

# 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

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

## EXPERIENCE

**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
- Configured safety area scanners for various production equipment to uphold operator safety

## PROJECTS

**Electrical Sub-Team Member — University of Waterloo Robotics Team**

Apr. 2022 – Present

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](https://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
- Maintains and updates user location and direction heading through foreground service
- 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
- Created the electrical drawings and wired a control cabinet dedicated to this application

## EDUCATION

**University of Waterloo**

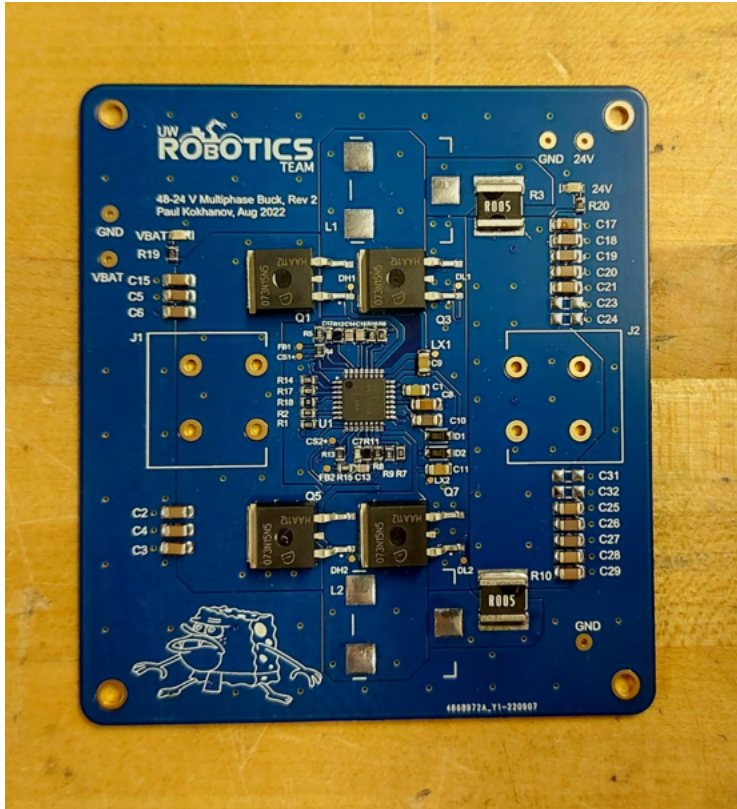
Waterloo, ON

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

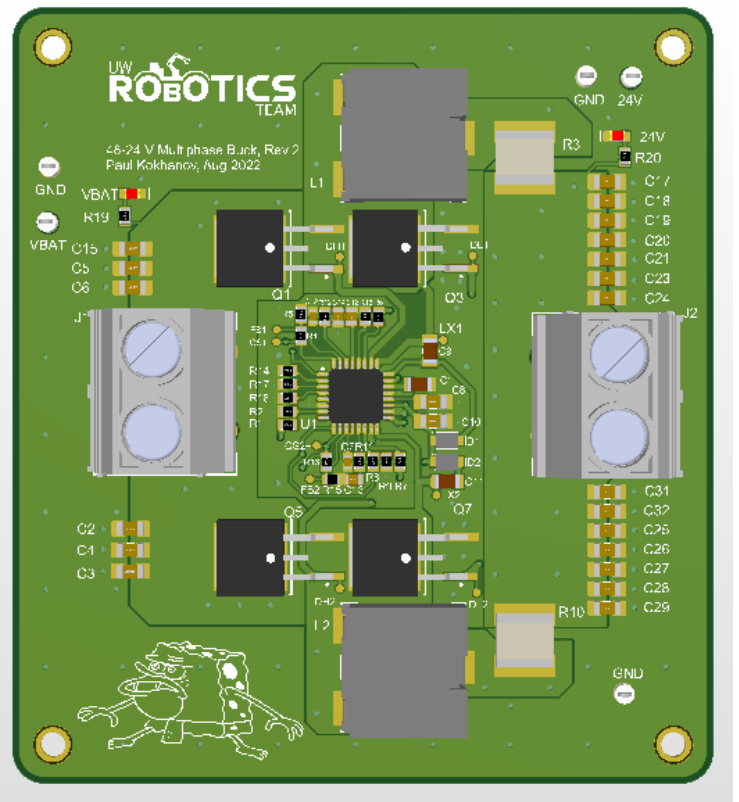
*Sept. 2020 – Expected Apr. 2025*

# PORTFOLIO

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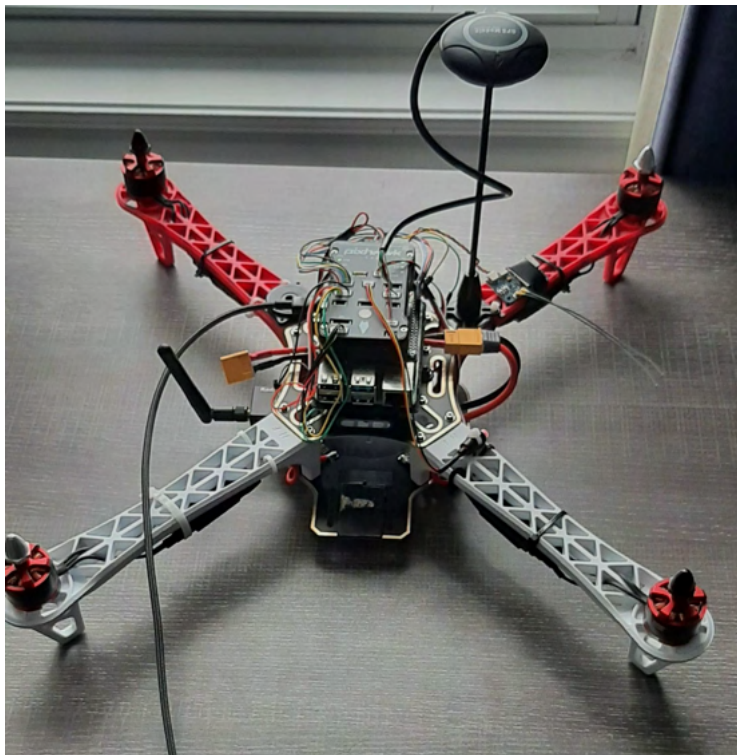


