Christopher Jellen

cdjellen.com

Objective

My goal is to leverage my software development skills, unique educational background, and data-focused engineering experience to enhance and build impactful systems by developing accessible, collaborative, and effective solutions to complex technical challenges.

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Active Clearance

Actively using:

> Python
> Go
> Docker
> JavaScript
> Apline.JS
> PyTorch
> SQL

Experience with:

> Ansible
> Elasticsearch
> Redis
> Java
> R
> TensorFlow
> MATLAB

Awards and Affiliations:

> Tau Beta Pi
> Pi Tau Sigma
> ASME
> Trident Scholar
> Congressional Award Gold Medal
> Eagle Scout

Education

United States Naval Academy, Annapolis, MD — *2016-2020*
Bachelor of Science, **Honors Applied Mathematics** — **GPA: 4.0**
Bachelor of Science, **Mechanical Engineering** — **GPA: 4.0**

Skills and Experience

Computer Scientist – The MITRE Corporation — *2020-Present*

Software Development

- Building CALDERA, an open-source system for automated adversary emulation and network security evaluation. Primarily developed as an asynchronous HTTP server and REST API with UI elements developed under the Apline.JS framework.
- Leading the technical development of tools and dashboards for delivery to Federal data scientists and analysts, realized as a Flask application. The project seeks to:
  - Understanding domain-specific data, and the needs of end users;
  - Build a performant backend which supports rapid query, processing, and analysis of large datasets through a REST API and relational database;
  - Use natural language processing to expand and deepen data accessibility, and to
  - Design an effective, intuitive user experience, enabling actionable recommendations.

Machine Learning

- Developed and containerized pipelines and convolutional, recurrent, and transformer-based models in PyTorch and TensorFlow for translation and time-series prediction tasks.
- Trained and evaluated convolution-based computer vision models with a focus on depth perception for autonomous vehicles.

Data Analytics and Applied Statistics

- Developed statistical simulation frameworks for hypothesis testing.
- Programmatically evaluated distribution trends over time using SQL and Python.

Research Projects and Publications

Optics Research and Robotics Design

- Worked with a team of three Professors and one naval officer to design, plan, and execute a multi-year research effort at the intersection of optical theory, machine learning, and statistics. The over-arching research objective involves using statistical and machine learning techniques to predict scintillation of a laser on a target.
- Led two ONR funded undergraduate research and design efforts, the first focused on computer vision for robotics and the second on regression tree models for scintillation prediction.

Publications in Academic Journals

- Published three journal articles as the primary author, with one selected as Editor's Choice in *Applied Optics*.
- Presented research work at four academic conferences, including APS Division of Fluid Dynamics and the Naval Applications of Machine Learning conference.

Leadership Background

United States Naval Academy 1st Regimental Midshipman Operations Officer

- Led a team of 36 Operations Officers in planning and executing a wide range of events for a regiment of over 2000 Midshipmen.
- Responsible for a four-week training evolution for a cohort of over 80 Midshipmen. Led the Midshipmen leadership team and interfaced with officers from the United States Navy and Marine Corps to plan and execute day-to-day operations.