# 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 on target of a laser [should this read 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.