Michael Fadem

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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/, which provides trajectory analytics and rendering capabilities
  - **Modeling and Simulation**: Primary software integration engineer for a critical national modeling and simulation program, integrating four large scale Sandia software systems and successfully producing results in less than 3 months
  - **Satellite Ground System Enhancement**: Developed software, testing suites and super resolution image processing algorithms 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 GPU processing
  - **Data Visualization**: Developer for a generalized data visualization tool utilizing NASA's OpenMCT framework and web technologies
  - **Data Analytics**: Performed large scale data analysis 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 determines the original code author and pings them automatically in a Mattermost channel
  - **Mentoring**: Onboarded and 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 utilzing 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 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+ years exp.)
- **Domains**: Open Source Software, Geospatial/Trajectory Analytics, Image Processing, Remote Sensing, Object Detection, Graphics
- **Technologies**: AWS, Azure Dev Ops, Boost, CMake, CTest, Docker, Folium, Git, Github, Gitlab, Gitlab CI/CD, Jenkins, Kubernetes, Numpy, OpenCV, Pytest, APIs, Sphinx
- **Software Development**: Agile, Continuous Integration/Continuous Development, Full Software Development Life Cycle, Kanban, SAFe, Scrum, Technical Documentation, Waterfall
- **Software Packaging**: Anaconda, PyPi

Security Clearance Information Available Upon Request