

COLE B. STURZA

3040 ½ Pennsylvania Avenue, Boulder, CO 80303

☎ 267-693-6804

✉ colesturza@gmail.com

🌐 [linkedin.com/in/cole-sturza](https://www.linkedin.com/in/cole-sturza)

🐙 github.com/colesturza

Education

University of Colorado Boulder

Master of Science in Computer Science (Intelligent Systems Sub-Plan)

Aug. 2021 – May 2022

Boulder, CO

University of Colorado Boulder

Bachelor of Science in Computer Science

Aug. 2017 – May 2021

Boulder, CO

Minor in Applied Mathematics (Scientific Computation Emphasis)

Honors: summa cum laude

Experience

Lockheed Martin

Software Engineer Intern

May 2021 – Current

Littleton, CO

- Working on a communications simulation team developing microservices primarily with Java.
- Working with analysts to develop various API endpoints requiring numerical methods.

Lockheed Martin

Software Engineer Intern

May 2020 – December 2020

Littleton, CO

- Developed a tool to parse C/C++ header files in a core Flight System (cFS) application for information on CCSDS packets. The tool generates an XTCE file that a ground station could use to know how to communicate with the cFS application. The primary language utilized was Python. Utilized various objected-oriented patterns and design practices in the creation of the tool.
- Successfully researched various possibilities for communication between a cFS application and Lockheed Martin's SmartSat architecture. Independently studied how the SmartSat architecture works and as needed, consulted with the team that created the architecture. Wrote code in Python and C++.

Crossbeam

Software Development Intern

June 2018 – August 2018

Philadelphia, PA

- Created a working B2B Partnerships directory website—[Partnerbase](#).
- Collaborated with a group of three interns to develop Partnerbase.
- Designed and developed a database to store information about companies and their partnerships using Flask, PostgreSQL, and SQLAlchemy.
- Developed web API and test cases on the backend.
- Built out pages and components using Vue.js and bootstrap on the frontend.

University of Colorado Boulder

Course Assistant

Various Semesters

Boulder, CO

- Courses: Software Development Tools and Methods, Data Structures, and Linear Algebra w/ Computer Applications.
- Held office hours/review sessions for students who had questions about the material taught in class.

Projects

Numerical Analysis 2 Final Project | *MATLAB, L^AT_EX*

April 2021

- Researched two techniques for solving 2D elliptical Partial Differential Equations.
- The first technique was a Fast Poisson Solver that used the Fast Fourier Transform to efficiently solve a Finite Difference Scheme.
- The second technique was Integral Equations.

Probabilistic Models for ML Final Project | *Python, Jupyter Notebook, L^AT_EX*

April 2021

- Created a Poisson Regression model to predict the MPG of cars.

Senior Capstone | *Python, Django, MongoDB, React, Pandas*

Aug. 2020 - April 2021

- Created a data ingestion tool that categorized incoming columns using various heuristics.
- The tool also removed various forms of personal identifiable information from incoming data files.

Machine Learning Final Project | *Python, Jupyter Notebook, Pandas, librosa, TensorFlow, scikit-learn*

April 2020

- Attempted to use supervised learning models to classify a given audio file into 10 different music genres.
- Researched and recreated various neural nets from a number of papers.

Relevant Coursework

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|-------------------------------------|---------------------------------|--------------------------------------|
| • Design & Analysis of Algorithms | • Neural Nets and Deep Learning | • Numerical Analysis 1 & 2 |
| • Object-Oriented Analysis & Design | • Theory of Machine Learning | • Artificial Intelligence |
| • Convex Optimization | • Probabilistic Models for ML | • Software Engineering Project 1 & 2 |
| • Linear Programming | • Natural Language Processing | • Design & Analysis of Data Systems |
| • Machine Learning | • Network Analysis and Modeling | • DevOps in the Cloud |

Technical Skills

Languages: Python, Java, MATLAB, C/C++, JavaScript, SQL, MongoDB, L^AT_EX

Technologies/Frameworks/Tools: Linux, Git, Slack, Vagrant, Ansible, Docker, Django/Flask, Vue.js, JetBrains IDEs, Netbeans, Jupyter Notebook, TensorFlow, scikit-learn, numpy, pandas

Other: Microservices, Agile Methodologies, Scrum, Full-Stack Software Development