Kenney Tran

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Education

- **Boston University** — Boston, MA
  Bachelor of Science in Computer Science (GPA: 3.2) — *Expected Graduation: 2026*
  - Relevant Coursework: Data Structures & Algorithms, Database Systems, Fullstack Development, Machine Learning, Data Science, ML for Business Analytics
  - Transferred from UMass Boston (Computer Engineering) in 2023

Technical Skills

- **Programming Languages**: HTML, CSS, JavaScript / TypeScript, Bash, Python, Java, C, SQL, OCaml
- **Frameworks & Libraries**: React, Next.js, Node.js, Express, Flask, Material UI, Tailwind CSS, Firebase, scikit-learn, NumPy, pandas, Matplotlib, XGBoost
- **Databases & Caching**: MongoDB, Redis, Firebase Firestore
- **Developer Tools**: Git, GitHub, Vercel, Postman

Projects

- **BU Transit Tracker Web Application (Next.js, TypeScript, Node.js, Redis, Google Maps API, Vercel)**:
  - Built a **full-stack, real-time campus bus tracking web application** integrating the BU TransLoc API and Google Maps to display live bus positions, routes, and ETA predictions.
  - Implemented a **Redis caching layer** to reduce external API calls and significantly decrease response latency under high-frequency location updates.
  - Deployed to **Vercel** with a CI/CD pipeline that automatically builds and deploys on code commits for continuous integration and delivery.
- **Airbnb Price Prediction Model (Python, scikit-learn, pandas, NumPy, Matplotlib, XGBoost)**:
  - Designed a **supervised machine learning pipeline** to predict Airbnb listing prices across 76K+ records, achieving **R^2 = 0.71** with Random Forest regression.
  - Performed **feature engineering** on amenities and neighborhood attributes, using imputation and log transformations to handle missing and skewed data.
  - Compared baseline linear models with **tree-based ensembles** (Random Forest, XGBoost) and tuned hyperparameters to reduce prediction error and improve generalization.
- **To-Do List and Calendar Integration (React, Express, Firebase (Firestore & OAuth), Axios)**:
  - Developed a **full-stack task management application** with a React frontend and Express backend, persisting tasks in **Firestore** with real-time updates.
  - Implemented secure **user authentication** via Google/GitHub OAuth, including persistent session management and offline accessibility for a better user experience.
  - Designed **RESTful API endpoints** for CRUD operations with proper error handling and data validation to ensure data integrity and reliability.
- **Multi-threaded Image Processing Server (C, POSIX Threads, Sockets, Semaphores)**:
  - Built a **thread-safe C server** with a FIFO work queue to handle image registration, blurring, and edge detection requests concurrently.
  - Used **mutexes and semaphores** to coordinate access to shared data structures across worker threads, improving concurrency and stability under high load.
  - Implemented socket-based communication between clients and the server, managing request parsing, response formatting, and graceful shutdown.