

# Raghav Mittal

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## PROFESSIONAL SUMMARY

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Over four years of experience in data science and engineering, specializing in operations improvement, energy optimization, and geospatial analysis. Skilled in data modeling, inferential analysis, predictive modeling, and interactive data visualization.

## EXPERIENCE

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**Trimble Maps**, Commercial Routing, Scheduling, & Navigation Solutions Sunnyvale, US  
**Software Engineer In Test**, Places Team Mar 2023 - Present

- Led & automated integration tests in collaboration with cross-functional teams & external partners, reducing testing time by **30%** for critical API functionality, data integrity, error handling, & performance validation.
- Orchestrated comprehensive testing of web services during diligence, securing company buy-in for a seamless cloud platform migration supporting logistics needs of a retail giant.
- Automated data quality tests to validate map data updates, ensure data pipeline reliability & enhance efficiency.

**Dastur Energy**, Leading Engineering Consulting Firm for Heavy Industries Kolkata, India  
**Data Scientist**, Energy & Process Metallurgy Division Jul 2018 - Jun 2021

- Spearheaded analytics efforts identifying 9 operations improvement initiatives - improving yield, reducing energy consumption & materials consumption - saving **\$12 Mn annually** for a Mexico-based Steel Plant.
- Effectively communicated data-driven insights to customer executives through visualizations & technical presentations, successfully persuading them to adopt recommended revisions in SoPs, leading to improved operational efficiency.
- Developed dynamic predictive models monitoring desulphurization process in ladles, optimizing processing time & resource consumption, with a potential of saving **\$6.5Mn** for a 4.5MTPA steel plant.

## TECHNICAL SKILLS

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- **Programming Languages & Frontend Frameworks:** Python (Flask, FastAPI), JavaScript, Streamlit, Gradio
- **Data & ML:** SQL, NoSQL, Spark, Python (Numpy, Pandas, Scikit-Learn, PyTorch), Tableau, Flink, Kafka
- **Cloud, ETL and DevOps:** AWS (S3, DynamoDB, Lambda, EC2, ECR), dbt, Airflow, Git, Docker

## PROJECTS AND LEADERSHIP

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**Estimating potential emissions reduction via Load Shifting for EV charging at home** [[app](#), [medium](#), [github](#)]  
• Developed and deployed a Streamlit-based interface on GCP to model and optimize EV charging times, minimizing carbon emissions using real-time data. Demonstrated a **24%** reduction in emissions through smarter charging behavior.

**Deep learning-based image classification tool for automating reactor state monitoring** [[app](#), [github](#)]  
• Engineered a PyTorch pipeline by applying transfer learning on a fine-tuned ResNet-18 model for foaming state detection.  
• Improved model accuracy and robustness by augmenting the dataset with 1,000+ images and automating preprocessing (orientation correction, resizing, normalization), streamlining real-time inference for reactor image classification.

**University of California, Berkeley** California, US  
**Graduate Student Instructor**, Dept. of Data Science, Statistics, ESPM Jan 2022 - Dec 2022  
• Led 4 discussion sections, providing academic support, guidance & mentorship to >175 UG students.

**Classification of war-destroyed buildings in Syria using Satellite Imagery** [[pdf](#), [github](#)]  
Mentor: Prof. Hany Farid Oct 2022 - Dec 2022  
• Designed, implemented & refined deep learning models (CNN, SiameseNet) to automate the monitoring of war-related building destruction using high-resolution satellite images.  
• Enhanced image data using filtering and dimensionality reduction techniques to optimize model performance.

## EDUCATION

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**University of California, Berkeley** August 2021 - December 2022  
M.S., Development Engineering, Data Science Focus  
• Leadership: Elected Representative, Resident Council, International House  
**Indian Institute of Technology, Kanpur** July 2014 - June 2018  
B.S., Materials Science & Engineering

## MISCELLANEOUS

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- **Publications:** Published & presented 3 papers [[1](#), [2](#), [3](#)] at **AISTech** and **METEC** Conference Proceedings
- **Certifications:** [Data Engineering bootcamp](#) - DataExpert.io, [Machine Learning](#), [Deep Learning](#) - Coursera
- **Sports:** State-level Basketball Player (U-19), endurance runner, cyclist & avid trekker.