# ALEXANDER CONGER
Software & Mechatronics Engineer

- 🌐 alexconger.dev
- ✉️ aconger00@gmail.com
- 📞 253 334 2613
- github.com/rocmalone
- 📍 Kent, WA
- 🔗 /in/alexconger

## SUMMARY

Software and Mechatronics Engineer specialized in machine learning in PyTorch and integrating software with physical systems. Seeking roles which leverage machine learning to build the next-generation of human-computer interactions. Strong computer science fundamentals including high-quality code principles and design practices. Deeply-rooted growth mindset and commitment to collaboration.

## EXPERTISE

**Languages:** Python, Java, C#, C++, JavaScript, SQL, Bash Scripting

**Technology:** OpenCV, PyTorch, MySQL, AWS, Docker, Linux, Git, Agile, CI/CD

## EDUCATION

| 9/2022 - 3/2024 | **Western Governor's University** | Salt Lake City, UT |
|---|---|---|
| | B.S. Computer Science | |

| 9/2019 - 6/2022 | **University of Washington** | Seattle, WA |
|---|---|---|
| | B.S. Mechanical Engineering | |

## EXPERIENCE

**7/2022 - 6/2023 — Systems Stress Analysis Engineer — The Boeing Company**
- Analyzed aircraft systems using physics and material science.
- Designed engineering tests and analysis that saved $19,000,000 in warranty repairs.
- Developed a Python and Selenium WebDriver-based automation tool for an internal database; enabled 7 users to save 7 hours weekly, enhancing productivity and reducing manual errors.
- Expertly communicated technical details in presentations and reports to non-technical stakeholders including FAA and Boeing executives.
- On-call in fast-paced team using Agile practices.

**9/2021 - 7/2022 — Startup Co-Founder, Technical Lead — Novel Electric Generator (University of Washington)**
- Lead team of 5 in college-funded startup building a portable electric generator using novel technology.
- Implemented machine learning (linear regression) in PyTorch to increase fuel efficiency by 20%.
- Wrote firmware in C++ using memory-safe techniques and tests to ensure reliability and avoid explosion.
- Analyzed thermodynamic and fluid effects key to operation.
- Pitched concept to university seed fund securing student employees and $4,500 across two rounds.

**3/2021 - 9/2021 — Research Assistant — Composite Materials Lab (University of Washington)**
- Devised new analysis methods for cutting-edge composite materials with complex microstructures.
- Created OpenCV-based computer-vision tooling in Python to measure microstructure regularity of new composite materials based on electron microscopy.
- Adapted existing techniques and tooling to facilitate manufacture of novel composite materials.

## PROJECTS

**Video Game (C#, GDScript)**

**Rat House Rumble** — rocmalone.itch.io/rat-house-rumble — Source on GitHub
- Developed a multiplayer FPS game in a highly realistic 3D-scanned environment.
- Applied design patterns and object-oriented design principles such as inheritance and polymorphism.
- Employed debugging tools and conducted performance analysis to reduce frame response times.

**Full-stack Web (Angular, Spring, MySQL)**

**Travel World eCommerce Website** — https://alexconger.dev/travelworld — Source on GitHub
- Developed full-stack eCommerce storefront using Angular (TypeScript) front end.
- Built server side RESTful API to update and retrieve data in Java using Spring Boot and MySQL.
- Implemented the Model-View-Controller design pattern to enhance scalability and modularity.
- Adhered to industry-standard practices to secure and deploy as cloud services connected via REST API.

**Full-stack Web (JavaScript, React, Node.js)**

**deathroll.online** — deathroll.online — Source on GitHub
- Online chance game leveraging large-language model API. Deployed as containerized service.
- Secured server-side REST API with environment variables, throughput limits, and request validation.
- Implemented DNS and SSL on Linux VPS to ensure high-availability and security.

**Web (React, Linux Admin)**

**alexconger.dev** — https://alexconger.dev — Source on GitHub
- Portfolio built in React and deployed on Linux. Configured to securely host projects as container-services.