Lance Tecson

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EDUCATION

University of Virginia – Charlottesville, VA   Graduated May 2024
Bachelor of Science in Computer Engineering
Relevant Coursework: Advanced Embedded Computing Systems, Computer Architecture, Operating Systems, Cryptocurrency, Data Structures & Algorithms, Advanced Software Development, Signals & Systems, Circuits, Electronics, Digital Logic Design, and Cybersecurity

TECHNICAL PROFICIENCIES

Modeling Programs: Multisim, Fusion 360
Programing Languages: Python, C, C++, Verilog, Solidity, Java, Assembly, CSS & HTML, JavaScript
Frameworks: Django

RELEVANT PROJECT EXPERIENCE

Self-Balancing Bike – Control Systems, Embedded, Communication Protocols, Bluetooth, Marketing   January – May 2024
- Facilitated multidrop SPI communication between a Bluetooth user interface, STM, and IMU
- Designed a PID control system to control the acceleration of a reaction wheel
- Created own GANTT chart to set deadlines, week by week expectations, meeting times, final product expectations
- Analyzed marketability of product
- Produced an itemized receipt to meet a budget
- Designed a complimentary filter to reduce noise; 25% faster than moving average filter
- Peer coded an IOS app to control bike

64-bit RISC-V CPU with UART capabilities – Verilog, FPGA, Test Writing, RISCV   January – May 2024
- Wrote a CPU using Verilog that supported RISC-V instructions and both transmitted and received UART communication
- Wrote a test in assembly to exhaustively test functionality
- Able to transmit 3 bytes of data in 0.0002 seconds

Multiple Ethereum Projects – Solidity, Web3, HTML, JS   August – December 2023
- **Custom Cryptocurrency:** based off ERC-20 on a private Ethereum blockchain
- **Custom NFT:** based off ERC-721 purchasable with my custom CC
- **DEX:** facilitated purchase of my custom CC with (fake) Ethereum
- **DAO & Web3:** created a Web3 implemented DAO interface website for my custom NFT
- **MetaMask Interface:** created a Web3 site that allowed for NFT creation and auctioning that used MetaMask to communicate with a smart contract to write these changes to a private Ethereum blockchain

Block Chasing Game in RTOS Environment – RTOS, Multithreading, Embedded, Scheduling   April 2024
Game played on an MSP launchpad with a joystick, buttons, and an LCD screen attached. Player controlled crosshair would eliminate moving spawned blocks via collision else a game over after a certain amount of time.
- Wrote collision detection logic operating in constant time
- Wrote enemy cube mechanics which included pseudo-random movement and pseudo-random spawning
- Pieced together custom RTOS environment utilizing RTOS code from prior projects
  - Utilized techniques included semaphores and dynamic priority scheduling

Student Course Lookup – Project Management, Django, Testing, Web Development, Scrum, GIT   January – May 2023
- Testing manager, wrote small and system wide tests to ensure proper functionality
- Dynamic website which used an API to pull data from university course list to display classes and transfer credits with a messaging feature between different users

Customizable LCD Display – Embedded Programing, Communication Protocols   January – May 2023
- Designed embedded code on a SPI encoded rotary to control the display of a customizable message onto an LCD screen

EKG – Digital Signal Processing, PCB Design   August – December 2023
- Designed schematics which amplified small signals from the human body and electrically separated nodes
- Cascaded systems which converted analog to digital signals, filtered amplified noise, and displayed one's heartbeat

Audio Responsive LED Display – Digital Signal Processing, PCB Design   January – May 2023
- Designed schematics for a circuit and sent schematics to a third-party company to produce the PCB
- Cascaded systems which converted audio to digital data, filtered and analyzed the frequency of the data, then used the data to dictate the intensity of LEDs

EMPLOYMENT HISTORY

Panera Bread – Alexandria, VA   August 2020 – June 2021
- Averaged 30 hours a week, handled responsibilities relating to food preparation, cashier, and cleaning