

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
 - Data Visualization:** Developer for a generalized data visualization tool utilizing NASA's OpenMCT framework and web technologies
 - 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 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 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 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, RESTful APIs, Sphinx
- Software Development:** Agile, Continuous Integration/Continuous Development, Full Software Development Life Cycle, Kanban, SAFe, Scrum, Technical Documentation, Waterfall
- Software Packaging:** Anaconda, PyPi