

Yuanzheng (Jack) Yu

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EDUCATION

Carnegie Mellon University

Pittsburgh, PA

Bachelor of Statistics & Machine Learning | GPA: 3.8/4.0

Expected May 2029

Relevant Coursework: Programming, Reasoning with Data, Methods for Statistics & Data Science

PROJECTS

CMU QPA Plus | Full-Stack Academic Metrics System

Sept 2025 – Present

FastAPI, Python, JavaScript, HTML/CSS

- Designed and deployed a full-stack application that formalizes CMU's official QPA/GPA policy into a deterministic computation engine for accurate and reliable academic metric evaluation
- Developed a FastAPI backend with Pydantic-based validation alongside a responsive JavaScript frontend supporting real-time updates; deployed a live production service used by CMU students

Occupancy Detection via Statistical Classification

Nov 2025

R, Statistical Learning, Binary Classification, Decision Trees, EDA

- Framed room occupancy prediction as a binary classification problem using environmental sensor data, incorporating temperature, humidity, CO₂ levels, and time-of-day as predictive features
- Implemented and compared LDA, QDA, logistic regression, and classification trees in R, selecting a tree-based model achieving 98% accuracy with CO₂ identified as the most informative feature

Statistical Modeling of Article Virality

Oct 2025

R, Regression Modeling, Feature Analysis, Model Diagnostics

- Modeled social media article shares using Mashable data, framing content virality as a regression problem driven by measurable content attributes and publication timing effects
- Constructed and validated a multiple linear regression model with log-transformed response, uncovering statistically significant weekday effects through hypothesis testing and diagnostic analysis

EchoMinder | Hierarchical Memory System for LLM Agents

Oct 2025

Python, LLM Agents, Memory Systems, Prompt Engineering

- Designed and implemented a hierarchical memory architecture spanning short-, mid-, and long-term layers to enable persistent cross-session contextual awareness in LLM-based agents
- Engineered automated summarization and memory retrieval pipelines to consolidate long conversations into compact, reusable structured memory and support context-aware prompt construction

Pillulu | AI-Powered Medication Management System

June 2025 – Aug 2025

Python, Flask, LLM APIs, AWS, Docker, REST APIs

- Designed and deployed an AI-powered medication management system to assist users in identifying medications, understanding usage instructions, and managing daily intake via conversational workflows
- Architected and deployed a scalable backend on AWS using Flask, Docker, Nginx, and Gunicorn, ensuring secure API handling, HTTPS-enabled service delivery, and persistent availability

WORK EXPERIENCE

CarbonTrack Org

China / U.S. / Global

Co-Founder & CEO

Nov 2023 – Present

- Owned end-to-end product and technical development of CarbonTrackApp, architecting a research-backed system that converts eco-friendly actions into gamified carbon credits
- Led continuous iteration of web and mobile platforms, coordinating technical delivery and deployments across 12+ partner schools globally to support scalable student adoption
- Built and managed a cross-functional team of 21 students across engineering, research, and marketing, establishing execution workflows to sustain long-term delivery
- Set organizational roadmap and growth strategy, balancing product development, technical constraints, and partnerships to scale adoption to 145 active users across partner schools

SKILLS

Programming Skills: Python, Java, JavaScript, R, HTML/CSS, LaTeX, Swift

Statistical Skills: Linear Regression, Logistic Regression, ANOVA, Classification Trees, Clustering

Languages: Mandarin, English