Christopher Jellen

SECURITY SOFTWARE ENGINEERING WITH WRAITHWATCH

Seattle, WA

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Work Experience

Wraithwatch *Seattle, WA*

Machine Learning Engineering | Cloud Infrastructure *2024 - Present*

- Wraithwatch is a cybersecurity startup building the next generation of AI/ML-informed cyber defense. As an early member of the team, I've had the opportunity to build the product, own infrastructure management, and develop customer relationships.
- Lead the design, development, and implementation of resilient infrastructure, decreasing product downtime by over 8 times.
- Developed core backend services, allowing the product to scale from hundreds to millions of entities under analysis.

Microsoft *Redmond, WA*

Software Engineering *2022 - 2024*

- As a member of the developer platform team, I scoped and delivered shared release and observability tooling for the Microsoft Defender ecosystem.
- Decreased time-to-release across dedicated cloud environments by a factor of four through automated configuration and service validation.
- Led development and evaluation of forecasting models for cloud storage and compute demand to aid in long-term strategic planning.

The MITRE Corporation (CALDERA) *Seattle, WA*

Engineering Manager *2020 - 2022*

- Product lead for CALDERA's cyber ontological mapping capability, interfaced with a range of DoD sponsors to ensure wide interoperability and wider use of CALDERA as a cyber analytic tool.
- Led a team of four (3 engineers, 1 data scientist) to develop novel offensive cyber planning capabilities and data management solutions, resulting in a software patent and new opportunities for Government partnership.
- Supported The Veteran's Benefits Administration, the United States Marine Corps, and Intelligence Community as an engineer and consultant, delivering deep technical analyses in support of intelligence automation.

Core Technical Skills

Python, Go, Kubernetes, Docker, AWS, Azure, PyTorch, Jax

Projects

Air Quality Forecast

Operational 12-hour air quality forecasting for the United States. Check out live forecasts updated each hour at air-quality-forecast.fly.dev

Discover Open Source

Traverse GitHub as a social graph. Built in Go and Svelte. Try it out at discover-open-source.fly.dev.

National Data Buoy Center API *github.com/cdjellen/ndbc-api*

The Python API for NDBC data services, served through PyPi and conda force.

- A Python API for querying oceanographic and atmospheric data from the National Data Buoy Center.
- The package includes full test coverage, powered by PyTest, as well as extensive usage documentation.

National Association of Corrosion Engineers Design Competition *Houston, TX*

A semi-autonomous robot for computer-vision enabled corrosion detection and mapping. *Aug 2018 - Apr 2019*

- Led a team of five students and engineers to plan, design, integrate, build, and test a semi-autonomous corrosion detection robot.
- Presented update briefings to the Office of Naval Research (ONR), communicating the project road-map, finances, and technical specifications.
- Placed 1st in the competition through the development and application of a CNN-based corrosion detection model.

Education

United States Naval Academy *Annapolis, MD*

BS Honors Applied Mathematics | BS Mechanical Engineering | **GPA: 4.00** *Jun 2016 - May 2020*

- Graduated ranked 1st in my class by Academic Order of Merit.
- Trident Scholar: A Machine-Learning Model for Prediction of Optical Turbulence in Near-Maritime Environments

Publications

Machine learning informed predictor importance measures in maritime optical turbulence. *Applied Optics 59, 6379-6389 (2020)*

Leveraged ensemble tree-based ML methods to gain insights into the predictive power of meteorological data on local optical turbulence, as measured by C_n^2.

Editors Choice

Hybrid Optical Turbulence Models. *Applied Optics 62 (18), 4880-4890*

Developed hybrid machine learning models for predicting local C_n^2 using real-time climactic data, demonstrating an improvement over prior literature models for application in the near-maritime environment..