

# Michael Fadem

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## EXPERIENCE

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### 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 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 issues

## EDUCATION

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- **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

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- **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:** APIs, AWS, Azure Dev Ops, Boost, CMake, CTest, Docker, Folium, Git, Github, Gitlab, Gitlab CI/CD, Jenkins, Kubernetes, Numpy, OpenCV, Pytest, Sphinx
- **Software Development:** Agile, Continuous Integration/Continuous Development, Full Software Development Life Cycle, Kanban, SAFe, Scrum, Technical Documentation, Waterfall
- **Software Packaging:** Anaconda, PyPi