THOMAS TRAN

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EDUCATION

University of Michigan College of Engineering **Ann Arbor, MI**
Bachelors of Science in Computer Engineering *Aug. 2023 - Dec. 2025*

- **Selected Coursework:** Introduction to Logic Design, Computer Organization, Introduction to Electronic Circuits, Introduction to Signals and Systems, Programming and Intro Data Structures, Digital Integrated Circuits
- **Campus Involvement:** Michigan Aeronautical Science Association(MASA) Avionics Project Member

University of Michigan Dearborn **Dearborn, MI**
Bachelors of Science in Computer Engineering *Aug. 2021 - Aug. 2023*

EXPERIENCE

Michigan Aeronautical Science Association(MASA) **Ann Arbor, MI**
Avionics Project Member *Sept. 2024 - Present*

- Driving development of 2.4GHz LoRa-based telemetry system in a 10+ person Avionics team for real-time rocket flight data transmission, using dual-antenna ground station to enhance signal reception at altitudes up to 75,000 feet
- Orchestrating integration of radio systems with microcontroller firmware to achieve 40Kbps telemetry data rate
- Conducting RF link budget analysis and optimization to achieve -123.9 dBm received power sensitivity at 20km range

Kura Sushi Novi **Novi, MI**
Server *Jul. 2022 - Mar. 2023*

- Collaborated with a diverse 4-member rotating team to exceed monthly sales targets by an average of 5%
- Resolved customer concerns efficiently, maintaining a 87% satisfaction rate based on feedback surveys
- Adapted to peak hour rushes, serving up to 20 tables per day while maintaining quality service standards

PROJECTS

Register-transfer level Four Function Calculator - LINK

- Engineered a Verilog-based four-function calculator on a DE-115 board, processing 11-bit two's complement integers
- Implemented input by using push-buttons and switches for basic arithmetic, with outputs displayed on 7-segment displays, achieving operational accuracy through verification on hardware testing and ModelSim simulations

Traffic Light Controller - LINK

- Designed Verilog-based traffic controller managing four-way intersection with left turn lanes through FSM
- Implemented configurable timing logic (3s minimum green, 1s yellow) and sensor-based traffic optimization
- Integrated fail-safe logic preventing conflicting green signals and ensuring no lane starvation

Vehicle Cruise Control Simulation

- Developed a Simulink-based simulation of a cruise control system, applying principles of control theory to model vehicle dynamics, achieving performance optimization with minimized steady-state errors and controlled oscillations
- Analyzed system stability under varying conditions, achieving critically damped response within 1 m/s steady state error

Data Memory and Cache Simulator

- Built a CPU cache simulator in C++, implementing write-back and allocate-on-write cache policies with configurable block size, number of sets, and associativity parameters
- Implemented least-recently used (LRU) replacement algorithm and block selection logic, optimizing cache access patterns for instruction fetches, loads, and stores

TECHNICAL SKILLS

Languages: C++ 20, C 17, Python 3.11, Verilog, ARM
Software: ModelSim, Quartus, Cadence Virtuoso, SPICE, Matlab/Simulink, Altium
Libraries, Tools, Technologies: CMake, GDB, JSON, openFrameworks, Linux, Git, VS Code, MacOS, Windows