Thomas Contis

thomas@contis.org | linkedin.com/in/thomascontis | US Citizen

Objective

Master's ECE graduate with expertise in DSP and firmware, immediately available for full-time embedded software engineering role at an innovative company. Open to relocating anywhere in the US.

Education

Georgia Institute of Technology – M.S. in Electrical and Computer Engineering (4.00 GPA) December 2024
Georgia Institute of Technology – B.S. in Electrical Engineering, with Highest Honors (4.00 GPA) May 2023

Experience

Embedded Development Intern, SlateSafety – Atlanta, GA May 2024 – August 2024

- Presented potential implementations of features from competing occupational safety wearables to C-suite
- Developed IMU FIFO buffer streaming capability and Python tool for real-time visualization and data capture into Pandas DataFrames, establishing a convenient algorithm development pipeline
- Evaluated three fall detection algorithms with F2 score to reduce false negatives. Best performer now in pilot testing
- Augmented armband wearable with onboard shoulder angle computation to rival top competitor in target market
- Refactored IMU driver C code by implementing inline functions to reduce redundancy in I2C read/write operations, organizing parameters into structures, and clarifying register values with enumerations and bitmask constants

Embedded Controls Graduate TA, Georgia Institute of Technology – Atlanta, GA August 2023 – Present

- Mentored 54 students during three-hour labs by explaining key concepts, and assisting with code debugging
  - *Control Systems*: Command shaping, integral control, parameter identification, state-space, trajectory tracking
  - *Embedded Systems*: C, datasheets, GPIOs, HAL, interrupts, logic analyzers, register configuration, SPI, watchdogs
- Provided detailed homework feedback and weekly three-hour office hours to support 113 students' learning
- Received "2024 Outstanding ECE Graduate Teaching Assistant Award" at annual HKN Spring Picnic

Undergraduate Research Assistant, Inan Research Lab – Atlanta, GA January 2022 – May 2023

- Awarded two institution-level research fellowships to develop firmware for healthcare wearables research lab
- Offloaded ankle motion detection for bioimpedance spectroscopy device onto embedded IMU state machines
- Optimized calibration procedure for dynamic tissue resistance simulator board (four interconnected rheostats) using MATLAB genetic algorithm, decreasing dictionary error by 80% in simulations, and 40% in real-world testing

Projects

Wire-Cutting Machine

- Developed multi-threaded wire-cutting machine using mBED RTOS in C++ to control DC and stepper motors
- Created interface for custom wire lengths and notches (±0.2") using LCD display and BLE module for phone control

LED-Based Robot Troubleshooting Module github.com/RoboJackets/robocup-firmware/pull/112

- Programmed a C++ module to display real-time error severity and subsystem status in a circular queue using three NeoPixel LEDs, reducing troubleshooting times for common issues on a RoboCup Soccer League robot

Leadership

Lab Supplies Chair, IEEE-HKN Beta Mu Chapter – Atlanta, GA December 2021 – May 2023

- Co-wrote a proposal to IEEE-HKN Life Member Committee, resulting in a $2k grant for expanded offerings
- Coordinated Summer and Fall 2022 kit sales to 900 students across three courses, generating $22k in revenue
- Introduced new breadboard offering to address unmet need, aiding over 100 students
- Maintained timely communication with three professors regarding flyers, inventory, and kit changes

Skills

Programming:	C, C++, Git, MATLAB, Python (Matplotlib, NumPy)
Firmware:	GPIOs, HAL, interfaces (I2C, SPI, UART), RTOS (interrupts, timers)
Signal Processing:	Adaptive filtering, digital (FIR/IIR) filtering, statistical machine learning, wavelets
Instrumentation:	Bode analyzer, function generator, logical analyzer, multimeter, oscilloscope