

PAUL KOKHANOV

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TECHNICAL SKILLS

Electrical: Electrical Circuit Troubleshooting, PCB Design, Altium Designer, Design For Test, Design For Manufacturing

Programming Languages: Ladder Logic (PLC), Python, C++, Kotlin, MATLAB, Verilog, SKILL

Technologies: RS Logix 500 & 5000, FactoryTalk(UI), Virtuoso, Visual Studio, Android Studio, PSS/E 34

EXPERIENCE

Analog Circuit Design Engineering Co-op | *Microchip Technology Inc* May. 2023 – Aug. 2023

- Enhanced die design and reduced unwanted component coupling by recreating internal structure sections of the Phase Frequency Detector
- Characterized overall Jitter performance of the microchip by formulating & conducting tests on various modules of a PLL including the PFD, Charge Pump & VCO
- Developed Python-Skill scripts that interface with Virtuoso to automate creating & analyzing schematic simulations

Software Developer Intern | *TextNow* May. 2022 – Aug. 2022

- Implemented, tested and maintained Google's conversation "Bubbles" feature to over 100,000 daily active users' to enhance consumer experience
- Investigated and provided solutions to various startup performance issues found using stack traces in order to reduce application launch time
- Optimized app performance by creating Automation and Unit tests using the JUnit testing framework to uphold app reliability in case of modification of the code-base

Automation Technician Co-op | *Tenneco Canada Inc.* Jan. 2021 – Apr. 2021

- Performed troubleshooting to production equipment being controlled by a PLC (Allen-Bradley SLC, MicroLogix, and CompactLogix) using RS Logix 500 & 5000 to track the live logic status
- Fulfilled a dual robot synchronized weld path program (Yaskawa Motoman) & Optimised a palletizing path for a robotic bend cell (Fanuc Robot) in order to prevent robot collisions
- Maintained effective productivity on welding robot cells by carrying out Preventative Maintenance consistently

PROJECTS

Electrical Sub-Team Member — University of Waterloo Robotics Team Apr. 2022 – May 2023

Technologies: Altium, Confluence

- Designed a 48-24V Multiphase Buck converter from scratch to deliver 35 amps to Mars Rover Robot's 24V systems
- Validated the buck converter layout using PDN analysis to ensure proper conductor mass for the given application
- Assembled power resistor array in order to place various loads on the buck as well as calculated important performance metrics including load regulation and efficiency.

Navigation App - (github.com/PaulKokhanov1/Navigation-App) Aug. 2021 – Nov. 2021

Technologies: Kotlin, Android Studio, Arduino

- Uses the Google Maps API and communicates with a circuit through Bluetooth to guide user
- Implemented Directions API to map users' selected destination through decoded polylines
- Created physical user interface using an Arduino UNO, 4 LEDs, an HC-05 Bluetooth Module and an MPU 9150

Energy Savings on Plant (Tenneco) Wide Exhaust Fans' Program Mar. 2021 – Apr. 2021

Technologies: RS Logix 500, FactoryTalk, PLC, VFD, HMI

- Implemented a PLC/VFD/HMI control system to record the power consumption of an exhaust fan motor
- Optimised motor rotation frequency using RS Logix 500 based on static pressure measured by an analog sensor
- Programmed UI on an Allen-Bradley panel view to expedite the control and observation of the system parameters

