Peter Tran

Petrtran01@gmail.com • (609) 287-8051 • petr010.github.io • linkedin.com/in/petr01

Education

Rutgers University – BS in Electrical and Computer Engineering – 4.0 **May 2024**

Stockton University – BS in Applied Physics – 4.0 **May 2022**

Work Experience

Electronics and Design Engineer (Freelance), Chloë Bass – New York, NY **Oct 2023 – Dec 2024**

- Prototyped a light fixture to drive a 12V landscaping LED with periodic dimming capabilities with an ATtiny85 MCU and MT3608 boost converter to be driven at low power with an external battery pack via USB
- Developed an embedded system for PWM-based dimming between ATtiny85 and MT3608 over a 2N2222 NPN transistor to isolate power rails between the 5V MCU and 12V LED, maintaining sustainability of ATtiny85
- Designed and 3D-printed a conical housing to optimize stacking and maximize luminescence in a cylindrical enclosure
- Implemented a 0.1µF capacitor to reduce MT3608 voltage noise, improving circuit stability
- Revised project by applying a 0.1uF capacitor across the MT3608 output to reduce noise produced by voltage spikes between dimming cycles and replacing ATtiny85 with Arduino nano, improving brown-out resilience, and project sustainability

Tech Associate, Staples – Somers Point, NJ **June 2024 – Present**

- Assisted 20 to 30 customers a day on tech-related problems and serviced computers and laptops

Projects

Pokeball Retro Arcade Emulator petr010.github.io/projects/pokeboy.html

- Embedded a retro game emulator into an upcycled Pokéball, raising 30,000 views on YouTube within the first month with the support of sponsor PCBWay, providing PCB and 3D printing services
- Open-sourced a fully exhaustive build guide consisting of B.O.M., PCB gerber files, 3D printable STL files, and visuals to assist in software and assembly processes, with 15 confirmed PCB orders

Moonshake-3D Headphones petr010.github.io/projects/moonshake.html

- Fabricated a functional set of headphones sponsored by JLCPCB and JLC3DP modeled after the renders made by CG artist Moonshake3D

Self-Driving Car petr010.github.io/projects/muppetMobile.html

- Secured 15th out of 45 teams at Rutger's ECE capstone event with a toddler's powerwheels car reconfigured to self-navigate for delivery and guidance purposes
- Reduced expected costs by a factor of 67 from a projected cost of $20,000 to a budget of $300 while maintaining SLAM generation through LiDAR and autonomous driving through ROS2 humble

Research Lead, NJ Governors STEM Scholars – Chatham, NJ petr010.github.io/projects/gss2.html

- Mentored team of 10 high school students within 7 months in engineering to develop a proof of concept for the 3D filament splicer, a 3D printer accessory to join leftover filament strands to reduce waste, achieving successful splicing of PLA filament between 125 and 160 degrees Celsius
- Implemented a divide and conquer strategy by subcategorizing groups such as heating, display, and feeding teams based on student interest to quickly code, prototype, revise, and build the 3D filament splicer

Skills

EDA/CAD: KiCad, LTSpice, EasyEDA, Virtuoso, Fusion360, Onshape

Analysis: Transience Response, Failure Diagnostics, Reliability Testing

Languages: C, C++, Python, MATLAB, Java, RISC-V

Microcontrollers and Microprocessors: Arduino, Teensy, ESP32, STM32, Raspberry Pi, Jetson Nano