(a) Physical 48 - 24V Multiphase Buck converter

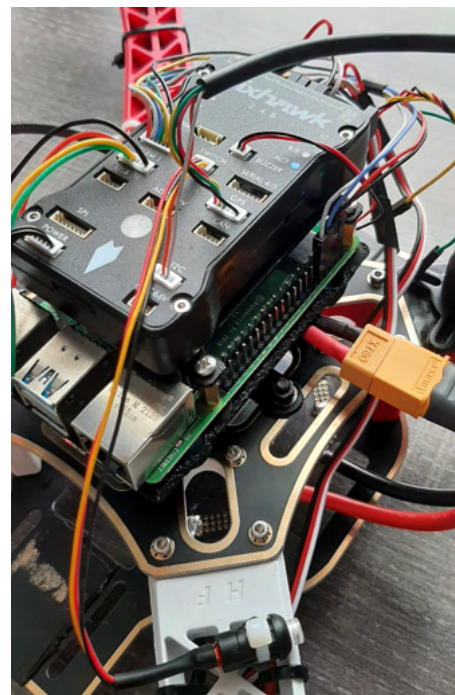


(b) PCB 3D Print from Altium Designer

**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

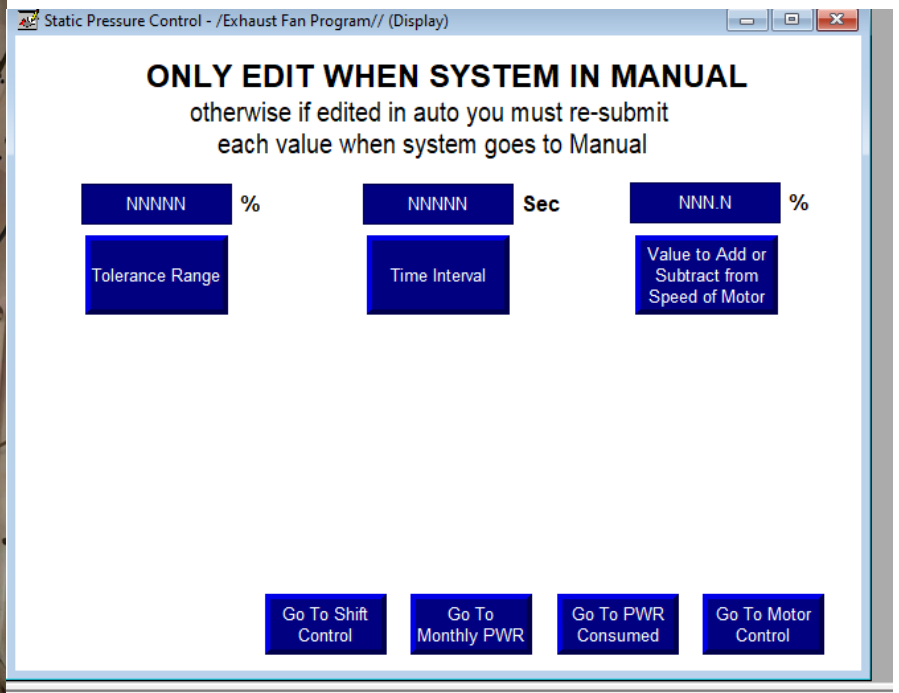


# PORTFOLIO

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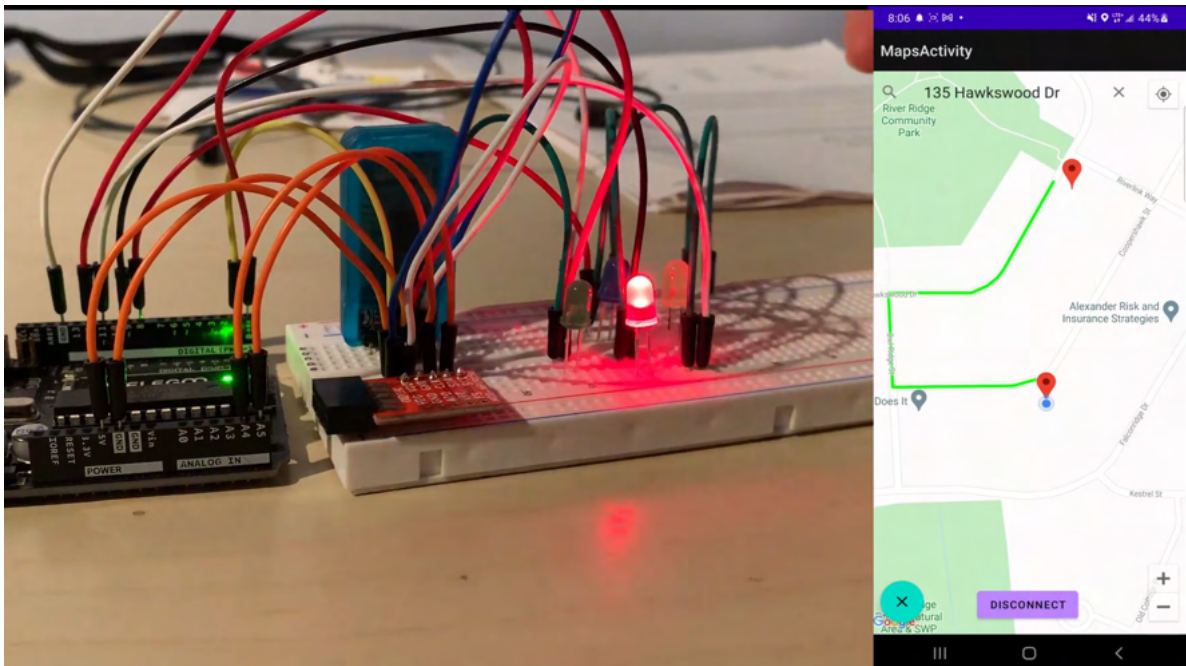