EDUCATION

University of Waterloo

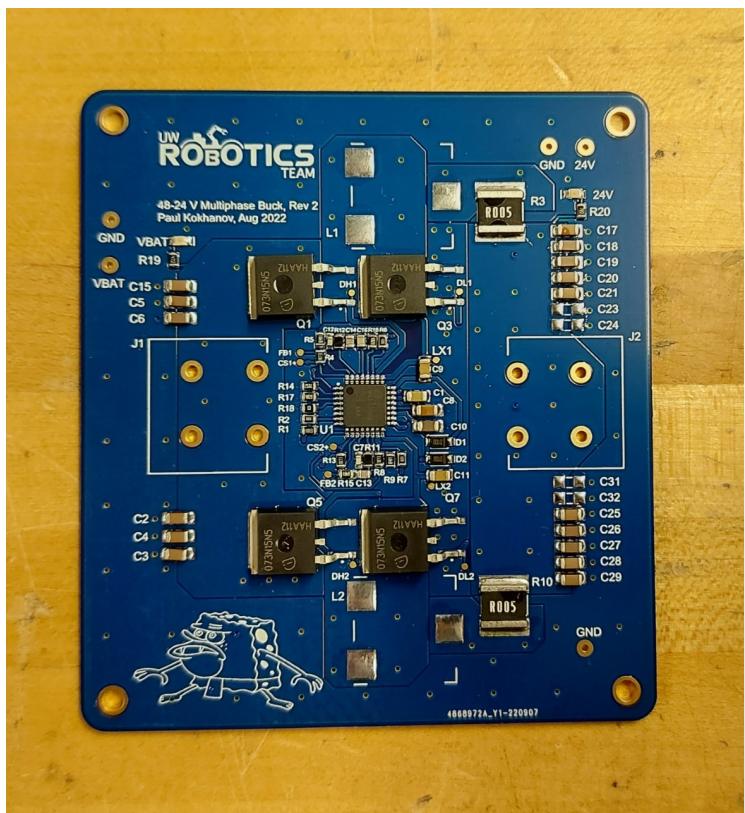
Bachelor of Science in Electrical Engineering - Cumulative GPA: 92.91%

