AKSHAY SURESH

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Data scientist with 7 years of experience in best practices Python coding for agile software development. Played a pivotal role in designing reproducible machine learning codebases with significant industry impacts. Passionate about building innovative software solutions to address complex real-world problems and deliver sustainable benefits for businesses and society.

WORK EXPERIENCE

Freelance Data Scientist 01/2024 – Present
Artificial Intelligence for Positive Human and Climate Impact

- **Implemented a segmentation model to detect Amazon rainforest cover in satellite imagery** with a 97% true positive rate.
- **Evaluated rooftop solar viability through LiDAR analysis for 996 Florida buildings**, projecting that 53% could secure annual profits exceeding $1,000 upon transitioning to solar-powered homes.
- **Delivered technical consultancy to an early-stage startup building a data-as-a-service platform**, empowering consumers to reduce their monthly electricity bills by up to 15% through tailored recommendations.

Relevant Certifications:
Machine Learning Engineer, AI for Wildfire Spread Prediction in Uttarakhand, India 03/2025
Advanced GIS and Remote Sensing, GIS Vision India 05/2024

Graduate Researcher, Cornell University 08/2017 – 08/2023
Enabling Automated Astrophysical Event Discovery

- Developed novel open-source software to enable the first searches for radar-like transmissions from about 600,000 planetary systems in the Milky Way.
- Engineered an automated, memory-efficient pipeline for parallel processing of 10 TB of data at speeds surpassing 500 GB/hr on supercomputing platforms.
- Trained a deep neural network from scratch to classify and flag 95% of interference signals in noisy data, thus minimizing human input in large-scale data processing.

Machine Learning Researcher, Frontier Development Lab USA 06/2022 – 08/2022
Time Series Forecast of Rates of Induced Earthquakes from Underground Carbon Storage

- **Integrated physics-based constraints into cutting-edge time series forecasting models** for 70% accurate earthquake forecasts, aiding in safe climate change mitigation efforts.
- Reduced location-specific data modeling time from 22 hours to 3 minutes using numerical computing best practices, efficient optimizers, and dimensionality reduction methods.
- Expanded accessibility of code operation from an estimated 10,000 seismologists to over 5 million individuals with basic computing skills.

TECHNICAL SKILLS

Computer Languages	Python, bash scripting, LaTeX, HTML, SQL
Python Libraries	NumPy, SciPy, PyTorch, Scikit-learn, Matplotlib, **GeoPandas**, **Xarray**, **Rasterio**
Cloud Computing	**Amazon Web Services (AWS)**, Google Cloud Platform (GCP)
Software Engineering	**Production code development**, **Weights & Biases**, CircleCI (for CI/CD), Dagster
Geospatial Software	ArcGIS Pro, QGIS
Quantitative Skills	Machine learning, numerical analysis, probability and statistics, signal processing

EDUCATION

MS & PhD (Astronomy & Physics), Cornell University, USA 08/2023
BS & MS (Physics & Mathematics) Dual Degree with Distinction, IISER Pune, India 05/2017