

MATTHEW KUAN

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EDUCATION

State University of NY at Stony Brook

Stony Brook, New York

Bachelor of Biomedical Engineering & Applied Mathematics and Statistics | Minor: Finance | GPA: 3.72 Expected 2028

Yonsei University

Seoul, South Korea

International Academic Programs Study Abroad Scholarship

Jun 2025 - Aug 2025

Relevant Coursework: Data Science in Python, Applied Probability and Statistics, Linear Algebra, Differential Equations

TECHNICAL SKILLS

Languages Python, Java, JavaScript, SQL

Data & Cloud PostgreSQL, Postgres, MongoDB, REST APIs, JWT Auth, Git

Frameworks React, Next.js, Node.js, Express, Spring/Spring Boot, Angular

EXPERIENCE

Goldman Sachs Emerging Leaders Series

Dallas, Texas

Engineering Division Participant

Jan 2026 - Apr 2026

- **Engineered a full-stack mutual fund investment predictor** using Java Spring Boot and Angular, developing RESTful APIs to compute projected investment returns from historical data, U.S. Treasury rates, and AI models.
- Seeded Postgres database with bond fund regression coefficients computed via Python script fetching from Yahoo Finance; cached live Newton Analytics beta values and FRED risk-free rates to minimize redundant API calls.
- **Added an AI chatbot using Gemini API** with tool-calling to fetch live expected returns and future value projections for user-specified funds, enforcing recommendation guardrails, and risk explanations.
- Built JUnit tests validating that future-value computations return the correct number of time-period entries and produce positive, finite results across all fund categories.

Low-Intensity Vibration (LIV) Lab, Stony Brook University

Stony Brook, New York

Data Analyst

Jan 2025 - May 2026

- **Built an automated Python analytics pipeline** that computed metrics from accelerometer sensor data, flagged deviations against above 0.9g thresholds, informing hardware and software redesign for improved signal stability.
- Engineered a LabVIEW-controlled LIV device integrating an Arduino microcontroller, linear voice-coil actuator, and tri-axis accelerometer to generate custom bilateral sweep signals (0–35 Hz) for future experimental studies.

PROJECTS

Multi-Modal Evidence Review | *Gemini API SDK, PyYAML, Pillow, tenacity, tqdm*

Hackerrank Orchestrate 2026

- Built a two-stage multimodal pipeline (Google Gemini vision) to adjudicate insurance-style damage claims.
- Designed a cheap Stage-1 validity gate (Flash-Lite) that screens for blur, wrong-object, and quality issues before triggering expensive Stage-2 analysis, cutting cost to ~\$0.001/claim while improving flag reliability.

Sprout | *React, Nodejs, Express, PostgreSQL, OpenAI*

Healthcare Innovation Challenge 2026

- Built a full-stack app with a RESTful Express/PostgreSQL backend, implementing JWT-based authentication and row-level data security to protect sensitive health information.
- Designed a real-time relapse-risk classification system that converts mood, cravings, and journal sentiment into personalized recovery actions.

LEADERSHIP

Alpha Eta Mu Beta National Biomedical Engineering Honor Society

Stony Brook, New York

Website Developer Elective Board

Apr 2026 - Present

- Managing routine updates to the organization's website and developing social media presence, executing a regular posting schedule to ensure digital content is accurate, user-friendly, and accessible.