Waterloo, ON

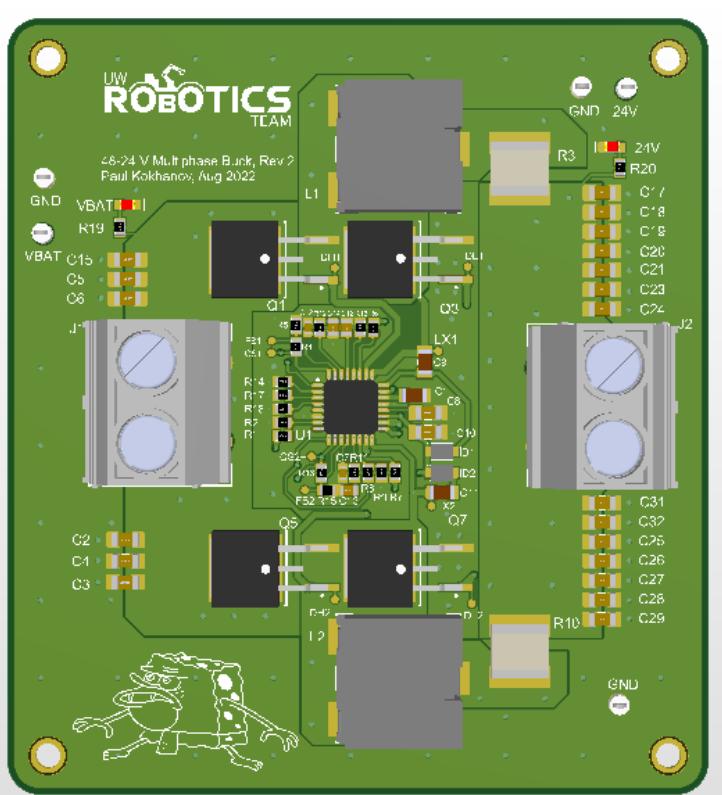
Sept. 2020 – Expected Apr. 2025

PORTFOLIO

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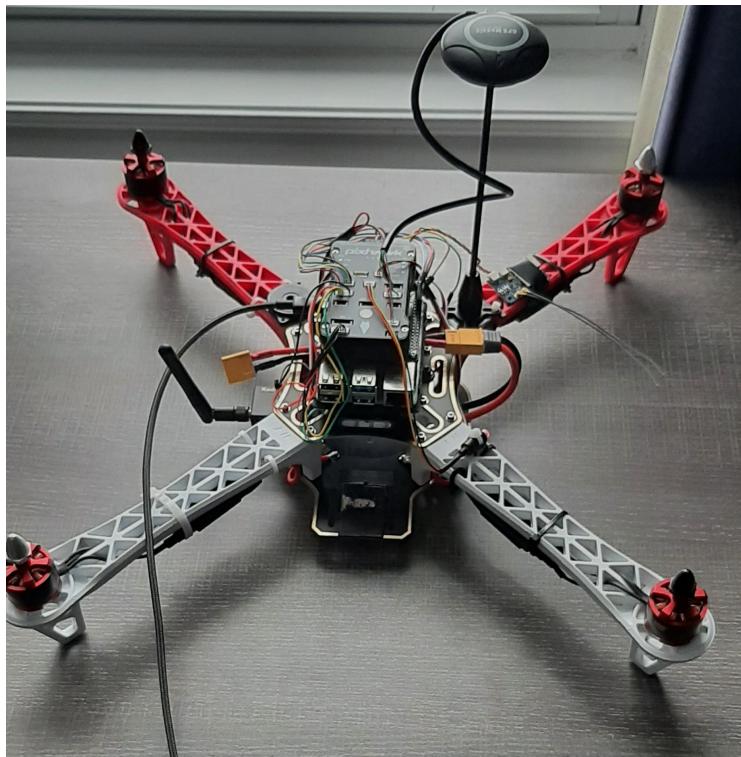


(a) Physical 48 - 24V Multiphase Buck converter

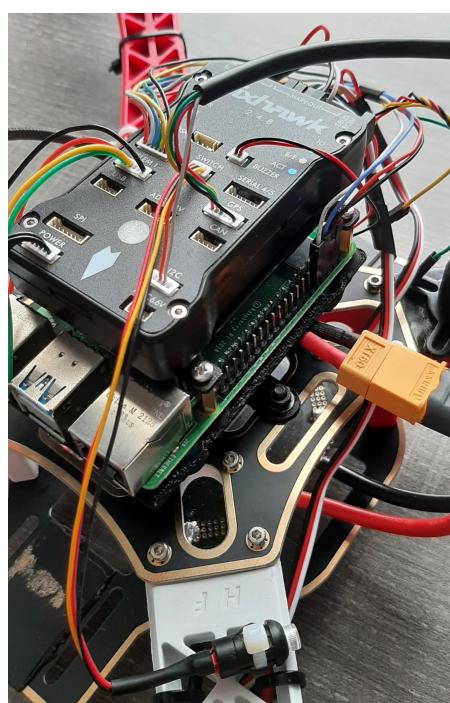


(b) PCB 3D Print from Altium Designer

48-24V Multiphase Buck Converter: Created using Altium Designer. Tested PCB using PDN analysis as well as applying various loads to calculate important metrics



