Christopher Jellen

Software Engineering | Microsoft M365 Cloud

Seattle, WA

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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

Work Experience

Microsoft — *Redmond, WA*

Software Engineering | Big Data — *2022 - Present*

- As a member of the M365 Cloud division, I develop ETL and analysis solutions for telemetry data to improve observably, reliability, and demand forecasting.
- Built and deployed containerized APIs to accelerate and empower data scientists and reliability engineers.
- Developed forecasting models for service demand to inform strategic planning and resource allocation.
- **Core Technical Skills:** Go, Docker, Python, PowerShell, C

The MITRE Corporation — *Seattle, WA*

Software Engineering | Machine Learning Engineering — *2020 - 2022*

- Supported The Veteran's Benefits Administration, the United States Marine Corps, and Intelligence Community as an engineer and leader, building a strong understanding of customer needs, clear communication, and strategic planning.
- Developed AI/ML-informed analytic prototypes for quality assurance at scale.
- Built and evaluated custom CNN models for over-the-air radio signal processing and classification.
- **Core Technical Skills:** Python, PyTorch, R, Postgres, mongoDB, git, CentOS

CALDERA: Automated Adversary Emulation — *Remote*

Product Lead | 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.
- Built closed-source AI-ML enabled cyber posture analysis capabilities deployed on AWS.
- Developed a strong understanding of agile project management and continuous delivery for a range of end-users and sponsors.
- **Core Technical Skills:** Python, JavaScript, Docker, AWS, Ansible, bash scripting

Projects

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

An open-source Python API for NDBC, served on PyPi.

- A Python API for querying oceanographic and atmospheric data from the National Data Buoy Center. The NDBC API makes climate research data more accessible by parsing and filtering the whitespace-delimited measurements distributed by the NDBC data service.
- 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.

Publications

Machine learning informed predictor importance measures in maritime optical turbulence. — *Appl. Opt. 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.

Editor's Choice

Machine-learning informed macro-meteorological models for the near-maritime environment. — *Appl. Opt. 60, 2938-2951 (2021)*

Developed new 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.