

# Vineet Vora

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## SUMMARY

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Software Engineer and Master's student in Artificial Intelligence with hands-on experience in machine learning, distributed systems, and full-stack development. Proven ability to design scalable ML pipelines, optimize large-scale data processing systems, and deliver high-performance solutions using Python and Java. Seeking Software Engineer / Machine Learning Engineer roles.

## TECHNICAL SKILLS

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- **Languages:** Python, Java, JavaScript (ES6+), SQL, HTML5, CSS3
- **Backend & Frameworks:** Node.js, React.js
- **Machine Learning:** PyTorch, TensorFlow, Scikit-learn, OpenCV, NumPy, Pandas
- **Big Data & Cloud:** Hadoop, MapReduce, HDFS, YARN, AWS EC2
- **Databases:** MySQL, PostgreSQL, MongoDB
- **Tools & Practices:** Git, Docker, CI/CD, Agile, TDD

## PROJECTS

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1. **IMF Bz Forecasting using Surya Foundation Model** *Dec 2025 – Present*  
*github.com/VineetV2/imf-bz-forecasting-surya*  
Python, PyTorch, CUDA, Weights & Biases
  - Built a machine learning pipeline to forecast Interplanetary Magnetic Field (IMF) Bz values at T+24h, T+48h, and T+72h for geomagnetic storm prediction.
  - Applied transfer learning using Surya, a 366M-parameter Vision Transformer pretrained on NASA SDO imagery.
  - Adapted the model to process 13-channel AIA EUV and HMI magnetograms ( $512 \times 512$ ).
  - Implemented parameter-efficient fine-tuning using LoRA and frozen encoder strategies.
  - Designed Leave-One-Flare-Out cross-validation across 57 major solar flare events.
  - Achieved 3.39 nT RMSE with 96.5% forecasts rated Excellent/Good, with  $3.5\times$  efficiency gains.
2. **Hadoop MapReduce Flight Data Analysis** *Nov 2025 – Dec 2025*  
*github.com/VineetV2/hadoop-flight-data-analysis*  
Java, Hadoop, AWS EC2
  - Developed a distributed analytics system using Hadoop MapReduce to process 118.9 million flight records (11.66 GB).
  - Deployed and configured a 6-node Hadoop cluster on AWS EC2 with 100% data-local map execution.
  - Implemented custom MapReduce jobs for on-time performance and distance analysis.
  - Achieved  $2.73\times$  speedup through horizontal scaling and demonstrated sub-linear scaling efficiency.
3. **EV Range Prediction using Machine Learning** *Feb 2025*  
*github.com/VineetV2/ev-range-prediction*  
Python, Scikit-learn, TensorFlow
  - Developed a regression-based ML model to predict electric vehicle battery consumption and driving range.
  - Modeled real-world parameters including speed, terrain, temperature, and vehicle load.
  - Improved route planning accuracy and reduced range anxiety for EV users.
4. **Attendance Marking System using Face Detection** *Feb 2025*  
*github.com/VineetV2/Face-Based-Attendance-Automation*  
Python, OpenCV, YOLO, FaceNet
  - Built an automated attendance system using real-time face detection and recognition.
  - Integrated YOLO for face detection and FaceNet for identity recognition.
  - Generated automated Excel-based attendance reports and designed the system for scalable deployment.

## EXPERIENCE

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- **Xena Technologies Pvt. Ltd.** Oct 2023 – Dec 2023  
*Software Programmer* Ranchi, India
  - Contributed across the SDLC by developing, testing, and debugging maintainable production code.
  - Improved application stability through unit testing and QA defect resolution.
  - Collaborated with senior engineers to analyze legacy codebases and implement scalable enhancements.
  - Used Git and Agile/Scrum practices for version control and sprint execution.
- **Ethnus** Aug 2023 – Nov 2023  
*Full-Stack Developer (Remote)*
  - Designed and developed a full-stack real estate web application with frontend-backend integration.
  - Built responsive UI components and backend services for managing property listings and users.
  - Improved performance using caching, compression, and asset optimization techniques.
  - Maintained technical documentation and enforced code quality using Git.

## EDUCATION

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- **New Jersey Institute of Technology** Expected Jun 2027  
*Master of Science in Artificial Intelligence* Newark, NJ
- **Vellore Institute of Technology – AP** Jun 2025  
*Bachelor of Technology in Computer Science* India

## CERTIFICATIONS

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- Enterprise Design Thinking Practitioner — IBM