(a) Full Raspberry Pi Drone without Props

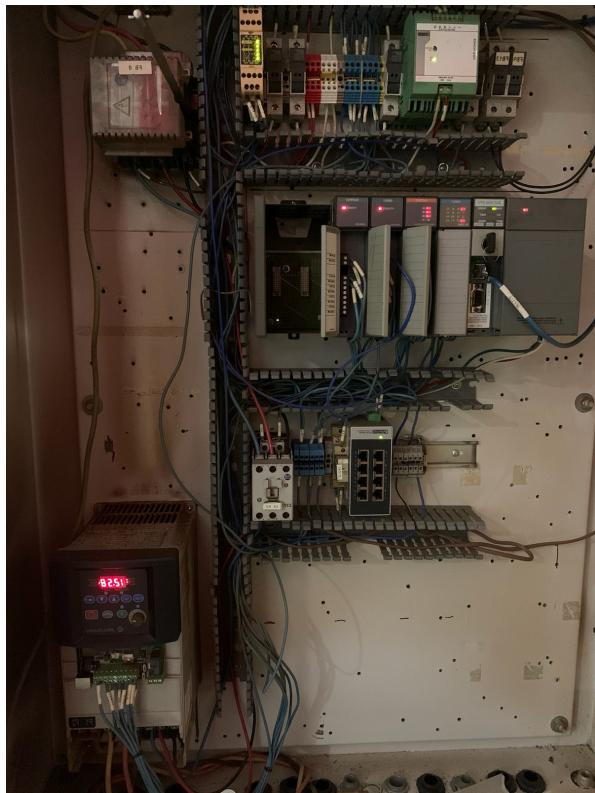


(b) PixHawk Flight Controller as well as Raspberry Pi 4B

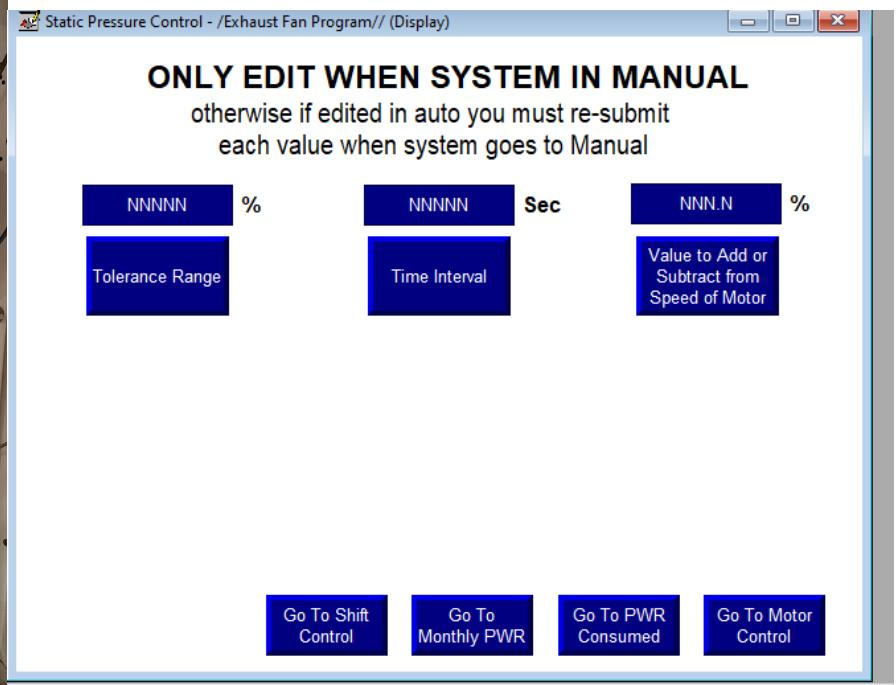
Raspberry Pi Drone: Includes: GPS, Telemetry Modules, ESC's, Brushless Motors. Powered by LIPO batteries, configured using ArduPilot's Mission Planner Software

