

# KAIVALYA KISHOR DIXIT

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## Education

**M.S in Data Science / New Jersey Institute of Technology**

MAY 2025

GPA: 3.95/4.0

## Skills

**Programming Languages:** Python | Java | JavaScript | C/C++ | HTML/CSS | Shell Scripting | LaTeX | TypeScript

**Machine Learning & AI:** PyTorch | TensorFlow | Scikit-learn | Keras | XGBoost | OpenMP | MPI | CUDA | LangChain | LlamaIndex | OpenAI Gym | Natural Language Processing (NLP) | Deep Learning | Neural Networks | Transformers | CNNs | RNNs (LSTM/GRU) | Transfer Learning | Ensembling | Multimodal Learning | AutoML | Time Series Analysis | Reinforcement Learning

**Data Engineering & Analytics:** SQL | PySpark | Hadoop | Pandas | NumPy | MapReduce | Hive | MongoDB | ETL/ELT Pipelines | Data Warehousing | Data Lake | Feature Engineering | Statistical Analysis | Big Data | Tableau | Matplotlib | Seaborn | Plotly

**Cloud & DevOps:** AWS | Docker | Apptainer | Git/GitHub | Databricks | MLflow | Weights & Biases | CI/CD | Containerization

**Frameworks & Tools:** React | Next.js | Node.js | Flask | Streamlit | Spring Boot | REST APIs | Tailwind CSS | Bootstrap | SLURM

**Databases:** PostgreSQL | MySQL | MongoDB | Redis | Data Modeling | Database Design | Query Optimization

## Experience

**HPC User Support Specialist Intern/ New Jersey Institute Of Technology**

SEP 2024 – MAY 2025

- Catalyzed research productivity for 400+ researchers via expert management of **PyTorch/Conda** environments, **Docker** containerization, and strategic **GPU/CPU** optimization across a hybrid cluster infrastructure.
- Orchestrated a **SLURM**-based benchmark suite to oversee node health using **Python** and **Bash**, diminishing manual checks by 80% and escalating cluster uptime by 200 hours quarterly.
- Built a Raspberry Pi-based HPC testbed for pre-deployment validation, lowering production cluster deployment risks by 30% through iterative testing.

**DATA ANALYST INTERN | DASSAULT SYSTEMS**

JAN 2023 – JUL 2023

- Developed scalable **Java ETL pipelines** for 15+ SaaS product streams, processing enterprise-scale customer lifecycle data and supporting GDPR compliance across EU/NA teams, ensuring international regulatory standards.
- Designed and launched **interactive dashboards** for license conversion tracking with **J2EE/Spring backends**, improving decision-making efficiency by 25%.
- Automated data quality checks with **SQL** window functions and constraints, increasing pipeline reliability and reducing data inconsistencies by 40%.

## Projects

**DISTRIBUTED MACHINE LEARNING FRAMEWORK | C++, OPENMP, CUDA, MPI, PYTHON, PYBIND | MAR 2025 – MAY 2025**

- Expedited distributed deep learning training speed by **5.2x** through a parallel gradient synchronization solution, also accelerating data loading on the MNIST benchmark by **26.6x** using **OpenMP** and **CUDA**.
- Built a comprehensive benchmarking suite that demonstrated the custom implementation achieved 90% performance parity with PyTorch while using 20% less memory, enabling more efficient resource allocation.

**ZIGGY - COMPANION CHATBOT | TYPESCRIPT, REACT, NEXT.JS, NODE.JS, EXPRESS, MONGODB, REDIS | JUL 2025 – PRESENT**

- Revamped chatbot performance by integrating the **Perplexity Pro API** with a local LLM through **Ollama** on a custom server, enabling advanced query handling and reducing reliance on external APIs by 70%. Simultaneously, launched a mobile-first progressive web app with Docker containerization for seamless deployment, boosting mobile user engagement by 30%.
- Engineered a robust testing suite utilizing **Jest** and **React Testing Library**, identifying and resolving 15 critical bugs before deployment, increasing chatbot stability by 40%.

**LMAN - AI-POWERED UNIX MANUAL ASSISTANT | PYTHON, NLP, RAG, CLI DEVELOPMENT | MAY 2025 – PRESENT**

- Pioneered a **CLI** tool integrating **Retrieval-Augmented Generation (RAG)** and semantic search pipeline; enabled natural language querying, and facilitated accurate command Q&A for Unix man pages with 90% efficiency.
- Designed a **modular architecture** with Poetry for dependency management and an intuitive CLI interface utilizing **Click** and **Rich** libraries, ensuring user-friendly operation and streamlined development.

**QUANTITATIVE PORTFOLIO SIMULATOR | PYTHON, PANDAS, NUMPY, MATPLOTLIB, SEABORN | FEB 2024 – APR 2024**

- Engineered a data pipeline consolidating 10 stock datasets and FX rates into an aligned **time-series** structure, including OHLC and Adjusted Close handling, and integrated a daily USD/JPY FX conversion system for accurate JPY-denominated performance tracking.
- Visualized strategy results against a synthetic tech index using **matplotlib** dual-axis plots with percentage change normalization, enabling comparative performance analysis.

## Certifications

- AWS Certified Machine Learning Engineer – Associate (MLA-C01) | 2025
- NVIDIA Deep Learning Institute – Building RAG Agents with LLMs | 2025
- Kaggle Introduction to Machine Learning | 2022