GEET KALRA

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EDUCATION

MASSACHUSETTS INSTITUTE OF TECHNOLOGY Cambridge, MA
Dual degree: M.S. in Computer Science | M.S. in Engineering and Management 2019 - Present

- Relevant coursework: artificial intelligence, computer vision, data visualization, business analytics, system architecture, system engineering, project management, distributed systems, computer networks, and natural language processing

INDIAN INSTITUTE OF TECHNOLOGY Delhi, India
B. Tech in Mechanical Engineering 2008 - 2012

EXPERIENCE

MICROSOFT Cambridge, MA (Hybrid)
Data Science / Data Engineering Intern January 2022

- Anomaly detection system for Microsoft's commercial checkout flows
  - Designed and implemented a system to detect purchase cart failures in real-time while identifying the source of anomaly
  - Successfully implemented a big data pipeline and productionized the system using Azure resources
  - Created a dashboard using Power BI and linked it to the cloud to provide real time updates and alerts

CYBERSECURITY AT MIT SLOAN (CAMS) Cambridge, MA
Graduate Research Assistant 2020 - Present

- Anomaly detection in industrial control systems (ICS) using machine learning
  - Detected 29 out of 36 cyber-attacks on a water treatment testbed using unsupervised learning
  - Applied supervised learning methods like decision trees and k-nearest neighbors yielding a precision of 0.9
  - Used models like LSTM-VAEs to capture the dependencies in time series data from 51 sensors and actuators

CENTER FOR TRANSPORTATION AND LOGISTICS, MIT Cambridge, MA
Teaching Assistant *(three courses; > 25,000 learners)* January 2021 - Present

Supply chain analytics (SC0x), Supply chain fundamentals (SC1x) and Supply chain design (SC2x)

- Supported students in learning probability, statistics, optimization, demand forecasting, finance, and network design
- Conducting webinars with live problem-solving sessions, updating course content, and beta testing exams

INSPIRIT AI Remote
Instructor Summer 2021

- Taught machine learning methods including logistic regression and neural networks (U-net, CNN, RNN and LSTM)

INDIAN SPACE RESEARCH ORGANISATION (ISRO) Kerala, India
Product Manager 2012 - 2019

- Awarded *Outstanding Performer* at ISRO for six consecutive years (2013 - 2018)
- Designed and managed life cycle of Carbon Fiber Reinforced Polymer (CFRP) products for satellites
  - Led a team of 25 technicians to fabricate CFRP optomechanical structures and antenna reflectors
  - Coordinated teams across three cities in different centers of ISRO to conduct vibration and thermal tests
  - Managed vendor relationships and procurement of components including CFRP structures and metallic fittings
  - Co-managed the successful indigenization of payloads, resulting in savings (~$1 million) from imports

PROJECTS

- **Fault Tolerant Key/Value Storage System:** Implemented Raft, a replicated state machine protocol, using Go; built a key/value service on top of Raft, sharded over replica groups for higher performance
- **ML Based Disease Detection:** Used transfer learning to adapt models like *resnet-50* and *densenet121* to detect diseases from chest X-rays; leveraged saliency maps to enhance interpretability of the models for use in diagnosis and reporting

SKILLS

Go, Python, big data pipelining using Azure Event Hubs, Databricks (Spark), Delta Lake and Power BI, R, MATLAB, SQL, JavaScript, D3.js, TensorFlow, PyTorch, Scikit-learn, NumPy, Pandas, Plotly, PySpark, Tableau