PORTFOLIO

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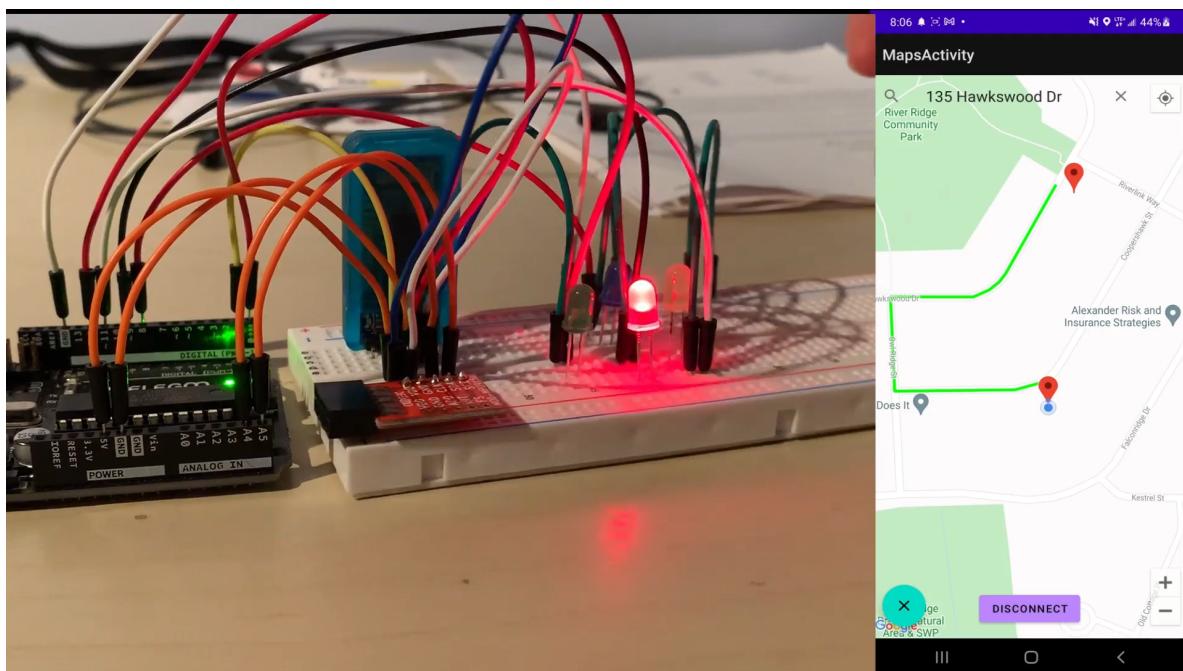


(a) Wired Electrical Cabinet



(b) Example HMI screen to display Fan info & interact with VFD

Energy Saving's Program: Designed and Programmed closed loop system to monitor welding cell exhaust fans and manually or automatically adjust fans' rotation frequency

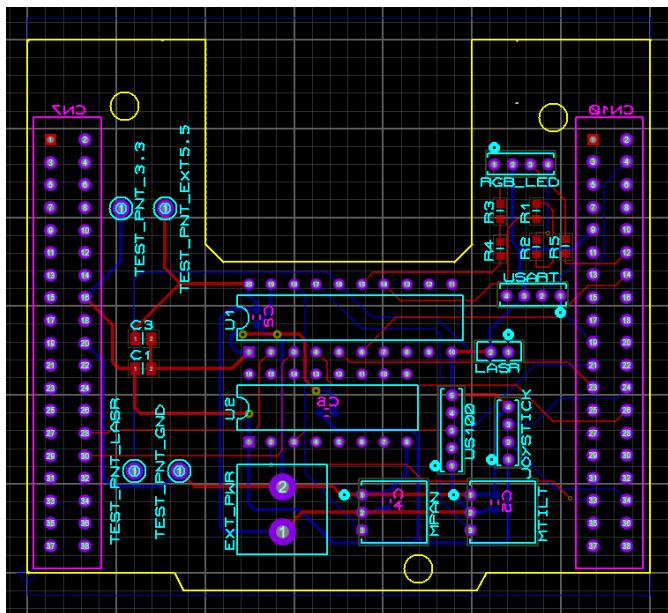


(a) Prototyped Circuit and Application UI

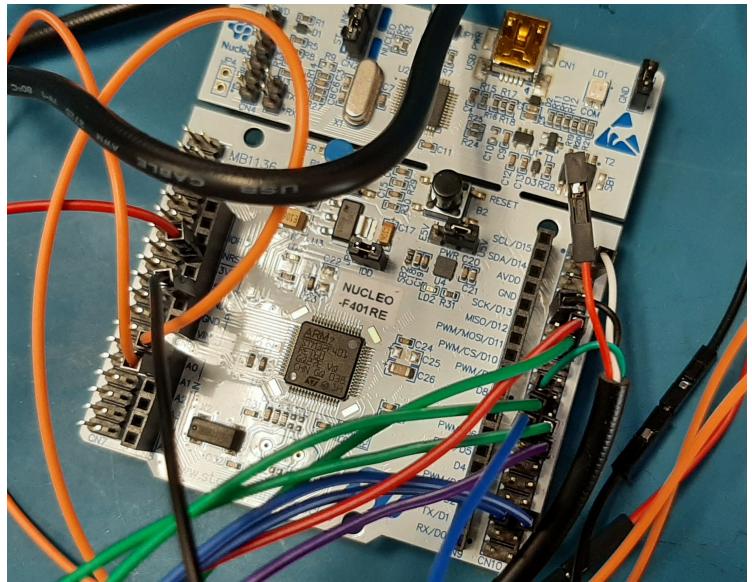
Navigation App: Guides user to inputted destination via LED's. Created using Google Maps API, Arudino UNO, Magnetometer and Bluetooth Module

