AKSHAY SURESH

https://akshaysuresh1.com akshay721@gmail.com akshaysureshAS1 akshaysuresh1

Data scientist with 7 years of experience in statistical data analysis and open-source software development using Python. Played a pivotal role in designing three machine learning frameworks 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 Climate Action

- **Evaluated rooftop solar viability through LiDAR analysis for 996 Florida buildings**, projecting that 53% could secure annual profits exceeding $1000 upon transitioning to solar-powered homes.
- **Implemented an image segmentation model to pinpoint oil wells in satellite imagery**, leveraging a restricted training dataset of 294 natural color images with varying spatial resolutions.
- Provided strategic technical consultancy to an early-stage startup focused on promoting energy efficiency, empowering consumers to reduce their monthly electricity bills by up to 15% through tailored recommendations.

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 extraterrestrial worlds in the galaxy.
- Engineered an automated, memory-efficient pipeline for parallel processing of 10 TB of data at speeds surpassing 500 GB/hr on supercomputing platforms.

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 with state-of-the-art time series forecasting models to enable 70% accurate earthquake forecasts for safe climate change mitigation activities.
- **Reduced modelling time from 22 hours to 3 minutes on a tablet** using numerical computing best practices, efficient optimisers, and dimensionality reduction methods.
- Lowered the entry barrier for code operation from an estimated global pool of 10,000 seismologists to at least 5 million people with basic computing skills.

Bootcamp Project Leader, Erdös Institute Data Science Certification 05/2022
Budgeting Fertiliser Usage for Sustainable Rice Cultivation in India

- Built regression models and established metrics to assess the accuracy of forecasts for optimal fertiliser inputs across 6 data-driven cultivation environments.

TECHNICAL SKILLS

Computer Languages	Python, bash scripting, LaTeX, HTML, SQL
Python Libraries	NumPy, SciPy, PyTorch, scikit-learn, Matplotlib, Seaborn, Plotly, GeoPandas, Xarray
Quantitative Skills	Machine learning, numerical analysis, probability and statistics, signal processing
Software Engineering	High-performance computing, production code development
Cloud Computing	Google Cloud Platform (GCP), Amazon Web Services (AWS)
Geospatial Software	ArcGIS Pro, QGIS
Operating Systems	Linux, iOS, Microsoft Windows

EDUCATION

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