KAARTIKEYA PANJWANI

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Education

New York University, New York, NY Sep 2023 - May 2025
Master of Science, Computer Science GPA: 3.6

Vellore Institute of Technology, Tamil Nadu, India Jul 2019 - Aug 2023
Bachelor of Technology, Computer Science and Engineering GPA: 3.5

Experience

NYU Courant Institute of Mathematical Sciences May 2024 – Dec 2024
Software Developer *New York, USA*

- Developed the **AI4Health website** using **React, HTML, CSS, and WordPress** to showcase ongoing research at NYU Courant Institute of Mathematical Sciences, NYU Center for Data Science and NYU Langone Health
- Designed **professor profile pages** and **research project pages** to highlight individual researchers and their work
- Collaborated with designers and backend developers to create seamless and visually appealing user interfaces
- Utilized project management tools like **Jira** and **Notion** to track progress and meet deadlines efficiently

Namhya Foods Jan 2021 – Jul 2023
Web Development Project Lead *Gurugram, India*

- Developed the **e-commerce website** for the venture for their online market using **HTML, CSS, JavaScript** and **Shopify** that increased their sales by **1.8x**
- Expanded my role as advisor to the development team and spearheaded the project, applying **search engine optimization** and social media marketing that increased the company's market reach by **37%**
- Collaborated with the development team using **Jira** and utilized **Shopify** to create an online web store for the venture

Projects

Full Stack (MERN) E-Commerce Project Sep 2024 – Feb 2025
New York University *New York, USA*

- Developed a scalable full-stack e-commerce platform using **MongoDB, Express.js, React,** and **Node.js (MERN)**, implementing a **high-performance backend** with **RESTful API design**, middleware-based request handling, and **JWT-based authentication** with **refresh/access tokens** for secure user sessions and role-based access control (RBAC)
- Implemented advanced e-commerce functionalities, including **dynamic product** and **category management**, a **Redux-powered shopping cart**, and a checkout system integrated with **Stripe API**, enabling secure transactions and real-time payment processing. Developed a **coupon code system** with backend validation and discount application logic
- Built an **admin dashboard** with **order management, inventory tracking, and sales analytics**, leveraging **MongoDB aggregation pipelines** for data insights. Integrated **Redis caching** to enhance database performance, reducing query latency and ensuring a smooth user experience even under high traffic loads
- Designed a responsive and optimized front-end using **React, React Router, Redux Toolkit, and Tailwind CSS**, implementing **lazy loading, code splitting, and API request caching** for performance improvements. Enforced **security best practices**, including **input sanitization, secure API authentication, and environment-based configuration management** for production readiness

Home Credit Default Risk Project Sep 2024 – Dec 2024
New York University *New York, USA*

- Designed and implemented an end-to-end **machine learning pipeline** to **predict loan defaults** using XGBoost, **improving AUC from 0.67 to 0.78** and enhancing risk assessment for financial institutions
- Conducted extensive **data preprocessing**, including **handling missing values, outlier detection,** and **feature scaling**, then engineered 100+ features from applicant demographics, credit history, and behavioral data
- Optimized feature selection using **Random Forest importance ranking**, reducing dimensionality from 1,638 to 498 features while maintaining predictive performance and computational efficiency
- Addressed severe **class imbalance** (92% non-default, 8% default) through resampling techniques and cost-sensitive learning, ensuring model robustness, and validated performance through **cross-validation** and Kaggle submission

Skills

Programming Languages: JavaScript, TypeScript, HTML, CSS, Python, C++
Frontend Development: React.js, Redux, Tailwind CSS, Responsive UI Design
Backend Development: Node.js, Express.js, Django, MongoDB, MySQL, PostgreSQL, Redis (Caching & Session Storage), RESTful APIs, JWT Authentication & Authorization, Secure Payment Integration (Stripe), Role-Based Access Control (RBAC)
Other Software/Tools: Git, GitHub, Postman, JIRA, AWS, CI/CD Pipelines, Docker