

Embedded Driver Development

- Utilizing an STM32 Nucleo-F446RE I implemented the drivers for the **GPIO**, **SPI**, **I2C**, and **USART**.
- Successfully completed a Clock and Calendar Display on an 16x02 LCD using an Tiny RTC.

Task Scheduler with Round Robin Prioritization

- Utilizing **C** to create tasks to toggle LEDs using **Register Manipulation** of the GPIO.
- Implemented the Process Stack Pointer for the tasks and Main Stack Pointer for the scheduler.
- **Debugging** was done by enabling the Usage, Memory Management, and Bus Faults.

Krisys Line Following Robotics

- Developed autonomous car using Xilinx BASYS 3 FPGA, **Multisim**, 2 DC motors, and Capacitance Sensors.
- Created a State Machine and Controller Decision Table for PWM Duty Cycles.

EDUCATION

Texas A&M University, College Station, Texas — December 2021
Bachelor of Science in Computer Engineering
Minor in Cyber Security

Lone Star University, Kingwood, Texas — May 2017
Associate of Arts

Fast Bit Embedded Courses — November 2023 – March 2024

- Completion of Embedded Driver Development, Mastering RTOS, and Embedded Systems Programming

WORK EXPERIENCES

dkCrew, LLC, Splendora, Texas — March 2020 – Present
IT Administrator and Operations Manager

- I played a crucial role in maintaining the smooth operation of the organization's IT environment, supporting users, ensuring data security, and contributing to the strategic planning of IT initiatives.
- Responsible for overseeing the day-to-day activities and ensuring efficient and effective operations.

Genesis Dimensions, Houston, Texas — Summers of 2017, 2020, and 2021
Engineering Intern

- Successfully installed and implemented Taiga, an open-source Agile project management tool, on in-house servers, enhancing project coordination and management.
- Assisted in the manufacturing and integration of industrial control panels for a Kuka Robot and a Material Flow Control System

Arrington Automation, Houston, Texas — August 2018 – August 2019
Engineering Intern

- Collaborated with a team of engineers to contribute to the design, testing, manufacturing, and integration processes of industrial control panels for control systems.