Christopher Kitras

(435) 233-6169 | kitras.dev | chkitras@gmail.com | linkedin.com/in/christopher-kitras

EDUCATION

Brigham Young University **Provo, UT**

- PhD Electrical and Computer Engineering (3.97/4.0) Expected Graduation **April 2026**
- BS Computer Engineering (3.6/4.0) Graduated **December 2021**

COMPUTER/TECHNICAL SKILLS

- Python
- C/C++/CUDA
- Linux/Bash
- Systems Design
- Computer Networks
- AVR/ESP
- InfluxDB/Grafana
- HDL Programming

ENGINEERING EXPERIENCE

Project: **Radon Mitigation through Optimized HVAC Scheduling | December 2023 - Present**
Objective: Designed a system to reduce radon levels to healthy limits in a large structure without modifying the original architecture.

- Optimized monitor selection, choosing a cost-effective yet high-performance SunRADON device to balance budget and system needs
- Engineered a Python-based client to interface with an undocumented API lacking official clients
- Formulated an algorithm to project the optimal HVAC scheduling for radon mitigation
- Collaborated with a cross-disciplinary team of engineers and environmental scientists
- Awarded Best Poster for this project at S4S 2024

Project: **Location Verification of Crowd-Sourced Sensors | April 2022 - July 2023**
Objective: Devised a software-based solution for precise device location using traceroute data

- Streamlined location determination with minimal firmware changes avoiding hardware alterations
- Created a secure registration process to associate location info with sessions
- Led algorithm creation to monitor routing path changes and detect location shifts
- Conducted experiments to assess algorithm performance
- Authored and published research on framework in ICCCN 2023

Project: **Mongolia Air Quality Monitoring | April 2019 - August 2023**
Objective: Developed a cost-effective air quality monitor to gauge effectiveness of energy-efficient housing versus traditional housing.

- Gained proficiency in the Particle microprocessor platform and its associated web-console
- Oversaw sensor fleets using cloud tools, including executing over-the-air updates
- Optimized sensor firmware for modular design, allowing for new peripherals without redesign
- Refined cloud data transfer efficiency by integrating buffering services such as Google PubSub
- Analyzed and processed recorded data and contributed to publication in MDPI Sensors journal

LEADERSHIP

- Lead Research Student, IoT Resilience, Network Enhanced Technologies Lab
- President Emeritus and Officer, Brigham Young University Linux Club
- Oversee welfare and administrative operations in a local congregation
- Staff at IMMERSE Chip Camp and UTOS OpenWest Conference

WORK HISTORY

- **PhD Student**, IoT Systems Resilience Research, Brigham Young University, **2022 – Present**
- **Instructor**, ECEN 224 Lab and Recitation, Brigham Young University, **2023**
- **Research Assistant**, Air quality firmware development, Brigham Young University, **2020 - 2022**
- **Teaching Assistant,** Fundamentals of Digital Systems, Brigham Young University, **2019 - 2020**
- **Research Assistant,** Heterogeneous Debugger GUI, Brigham Young University, **2019**
- **Lab Intern,** Virtualization Lab, SUSE Linux (Provo), **2018 - 2019**