

# Lance Tecson

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## EDUCATION

**University of Virginia** – Charlottesville, VA

May 2024

*Bachelor of Science in Computer Engineering*

Relevant Coursework: Advanced Embedded Computing Systems, Internet of Things, Computer Architecture, Operating Systems, Cryptocurrency, Data Structures & Algorithms, Advanced Software Development, Signals & Systems, Circuits, Electronics, Digital Logic Design, and Cybersecurity

**Georgia Institute of Technology** – Atlanta, GA

(Starting) January 2025 – (Expected) December 2026

*Master of Science in Computer Science (Machine Learning focus)*

## PROJECT EXPERIENCE

**Self-Balancing Bike – Control Systems, Embedded Systems, Communication Protocols, Marketing, Agile** January – May 2024

- Facilitated multidrop SPI communication between a Bluetooth user interface, STM, and IMU
- Designed PID control system to maintain stability and complementary filter 25% faster and accurate than moving average filter
- Analyzed marketability of product and produced an itemized receipt to meet a budget
- Peer coded an IOS app to send instructions via Bluetooth

**64-bit RISC-V CPU with UART capabilities – Verilog, FPGA, Test Writing, RISC-V**

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 and receive 3 bytes of data in 0.1 milliseconds

**Multiple Ethereum Projects – Solidity, Web3, HTML, JS**

August – December 2023

- **Custom Cryptocurrency:** based off ERC-20 on a private Ethereum blockchain
- **NFTs:** 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 frontend 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 backend

**Block Chasing Game in RTOS Environment – RTOS, Multithreading, Embedded Systems, 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 with a backend to store messages and user actions
- Worked in an agile scrum style with self-made deadlines and expectations

**Customizable LCD Display – Embedded Systems, 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

## SKILLS

**Modeling Programs:** NiMultisim, Fusion360, Waveforms, AutoCAD

**Programing Languages:** Python, C, C++, Solidity, Java, Assembly, CSS & HTML, JavaScript

**Frameworks:** Django

**Miscellaneous:** Verilog, LaTeX, Microsoft Office, ModelSim Altera, GIT

**Soft Skills:** Adaptability, Communication, Teamwork, Problem Solving, Team Management, Creativity, Leadership

**Familiar Systems:** Linux and Windows