

Michael Fadem

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EXPERIENCE

- BlackSky** Seattle, WA - Remote
Senior Software Engineer Aug 2022 - Present
 - Analytics Integration:** Senior Software Engineer on the Analytics Integration team responsible for developing and supporting diverse Python-based microservices that empower BlackSky's AI analytic capabilities, supporting multi-million dollar commercial and government contracts
 - Software Architecture:** Responsible for architecting and designing multiple microservices that are resulting in enhanced AI analytic capabilities, expanded analytic offerings, and improved user experiences
 - AI/ML Support:** Closely collaborating with BlackSky's AI/ML team to seamlessly integrate cutting-edge AI-based imagery analytics, enhancing object detection capabilities, and contributing to the AI analytic market expansion
 - Platform Support:** Assisting other Platform teams to deliver bug fixes, database solutions and code enhancements to Java-based microservices to refine the core capabilities of the BlackSky Spectra platform
- Sandia National Laboratories** Albuquerque, NM - Hybrid
R&D Computer Scientist Jan 2022 - Aug 2022
Software Systems Engineer Oct 2019 - Jan 2022
 - Tracktable:** Engineering lead and maintainer for the Sandia open-source project Tracktable, a 2020 R&D 100 award winner, which enables trajectory analytics and rendering through a Python library with a high-performance C++ backend
 - Responsibilities:** Feature design/implementation/review/maintenance, bug fixes, release planning, backlog grooming, documentation, package management and CI/CD management
 - Modeling and Simulation:** Lead software engineer for a critical high-visibility modeling and simulation program, integrating four large-scale Sandia software systems in less than 3 months, yielding successful simulation results
 - Satellite Ground System Enhancement:** Developed robust C++ software, comprehensive testing suites and advanced image processing algorithms in an efficient and scalable AWS Kubernetes deployment for a major satellite ground system enhancement program
 - Next Generation Ground System:** Engineered and deployed rapidly prototyped software for a next generation ground system leveraging state-of-the-art algorithms and Python-based GPU processing
 - Data Visualization:** Developer for Generic Data Display, a generic data visualization tool utilizing NASA's OpenMCT framework and web technologies such as Javascript, Webpack and Node.js
 - Subgraph Isomorphism:** Converted the Java-based implementation of the [Index-Based Subgraph Matching Algorithm with General Symmetries](#) (ISMAGS) algorithm to a high-performance Python-based implementation
- Honeywell Aerospace** Albuquerque, NM - Onsite
Software Engineer Jun 2017 - Oct 2019
 - V-22 Main Flight Display:** Developed and deployed C-based frontend and backend embedded software for the V-22 Osprey's main flight display and keyboards
 - Software Performance:** Redesigned and optimized critical flight display graphics interface, achieving an indexing runtime improvement from $O(n)$ to $O(1)$ by implementing a lookup table data structure
 - 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 using virtual machines and Python scripts, resulting in over a 50% reduction in build time and complexity

EDUCATION

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

TECHNOLOGIES & SKILLS

- Programming Languages:** Python (6+ years exp.), C/C++ (3.5+ years exp.), Java (1+ years exp.)
- Domains:** AI/ML, Backend Development, Cloud Computing, DevOps, Geospatial Intelligence, Geospatial/Trajectory Analytics, Image Processing, Object Detection, Remote Sensing, Software (Commercial, Geospatial, Open Source, Platform, Research & Development)
- Technologies:** AWS (Batch, Cloudformation, ECS (Elastic Container Service), EC2 (Elastic Compute Cloud), Lambda, Step Functions), Azure DevOps, Boost, CMake, CTest, Docker, GDAL, Git, Github, GitKraken, Gitlab, Gitlab CI/CD, Jenkins, Jira, Kubernetes, Numpy, OpenCV, PostgreSQL, Pylint, Pytest, Ruff, Sphinx
- Software Development:** Agile, APIs, CI/CD, Code Reviews, Customer Facing Documentation, End-to-End Testing, Full SDLC, Kanban, Microservices, Performance Optimization, Requirement Decomposition, Scrum