Albert Dayn

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/* EDUCATION */

CU Boulder — *2015 - 2020*

M.S. in Computer Science - 3.8 GPA

B.S. in Computer Science - 3.8 GPA

/* EXPERIENCE */

L3Harris Intern — *Summer 2019*

Architected and implemented embedded coms network testing tools in C++ for the F-35 embedded systems team.

CU Teaching Assistant — *2017 - 2019*

Lead TA for CU Boulder's programming language design course. Included making course material, leading recitations, and directing other TAs / course staff.

Rincon Research Intern — *Summer 2018*

Created a 40MHz pulsed radar using software defined radios, streaming convolution, and data processing in Python.

Performed field tests with SDR and custom built helical antenna to track the path of a semi-truck and calculate distance to buildings.

DN2K Intern — *Summer 2016 & 2017*

Added production features to Java backend and Angular web app. Reduced technical debt by adding JavaScript unit tests to existing code.

/* SKILLS */

Tools

GitHub, Linux, Docker, TravisCI, RabbitMQ, Google Compute Engine, MongoDB, IntelliJ, GDB, SQLite, Angular, NumPy, Flask, C++ STL, Logic Analyzers, Oscilloscopes

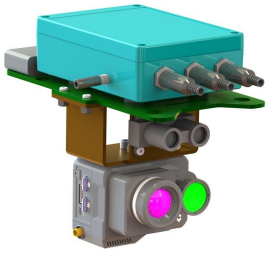
Langs

C++, Haskell, Scala, Python, Java, JavaScript, Bash, Rust, C, TypeScript, OCaml, Elm

/* PROJECTS */

Turbine Thermography Drone Payload

Worked with an inter-departmental mechanical and electrical engineering student team on a drone payload for multi-spectral infrared scans of wind turbine blades for wear, stress, and fault inspections via infrared thermography. Implemented radial image distortion compensation, RTK GPS Correction, image stitching, and GUI design. Tasked with selecting and justifying a top of the line $10k infrared camera.

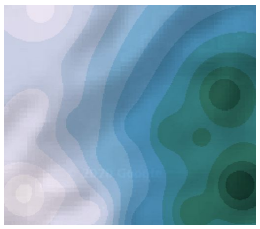


Sidechannel Hardened Python Compiler

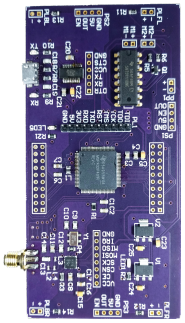
Made cross-platform python → x86 optimizing compiler. The python subset included closures, control structures, and classes. Generated a side channel protected binary which obstructed runtime and branch prediction attacks with conditional execution instructions.

Autonomous Boat Data Portal

Created a cloud hosted web app that served data collected from autonomous boat missions. REST backend with a python batch data processor that generates ocean temp heatmaps. Run on Google Compute Engine with K8s / Docker using continuous integration building and testing with code coverage. Angular Typescript Frontend.



Custom PCB RC Car and Remote



Programmed ARM Cortex-M4 on a custom designed PCB to make a remote control transmitter and car. Created a real time interrupt driven system for processing and sending packets wirelessly, SPI, priority based task queueing with interrupts and function pointers. Included logging and a control console over UART.