KRISTOPHER PERALES

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System engineer with experience in developing a system to solve a given problem statement. Proficient with C & C++ programming languages to develop electrical engineering applications, and have a background using MATLAB, Python, VHDL. With project work experience featuring: a senior design project consisting of a heart rate, temperature, and movement monitor developed using C++. An HDL semester project containing a simplified matrix engine developed using RTL oriented VHDL. A computer networks layer 7 calculator protocol using TCP client-server architecture. I want to continue to strengthen my understanding of computer programming and electrical systems design and programming.

PROJECTS

- Firefighter health monitoring system: The system was a wireless health monitoring wearable device intended for use by active firefighters, the vital signs monitored were movement, temperature of the room, and heart rate. Where I developed the sensor devices heart rate, temperature, movement monitoring, and haptic feedback algorithms. The project was completed throughout the year of 2019 and was sponsored by San Marcos Fire Department and Texas State University.

- Simple Matrix Engine: A simple matrix execution engine, where I developed and executed the goal of fetching an instruction from a created instruction memory, decode the fetched instruction, perform the operation, writeback to registers, memory, and continue until stop instruction is reached. Completed in the summer of 2019 as a semester project for VHDL.

- Austin Weather Data Analyzer: The project was used to determine how viable renewable wind and solar energy would be in Austin, Texas based on 2015 and 2016 weather information. The raw data was manipulated to only consist of the hourly data for each year. After the hourly data was used to determine the monthly and hourly power output for one solar panel and wind turbine. Then the conditional probabilities and joint probabilities for wind speed based on weather, as well as weather condition based on previous weather conditions.

- Layer 7 Protocol Calculator: Using a TCP client and server connection after a client connects to the server, the client may perform an add, subtract, multiply, or divide based on the operands provided to the server. The server will ensure mathematical errors are not present i.e., divide by zero. If no errors are present, write the result appended to the end of the data provided by the client back to the client over the established connection. The project was written in C and fully functional for Linux systems.

- Custom Architecture Microcontroller: Using Real Digital's FPGA Blackboard an architecture developed in class was implemented to perform a wide variety of instructions: Add, Subtract, Multiply, Divide, the different bit operations, data memory manipulation, and stack manipulation. Where the architecture follows the five-stage pipeline to fetch, decode, execute an instruction, write to memory (if necessary), and write back to registers. The project was written in System Verilog.

EDUCATION

GRADUATED: DECEMBER 2019
B. S. ELECTRICAL ENGINEERING, TEXAS STATE UNIVERSITY
I achieved a 3.8 GPA with relevant learning opportunities in VLSI, HDL, DSP, Linear Control Systems

Current: August 2022 – May 2024
M.S. ELECTRICAL ENGINEERING, TEXAS STATE UNIVERSITY
Consisting of Advanced Computer Architecture and Computer Networks, current GPA of 4.0

WORK EXPERIENCE

JUNE 2021 – AUGUST 2021
ADMINISTRATIVE ASSISTANT, DUCKWORTH PROPERTY DEVELOPMENT
I was brought on to complete two projects for them. One of these projects was to go back through the years to calculate the proportions each tenant paid for the various tenant expenses, property tax and bank loan. The other was to update their vendor list to ensure proper contact information, addressing, and insurance was up to date, as well as, cleaning up inactive vendors from their system. During this time, I was able to relieve the CFO with a significant portion of the accounting work such as: invoicing, bank and credit card reconciliation, and making payments on bills.

JULY 2020 – CURRENT
DELIVERY DRIVER, AMAZON FLEX
I make amazon deliveries throughout Austin, Texas, during this time I also serve as an on-site bilingual technical support for other Amazon Flex delivery drivers that are comfortable with only speaking Spanish.

MAY 2016 – AUGUST 2016
LIFEGUARD, LIFE TIME FITNESS
I was to keep watch over the patrons and facility in North Austin, Texas. During this time, I became one of the shift leaders through training new onboards and managing the duties other lifeguards did during my shifts.

ACTIVITIES

- Fitness Coach
- Private Tutor
- Creator and owner of two healthy food services available in Austin, Texas

*School transcript available upon request