Michael Fadem

Albuquerque, NM | michaelfadem@outlook.com | 505-310-5299 | https://www.linkedin.com/in/mfadem/

EXPERIENCE

Sandia National Laboratories — Albuquerque, NM

- *R&D Computer Scientist* — *Jan 2022 – Present*
  Software Systems Engineer — *Oct 2019 – Jan 2022*
  - **Tracktable**: Engineering lead and maintainer for the Sandia open source project and 2020 R&D 100 award winner Tracktable, https://tracktable.sandia.gov/, providing trajectory analytics and rendering capabilities through a Python library which leverages a C++ backend for performance
    - **Responsibilities**: Feature design/implementation/review/maintenance, bug fixes, release planning, backlog grooming, documentation, package management and CI/CD management
  - **Modeling and Simulation**: Primary software integration engineer for a critical national level modeling and simulation program, integrating four large scale Sandia software systems together and successfully producing simulation results in less than 3 months
  - **Satellite Ground System Enhancement**: Developed C++ software and testing suites along with super resolution image processing algorithms leveraging OpenCV in an AWS environment for a major satellite ground system enhancement program
  - **Next Generation Ground System**: Developed and deployed rapidly prototyped software for next generation ground systems that was concurrently developed by internal and external teams leveraging state-of-the-art algorithms and Python-based GPU processing
  - **Data Visualization**: Developer for a generalized data visualization tool utilizing NASA's OpenMCT framework and web technologies such as Javascript, Webpack and Node.js
  - **Data Analytics**: Performed large scale data analysis and visualization to reinforce and verify algorithm correctness while satisfying customer requirements and requests
  - **Developer Workflow**: Developed internal bots and scripts to assist developer workflows and debug environments including a Git blame TODO bot which finds TODOs within a codebase and alerts the original author automatically in Mattermost
  - **Mentoring**: Mentored multiple new software engineers and computer scientists on project technical details and Sandia culture to reduce project and Sandia spin up time

- **Honeywell Aerospace** — Albuquerque, NM
  Software Engineer — *Jun 2017 – Oct 2019*
  - **V-22 Main Flight Display**: Developed and deployed frontend and backend embedded software, written in C, for the V-22 Osprey's main flight display and keyboards
  - **Software Performance**: Redesigned and optimized critical flight display graphics interface improving indexing runtime from O(n) to O(1) utilizing a lookup table
  - **Software Lab Upgrade**: Software focal for the V-22 Osprey software integration lab upgrade successfully adding fully remote software testing, power control, and hardware loading capabilities
  - **Automation**: Automated the software build process for the V-22 Osprey main flight display utilizing virtual machines and Python scripts reducing overall build time and complexity by over 50%
  - **Customer Interaction**: Provided technical analysis and recommendations to external customer technical requests and software issues

EDUCATION

Georgia Institute of Technology — Atlanta, GA
Master of Science in Computer Science; Specialization: Interactive Intelligence — *Aug. 2021 – Dec. 2024*

New Mexico State University — Las Cruces, NM
Bachelor of Science in Computer Science — *Aug. 2013 – May. 2017*

TECHNOLOGIES & SKILLS

- **Programming Languages**: Python (5+ years exp.), C/C++ (3.5+ years exp.), Various Other Languages (<6 months exp.): Java, C#, JavaScript, etc.

- **Domains**: Backend, Dev Ops, Open Source Software, Geospatial/Trajectory Analytics, Graphics, Image Processing, Object Detection, Remote Sensing

- **Technologies**: APIs, AWS, Azure Dev Ops, Boost, CMake, CTest, Docker, Git, Github, Gitlab, Gitlab CI/CD, Jenkins, Kubernetes, Linux, MacOS, MongoDB(<6 months exp), Numpy, OpenCV, Pytest, Sphinx, Windows

- **Software Development**: Agile, Code Reviews, Continuous Integration/Continuous Development, Documentation, Full Software Development Life Cycle, Integration Testing, Kanban, SAFe, Scrum, Unit Testing,

- **Software Packaging**: Anaconda, PyPi