

JOSEPH L. SHEEDY

Staff Scientific Software & Data Engineer

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|  jsheedy |  josephsheedy

SUMMARY

Staff software engineer and team lead with M.S. in Atmospheric Science, building mission-critical weather systems for autonomous robotics and 20+ years in high-performance, large-scale engineering

EXPERIENCE

2025 Staff Scientific Software Engineer

 Zipline ↗ zipline.com | South San Francisco, CA

- Conceptualized, architected, built, deployed, and maintained an operational weather nowcast system automating go/no-go decisions for thousands of daily commercial autonomous drone flights around the globe
- Weather safety targets exceeded in commercial operations
- Engineered Cloud-native services to generate and communicate nowcast and observational data
- Joined Data Platform team to design and implement the company's log data lake and telemetry ETL+API services, unlocking fleet wide log analysis
- Procured off the shelf ground weather stations, built ETL and API services, and integrated into the infrastructure
- Installed and integrated end-to-end a remote weather satellite downlink station
- Mentored engineers and drove projects end-to-end from concept through long-term maintenance

2022 Senior Weather Forecast Engineer & Platform Engineer

 Saildrone ↗ saildrone.com | Alameda, CA

- Led Weather and Data Pipeline teams
- Architected and developed first company data lake, unlocking fleet wide analytics
- Built one-click end-to-end solution for offloading payload and telemetry data from drones over wired network or hand carried intelligent portable storage devices
- Re-engineered global weather forecast system from first principles resulting in higher quality forecasts for fleet operations and commercial applications teams while achieving orders-of-magnitude efficiency and cost improvements
- Designed and deployed cloud-native Python services using chunked gridded storage (Zarr, NetCDF) processing >100 GB of forecast data daily with low latency
- Owned Kubernetes deployments and observability infrastructure for production forecast platform, enabling path planning of a global autonomous fleet
- Mentored engineers and drove projects end-to-end from concept through long-term maintenance

2018 Senior Software Developer

 Rooster Park | Seattle, WA

- Founding full stack engineer for a political domain analytics engine and CMS
- Stood up React frontend, Python backend, AWS infrastructure, and CI/CD for hyper-growth phase

2017 Senior Software Developer

 Rooster Park / Vulcan Inc. ↗ vulcan.com | Seattle, WA

- Converted from Rooster Park contract to FTE after successful full rewrite of the Sea Around Us fisheries model and analysis tools
- Led migration of legacy Visual Basic / ASP.NET ecological modeling suite to high-performance Postgres/Python/Angular resulting in large usability and performance gains
- Open-sourced core components including D3-based mapping framework to meet geographic projection requirements
- Designed and shipped real-time RabbitMQ event system for radio-collar wildlife tracking
- Developed high-precision AR prototypes in Unity3D + Python/OpenCV/numpy for beacon-based localization
- Developed AR vision system for sporting events (US Patent 10,325,410: Augmented Reality For Enhancing Sporting Events)

EDUCATION

M.S. Atmospheric Science

- University of Alaska Fairbanks (2000)

B.S. Atmospheric Science

- University of Washington (1998)

B.S. Physics

- University of Washington (1998)

Neural Networks and Deep Learning (Coursera (deeplearning.ai))

SKILLS

Languages & Tools

Python, Typescript, UNIX shell, Ruby, Go, C/C++, C#, Rust, Java, Kubernetes, AWS, FastAPI, React, deck.gl, D3.js, GLSL, Unity3D

Data & Science

Numerical weather prediction, Parquet, Zarr, NetCDF, xarray, Dask, OpenCV, scipy, DuckDB, PostGIS, H3, Kafka, RabbitMQ, python-asyncio, HRRR, MRMS, METAR, ECMWF, GOES, EUMETSAT

Leadership & Practices

Team lead, Mentor, System Architecture, CI/CD, Observability

2015 [Part-time Instructor – Python 300](#)

↑ [University of Washington Professional & Continuing Education](#) |

2013 Seattle, WA

- Created curriculum and taught the Python professional certificate program
- Delivered classes on-site at UW and off-site for corporate clients

2014 [Owner & Lead Developer](#)

↑ [Velotron Heavy Industries](#) | Seattle, WA

- 2007**
- Delivered dozens of commercial and research projects across weather, fisheries, energy, and interactive art
 - Built and commercially successful educational platform for poker with integrated e-commerce, video streaming, and social components
 - Created a gesture and voice controlled Windows application as prototype for smart appliances (Ember.js + C# .NET)
 - Designed weather model management systems and wind power forecast delivery portals

2014 [Senior Developer](#)

↑ [ClipCard \(formerly OneOcean\)](#) | Seattle, WA

- 2012**
- Core engineer on distributed Django metadata extraction platform for oceanographic datasets
 - Integrated proprietary formats, cloud storage, and multiple distributed task queues

2007 [Developer & Systems Administrator](#)

↑ [3TIER \(now Vaisala\)](#) | Seattle, WA

- 2003**
- Built end-to-end meteorological data collection, modeling, and web delivery systems
 - Managed large Linux clusters running numerical weather models
 - Introduced modern software development practices

2003 [Java Developer](#)

↑ [Chronotechnic](#) | Seattle, WA

2002

2002 [IT Manager & Developer](#)

↑ [OEOne](#) | Gatineau, QC

2001

2001 [President & Technical Consultant](#)

↑ [Arctic Fox Technology Incorporated](#) | Fairbanks, AK

2000

1998 [Scientific Programmer & Web Developer](#)

↑ [University of Washington](#) | Seattle, WA

1996

1998 [Field Tech & Software Developer](#)

↑ [New Mexico Tech at Langmuir Laboratory](#) | Socorro, NM

1997