Michael Fadem

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Experience

- **BlackSky** — Seattle, WA - Remote
  Senior Software Engineer — *Aug 2022 - Present*
  - **Platform Analytics**: Senior Software Engineer on the Platform Analytics team, developing and supporting Python-based microservices enhancing BlackSky's AI analytics for multi-million dollar commercial and government contracts
  - **AI/ML Models**: Closely partner with BlackSky's AI/ML team to seamlessly productionize cutting-edge AI-based imagery derived analytics to enhance BlackSky's AI analytic capabilities and expand analytic offerings
  - **Python SDK**: Architected and engineered a Python SDK to facilitate rapid application development while minimizing redundant boilerplate code across all Python teams at BlackSky
  - **DOE Energy I-Corps**: Mentored a team of researchers from Sandia National Labs through the DOE Energy I-Corps program, providing industry expertise and strategic guidance on the commercialization of lab-developed technologies
  - **Cross-Team Development**: Assist 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 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
  - **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 (7+ 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), EKS (Elastic Kubernetes Service), Lambda, Step Functions), Azure DevOps, Boost, CMake, Confluence, CTest, Docker, GDAL, Git, Github, Github Actions, GitKraken, Gitlab, Gitlab CI/CD, Jira, Kubernetes, Numpy, OpenCV, PostgreSQL, Pytest, Ruff,
- **Software Development**: Agile, APIs, CI/CD, Code Reviews, Customer Facing Documentation, End-to-End Testing, Full SDLC, Kanban, Microservices, Monoliths, Performance Optimization, Requirement Decomposition, Scrum, Services