Kaartikeya Panjwani

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EDUCATION

- **New York University,** New York, NY — August 2023 – May 2025
  Master of Science, Computer Science | **GPA: (3.633/4)**
  Software Engineer (Web Development) at NYU Courant
  Coursework: Foundation of Data Science (A), Data Science for Business (A), Software Engineering (A), Deep Learning (A)
- **Vellore Institute of Technology**, Tamil Nadu, India — July 2019 – June 2023
  Bachelor of Technology, Computer Science and Engineering | **GPA: (3.5/4)**
  Applied Machine Learning Research Assistant, Artificial Intelligence Lab, VIT Vellore
  Coursework: Data Structures & Algorithms, Natural Language Processing, Artificial Intelligence, Software Engineering, Database

EXPERIENCE

1. **NYU Courant Institute of Mathematical Sciences,** New York, USA | **Software Developer** — May 2024 – December 2024
   - Developed the AI4Health website using React, HTML/CSS, and WordPress to showcase research across NYU Courant, CDS, and Langone, improving public accessibility to 20+ active projects.
   - Designed 60+ modular profile and research pages, enhancing visibility of faculty contributions and increasing engagement.
   - Collaborated with design teams in an Agile environment using Jira and Notion to deliver a responsive, on-time platform.
2. **Namhya Foods,** Gurugram, India | **Software Developer** — January 2022 – July 2023
   - Spearheaded end-to-end development of a Shopify-based e-commerce platform for a fast-growing wellness startup using HTML, CSS, and JavaScript, increasing online sales by 1.8x through improved UX and performance.
   - Built a custom checkout flow integrating Shiprocket and multi-currency payment support, streamlining global order fulfillment.
   - Implemented SEO enhancements, automated inventory sync, and structured metadata, driving a 37% increase in organic reach and user acquisition.
3. **Vellore Institute of Technology**, Tamil Nadu, India | **Applied ML Research Assistant** — July 2022 – May 2023
   - Conducted capstone research under Head of AI to detect fake news using supervised ML on 20,000+ labeled news articles.
   - Implemented end-to-end text preprocessing and vectorization (TF-IDF, CountVectorizer) with scikit-learn pipelines, and trained models including Logistic Regression, Random Forest, and Naive Bayes.
   - Evaluated models using confusion matrix; achieved 92.3% accuracy and presented findings for academic review.
4. **Vellore Institute of Technology**, Tamil Nadu, India | **Applied ML Research Assistant** — July 2021 – March 2022
   - Assisted the Head of AI in applied ML research on breast cancer detection using the Wisconsin Diagnostic Dataset (569 samples, 32 features), applying classification models including SVM, KNN, Naive Bayes, and Random Forest.
   - Performed data preprocessing, feature scaling, visualization using Python libraries (NumPy, Pandas, Matplotlib and Seaborn), and dimensionality reduction using PCA, improving model training efficiency and interpretability.
   - Achieved 96.49% accuracy and an AUC score of 0.97 with SVM; validated model performance through 5-fold cross-validation and confusion matrix analysis.

PROJECTS

1. **Image Generation Using Stable Diffusion** (Python, Flask, PyTorch, CUDA) – (Code) — September 2024 – December 2024
   - Fine-tuned Stable Diffusion XL using DreamBooth and LoRA on 5 custom images, achieving a 36.4 CLIP score for accurate prompt-image alignment and subject consistency in personalized generations.
   - Conducted benchmarking against DALL·E Mini and SD v1.5, showing 50% faster inference and visibly better fidelity.
2. **Home Credit Default Risk Prediction** (Python, Scikit-learn, Pandas, Seaborn) – (Code) — September 2024 – December 2024
   - Developed an end-to-end ML pipeline using XGBoost, improving AUC from 0.67 to 0.78 and loan default prediction accuracy.
   - Engineered 100+ features from 1,638 raw inputs; reduced to 498 via Random Forest-based selection, while handling 92:8 class imbalance using resampling and cost-sensitive learning.
3. **E-Commerce Application** (MongoDB, Express.js, React, Node.js, Redux, Redis, JWT) – (Code) — July 2024 – December 2024
   - Built a scalable MERN e-commerce platform with REST APIs, JWT auth, RBAC, and Stripe-integrated checkout flow.
   - Integrated Redis caching and MongoDB aggregations to improve analytics and API performance by 35%.
4. **NYC 311 Analytics & Prediction** (Python, NumPy, Pandas, Scikit-learn, Matplotlib) – (Code) — July 2024 – December 2024
   - Analyzed over 4 million NYC 311 service requests (2010–2023) to model resolution times using XGBoost and Random Forest, achieving Mean Absolute Error of 1.62 days and uncovering delays in departments like DOT and HPD.
   - Engineered 60+ features from timestamp, complaint type, borough, and agency data; applied seasonal and spatial clustering to identify resource underutilization and peak demand trends by zip code and season.

TECHNICAL SKILLS

Programming Languages: Python, JavaScript, TypeScript, HTML, CSS, C++
AI/ML: NumPy, Pandas, Scikit-Learn, PyTorch, Gen AI, GANs, Diffusion, LoRA, CNNs, RNNs, LSTMs, Transformers, NLTK
Web Development: React, Redux, Tailwind CSS, Node, Express, Django, MongoDB, MySQL, PostgreSQL, Redis
Other: Tensorflow, GitHub, Postman, JIRA, AWS, CI/CD Pipelines, Docker, Azure, Agile, Scrum, Colab