

Shraddha Singh

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Profile

Data Scientist with 5+ years of experience developing machine learning solutions in sustainability, energy, and infrastructure. Specialized in foundation models, time-series forecasting, and explainable AI. Experienced in model design and deployment in cloud environments and research presentations at international conferences.

Skills

Languages: Python (primary), SQL, Git, C++

Frameworks: PyTorch, PyTorch Lightning, TensorFlow/Keras

Cloud & DevOps: IBM Cloud, Docker, Kubernetes, Flask

Core Areas: Foundation Models, Time-Series Forecasting, XAI, Cloud ML Deployment, MLOps

Experience

IBM Sustainability Software

Data Scientist

Austin, TX

Feb 2020 – Present

- Adapted large-scale weather foundation models for outage prediction and regional downscaling, enhancing spatial precision and robustness for operational planning.
- Designed encoder-decoder pipelines using Perceiver Transformer architectures, integrating multi-modal inputs for foundation-model fine-tuning.
- Built real-time anomaly detection systems for streaming data, improving alert precision, and reducing false positives.
- Developed supervised learning models to optimize material-ordering and resource allocation decisions, increasing stakeholder trust through explainable AI.
- Collaborated with cross-functional teams to deploy predictive analytics solutions on IBM Cloud and presented results at the **AGU Fall Meeting 2024**.

IBM Cloud & Storage Systems

Extreme Blue Data Scientist Intern

Durham, NC

May 2019 – Aug 2019

- Developed and deployed predictive ML models for proactive server failure detection, improving incident triage workflows.
- Conducted exploratory data analysis using Python and the ELK stack to surface key operational insights.
- Delivered technical updates to IBM executives and stakeholders on a weekly cadence.

IBM Systems

Verification Engineer

Austin, TX

Jun 2015 – Jul 2018

- Performed functional verification for Power9 and Power9-Axone processor subsystems (OpenCAPI data link, memory controller) using C++/RTX.
- Automated verification workflows, improving coverage and reducing regression test time.

Research & Publications

- Singh, S. (Presenting author 2024). *Downstream Applications on Prithvi WxC: A Foundation Model for Weather and Climate*. Presented at the AGU Fall Meeting 2024.
- Singh, S. (Presenting author 2024). *Uncertainty Quantification of Aboveground Biomass Predictions Produced by Fine-Tuned Geospatial Foundation Models*. Poster, AGU 2024.
- Schmude, J. et al., Singh, S. (2024). *Prithvi WxC: Foundation Model for Weather and Climate*. arXiv:2409.13598.

Education

M.S., Computer Science (Machine Learning) — Georgia Institute of Technology, Dec 2019

B.S., Electrical & Computer Engineering — University of Texas at Austin, May 2015

Community

WiDS Datathon — Team Lead (2021)

Penguins at IBM BRG — Mascot Co-Chair (2015–2024)

Introduce a Girl to Engineering Day — Volunteer (2013–present)