# THOMAS TRAN

✉ ttrann@umich.edu  in Linkedin
🌐 US Citizen  ⚫ github.com/tommytt427  ▪ +1 (248) 635-8473

## 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*

## TECHNICAL SKILLS

**Languages**: C++ 20, C 17, Python 3.11, Verilog, ARM, X86
**Software**: Microsoft Office, Cadence Virtuoso, SPICE, CAD, Matlab, Matlab Simulink, Quartus, ModelSim, Altium
**Libraries, Tools, Technologies:** CMake, GDB, JSON, openFrameworks, Linux, Git, MacOS, Windows

## 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 a complex traffic light controller system in Verilog, managing multiple scenarios and sensor inputs
- Constructed a finite state machine (FSM) to handle various traffic conditions and timing logic
- Optimized timing logic to control light durations and prevent traffic conflicts, improving overall system efficiency

### 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
- Implemented control methods (Proportional, PI, PID) to analyze system responses under different conditions

### Data Memory and Cache Simulator
- Built a CPU cache simulator in C++, accurately modeling processor execution of assembly-language programs
- Implemented a write-back, allocate-on-write cache policy with least-recently-used replacement, optimizing cache access

### Mars Rover Project
- Led a team of four to design and construct a rover capable of traversing challenging terrain
- Utilized CAD software to create 3D parts, improving design precision and reducing prototyping time
- Programmed rover functions using Arduino, implementing adaptive control algorithms for various surface types

## EXPERIENCE

**Michigan Aeronautical Science Association(MASA)**  Ann Arbor, MI
*Avionics Project Member*  *Sept. 2024 - Present*
- Cooperate in a 5-member Avionics sub-team on a radio project development for rocketry application
- Usage of Altium for design and implementation of communication systems for high-altitude rocket

**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