(a) Wired Electrical Cabinet



(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

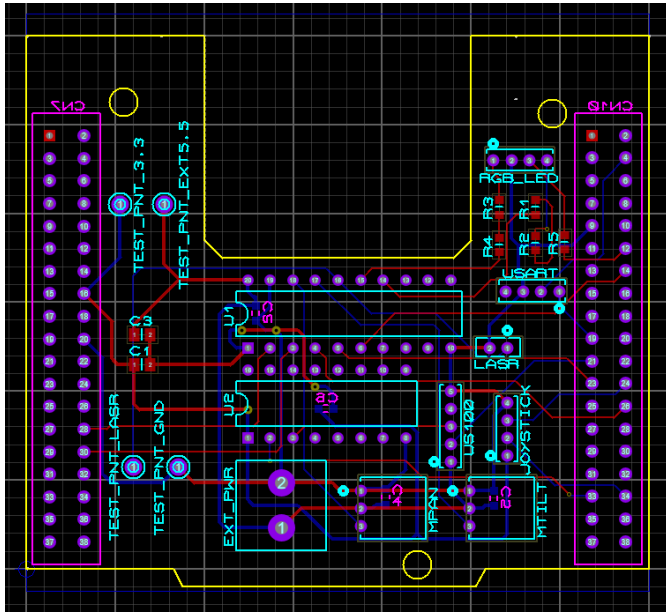


(a) Prototyped Circuit and Application UI

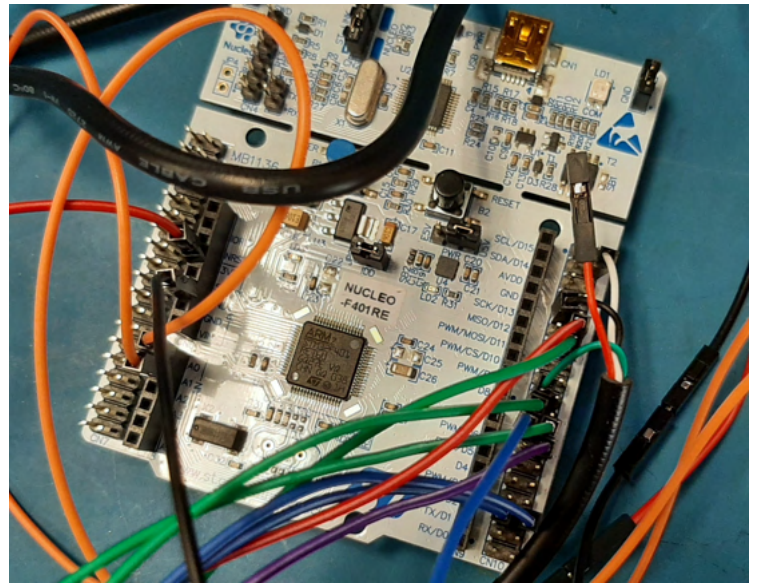
**Navigation App:** Guides user to inputted destination via LED's. Created using Google Maps API, Arudino UNO, Magnetometer and Bluetooth Module

# PORTFOLIO

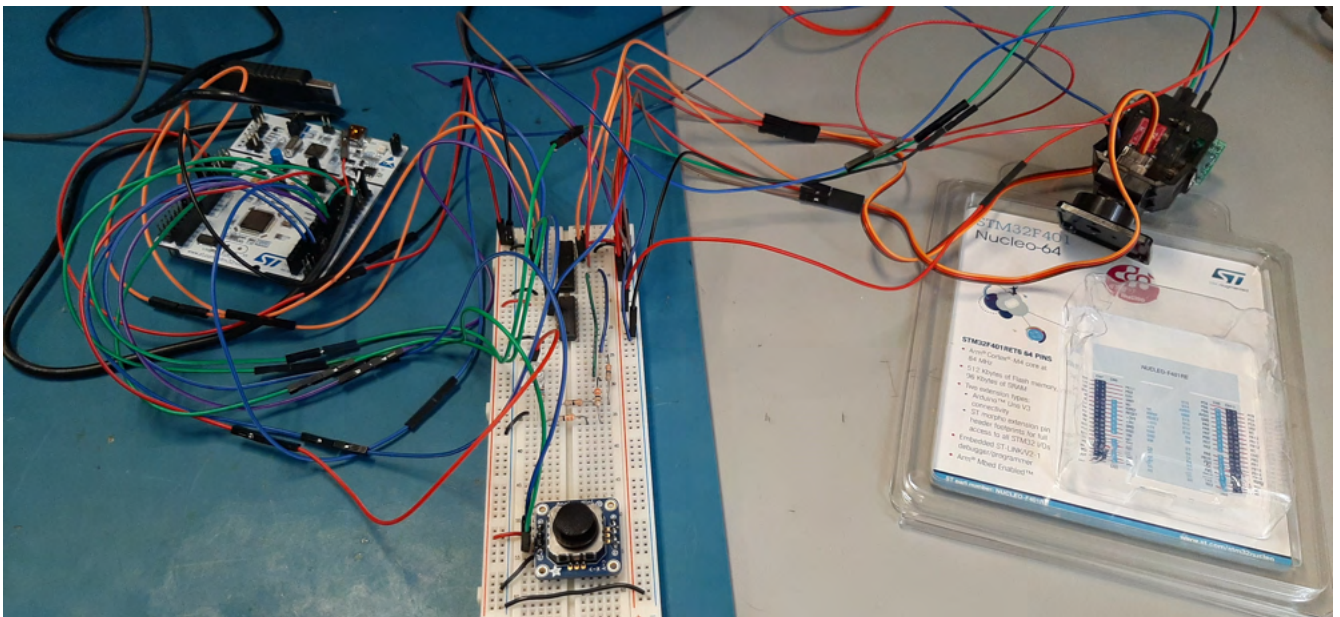
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(a) PCB Layout using Proteus Software



(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