

# Cole B. Sturza

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I'm seeking to join a dynamic and fast-paced environment where I can make a meaningful impact as a backend software engineer, continue to expand my expertise in software engineering, and further develop my skills in machine learning.

## SKILLS

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**Languages:** Java, Go, Python, Kotlin, SQL, C/C++, MATLAB, JavaScript, HTML, CSS

**Technologies/Frameworks/Tools:** Quarkus, Spring Boot, Jakarta EE, Java EE, JDBC, JPA, Git, Linux, Docker, Helm, Kubernetes, Istio, REST API, GraphQL, PostgreSQL, Redis, Amazon S3, FastAPI, Django, Flask, Jupyter Notebook, TensorFlow, scikit-learn, numpy, pandas, Vagrant, Ansible, L<sup>A</sup>T<sub>E</sub>X, OAuth 2.0, OpenID Connect (OIDC), Keycloak, JSON Web Tokens

**Other:** Microservices, Agile, Scrum, Full-Stack Software Development, Problem Solving, Debugging, Automation, Distributed Systems

## EXPERIENCE

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### Software Engineer

June 2022 – Present

Lockheed Martin (Space)

(Remote) Denver, CO

- Collaborated with a cross-functional team of developers, analysts, and physicists to conceptualize and develop a robust communications operations analysis SaaS application.
- Designed and implemented several microservices using Java (Quarkus) for the backend, PostgreSQL for databases, Redis for caching and event-based messaging, and Amazon S3 for object storage.
- Enhanced the security and user experience of our microservice architecture by integrating OpenID Connect (OIDC) authentication using Keycloak and the company's existing Single Sign-On (SSO) infrastructure.
- Streamlined multiple analysis workflows, significantly reducing runtime and improving efficiency.
- Managed multiple Kubernetes deployments at scale, including creating Docker containers, Helm charts, automated application deployment with ArgoCD, and configuring the Istio service mesh.
- Trained and deployed machine learning models with scikit-learn and TensorFlow (Python) to forecast the impact of weather conditions on communication reliability between assets.
- Contributed to continuous integration and continuous deployment (CI/CD) pipelines, automating testing and deployment processes with GitLab CI.
- Collaborated closely with stakeholders to gather requirements, identify challenges, and propose innovative solutions.
- Participated in code reviews and provided constructive feedback to team members.
- Assisted in numerous analysis studies, performing analyses for several satellite constellations, utilizing microservice architecture and developing ad hoc scripts to enhance and/or expand on software results.

### Software Engineer Intern

May 2021 – June 2022

Lockheed Martin (Space)

(Remote) Boulder, CO

- Translated MATLAB object tracking analysis software into a Java microservice, incorporating a REST endpoint, business logic, and comprehensive testing.
- Implemented a Python CLI tool to convert XML data model definitions into C++ classes, including JSON serialization/deserialization.
- Created an Advanced Framework for Simulation, Integration, and Modeling (AFSIM) plugin in C++, leveraging analysis from microservices to enhance simulation capabilities within AFSIM.

## EDUCATION

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### Master of Science in Computer Science

University of Colorado Boulder

Intelligent Systems Sub-Plan (AI/ML and Optimization)

May 2022

Boulder, CO

### Bachelor of Science in Computer Science

University of Colorado Boulder

Minor in Applied Mathematics (Scientific Computation Emphasis)

Summa Cum Laude

May 2021

Boulder, CO