PORTFOLIO

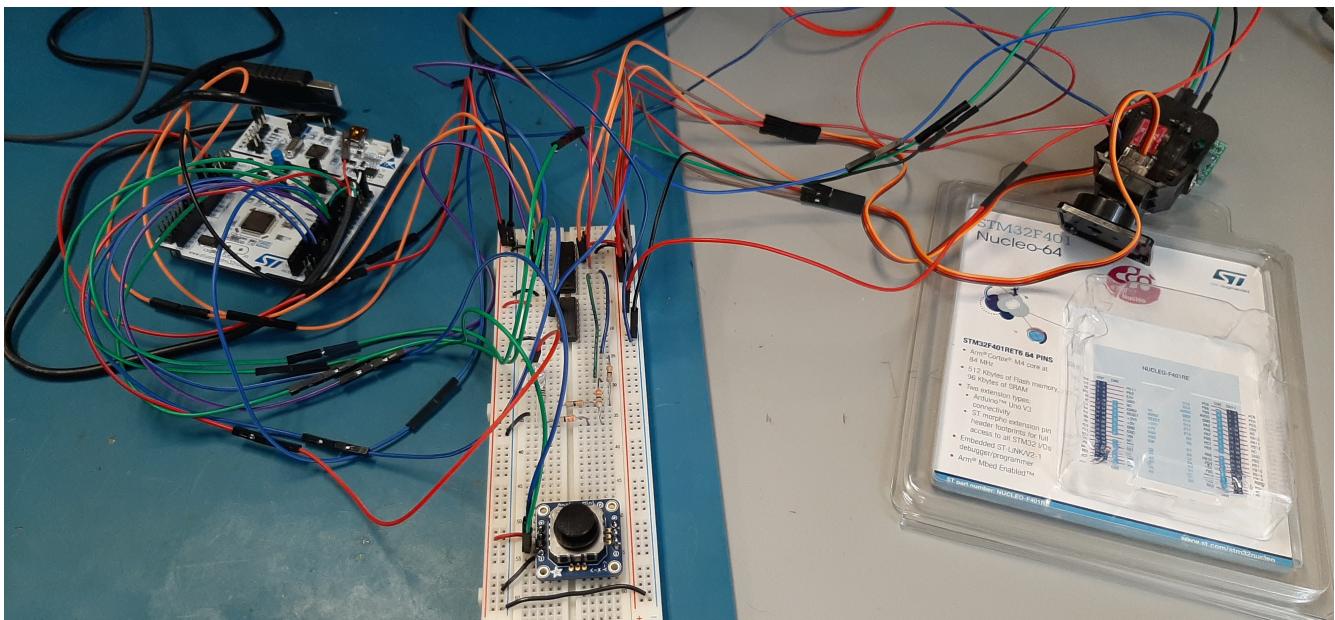
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(a) PCB Layout using Proteus Software



(b) MCU used for managing peripherals and internal software



(c) Full prototype layout including: Nucleo, Joystick, Servo Motors, Ultrasonic Sensor & Laser

Object Sensing System: Programmed an MCU Development Board (Nucleo F401RE) to accurately interface with all components of a Rover's Subsystem in order to determine an object's angular width, distance and center position