

# CALVIN KRANIG

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1841 Schlimgen Ave  
Madison, WI 53704

## EDUCATION

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**BS** Iowa State University, Computer Science December 2019  
Graduated Summa Cum Laude with Honors

**PHD** University of Wisconsin Madison, Computer Science In Progress

## HONORS AND AWARDS

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**Distinguished Military Graduate, U.S. Army** 2019  
Awarded to top 20% of ROTC Cadets on the National Order of Merit List

**Arthur A. Collins Scholarship, Iowa State University** 2018  
Awarded to students with 3.0+ GPA who have taken leadership positions on campus

**Joseph Cribbins Scholarship, Civilian Sponsored Scholarship Program** 2018  
Awarded to top 2 ROTC Cadets in the nation with STEM majors

**MS2 Cadet of the Year, Iowa State University** 2017  
Awarded to the top 2<sup>nd</sup> year Cadet in the Iowa State ROTC program

## RESEARCH EXPERIENCE

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**University of Wisconsin Madison** August 2022 to May 2023  
**Research Assistant**

- Conducted software vulnerability assessment of 3rd party IDM/Authentication Software
- Student Researcher on NSF funded research study on DNS

## TEACHING EXPERIENCE

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**Iowa State University** August 2019 to December 2019  
**Teaching Assistant, Computer Science Orientation**

- Gave large lectures as needed, and led weekly small group breakouts
- 200+ undergraduate students per lecture and 30 students per small group

**Iowa State University** August 2016 to May 2018  
**President, IgniteCS**

- Developed project based coursework for teaching high school students Python
- Led weekly classes containing 5-10 students

## PRESENTATIONS

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**Kranig, C. (2019). Python for High Schoolers.** Project Presentation given at the bi-annual Iowa State Honors Project Presentation Ceremony

## PROFESSIONAL EXPERIENCE

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### **General Dynamics Mission Systems, Bloomington, MN**

Software Engineer, January 2020 – Present

- Developed a mission critical C++ module for running inference on TensorRT optimized DNN models
- Enabled the training of a specialized contract specified object detection DNN by developing image generation scripts utilizing Blender
- Tested end product for optimal power usage and object detection performance
- Designed, developed, and programmed a virtual environment for testing drone swarm behaviors
- Developed and tested a Deep Q Learning model for handling drone swarms in a combat environment
- Created back-end interface for utilizing proprietary Air Force software for modeling and simulation

### **Minnesota Army National Guard, Rosemount, MN**

Cyber Operations Officer, June 2015 – Present

- Led and organized multiple fundraising events consisting of 100+ cadets
- Lead cyber protection team mission element consisting of 6-10 analysts
- Trained and conducted defensive cyber operations including network monitoring and malware discovery
- Trained and performed offensive cyber operations including initial exploit and privilege escalation

### **Iowa State University, Ames, IA**

IT Specialist, November 2016 – December 2019

- Updated and maintained websites for the Political Science and History departments
- Maintained and upgraded local hardware and network infrastructure

### **National Reconnaissance Office, Chantilly, VA**

Software Development Intern, Summer 2018, 2019

- Designed software architecture and logical data model for a new Mission Assurance software tool
- Applied knowledge of model based systems engineering to create a workflow model and SLA
- Advised the head of the modeling department on model development practices and procedures

## **LEADERSHIP AND VOLUNTEER WORK**

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**RoboCup**, University of Wisconsin Madison  
Team Member, January 2023 – Present

**First Lego League**, Minnesota STEM Partnership  
Team Captain, November 2020 – February 2021

**Iowa State Honors Student Board**, Iowa State University  
Web Master, August 2018 – May 2019  
Upper Honors Activity Planning Board Member, January 2017 - May 2018

## **COMPUTER SKILLS AND CERTIFICATIONS**

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**Programming Languages:** Java, Python, C, C++, MATLAB

**Libraries & Applications:** Security Onion, Pytorch, TensorFlow, TensorRT, GRR,  
Wireshark, Blender

**Certifications:** CISSP, CCNA

**Clearance:** TS/SCI