

# Richard Yin

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## EDUCATION

### University of Maryland - College Park

College Park, MD

*Bachelor of Science, Major in Computer Science, Minor in Mathematics*

*August 2023 - May 2027*

- **Courses:** Machine Learning, Data Science, Operating Systems, Multivariable Calculus, DSA
- **Activities:** App Development Club; College Park Scholars: Science, Technology & Society (Selective Program)
- GPA: 3.51

## EXPERIENCE

### Software Engineer Intern

June 2025 - August 2025

*Echostar*

*Germantown, MD*

- Built and tested a Go-based monitoring system for airplane in-flight connectivity, creating and uploading approximately 3 logs/flight/minute across hundreds of flights daily.
- Results tied directly to SLA contract, KPIs influenced percentage-based contract payments with airline customers.
- Replaced a legacy Python system, eliminating a 10% test data loss rate and reducing CPU usage by 50%.
- Built a data pipeline to compress and upload 100's of daily flight telemetry to GCP, enabling flight diagnostics.

### Software Engineer Intern

September 2024 - May 2025

*Children's National Hospital*

*College Park, MD*

- Built a real-time medical monitoring system with researchers (partnership with club) to detect tracheostomy decannulation and breathing anomalies, preventing respiratory emergencies.
- Designed and implemented the BLE data link to stream CO2 data from the medical device (via ESP32) to a Raspberry Pi hub for anomaly detection before relaying results to the mobile app.
- Developed a mobile Flutter app delivering instant emergency alerts to parents and clinicians.

### Software Engineer Intern

January 2025 - May 2025

*Relentless Returns*

- First engineering intern at an SEC-registered investment management startup; implemented the initial KYC onboarding form in React, ensuring client verification aligned with Alpaca broker compliance requirements.
- Automated the generation of monthly client statements and real-time trade confirmations by developing a backend service using express.js to aggregate financial data from Supabase and Alpaca APIs.
- Collaborated directly with founders in weekly sprints, contributing to early product development decisions.

### Software Engineer Intern

September 2024 - December 2024

*Tramona*

- Developed full-stack platform (Next.js, tRPC, Prisma) for Airbnb vacancy tracking startup Tramona.
- Reduced calendar booking page load times by 50% through memoization and lazy loading.

## PROJECTS

### AI Schedule Matcher/Generator | *Google Gemini, LangChain, HuggingFace, Next.js*

- Created an AI-powered tool that generates optimized weekly class schedules from a single text input (e.g., "I want hard ML classes and a US history gen ed"). <https://github.com/yyrichy/scheduleit>
- Engineered a semantic search pipeline using HuggingFace Sentence Transformers and LangChain, enabling intelligent course matching across 200+ UMD classes
- Leveraged Google Gemini API to extract course level and difficulty from user's input.

### Professor Rating Predictor | *Python, Scikit-learn, SentenceTransformers, NLP*

- Predicted ratings for 1,637 professors from 26,713 reviews using NLP features (sentiment, text length, embeddings)
- Trained Ridge, Random Forest, and MLP models; MLP had MAE 0.282 and  $R^2$  0.841, explaining 84% of variance.
- Analyzed feature importance, revealing sentiment and expected grade as strongest predictors.

## TECHNICAL SKILLS

**Programming Languages:** TypeScript, JavaScript, Python, Java, Go, SQL, C

**Frameworks & Libraries:** React, Node.js, Flutter, Next.js, TailwindCSS

**Tools & Technologies:** Git, AWS/GCP, PostgreSQL, MongoDB, Docker

**Machine Learning:** PyTorch, scikit-learn, LangChain, Hugging Face, Pandas, NumPy, Matplotlib