Richard Yin

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Education

University of Maryland - College Park August 2023 - December 2026
Bachelor of Science in Computer Science, Minor in Mathematics − GPA: 3.4 *College Park, MD*

- **Coursework:** Algorithms, Data Structures, Data Science (Python, SQL), Computer Systems (C, Assembly), Discrete Math, Object-Oriented Programming II (Java), Computer Languages (Rust, OCaml), Applied Probability and Statistics, Linear Algebra, Calculus 2 & 3
- College Park Scholars: Science Technology and Society

Experience

Children's National Hospital September 2024 - Present
Software Engineer Intern

- Collaborating through my university's App Development Club to work with Children's National Hospital on developing a mobile app and backend system to monitor breathing tube effectiveness in children with tracheostomy. The app leverages real-time CO_2 level analysis to alert nurses and parents during emergencies.
- Conducting data analysis using Python and NumPy on a Raspberry Pi, integrating TimescaleDB for time-series data, resulting in 1,000x faster queries and 40% faster ingestion compared to PostgreSQL.
- Developing a Flutter-based mobile app for real-time monitoring and an admin web portal (Next.js, Tailwind) to streamline patient management for nurses and doctors.
- One of 10 selected from 1,000+ applicants to collaborate on this project.

Tramona September 2024 - December 2024
Software Engineer Intern

- Developed the web platform for a startup helping Airbnb hosts fill vacant rental nights: https://www.tramona.com/
- Utilized the T3 Stack (Next.js, TypeScript, tRPC, Prisma, TailwindCSS) for full-stack development.
- Optimized performance, reducing page load times by ∼50% through memoization and lazy loading.
- Designed and implemented a calendar feature for hosts to block/unblock specific dates for reservations.

App Development Club March 2024 - Present
Software Engineer *College Park, MD*

- Member of a university programming club collaborating with Fortune 500 companies (Amazon, MITRE, CNH, etc.).
- Contributed to rebuilding the club's website using React. https://appdevclub.com/
- Helped the club save partners over $500,000, developed over 50,000 lines of code, and grown to 150+ members.

Projects

GradeHelper Mobile App | *React Native, TypeScript, Expo, SOAP API*

- Built a mobile app with 100+ downloads, simplifying grade calculations and providing clear academic insights as a better alternative to existing official apps.
- Integrated the school district's SOAP API to retrieve and analyze student data.
- Implemented Sentry for real-time monitoring and debugging of production issues.
- Optimized app size by 40% by switching from APK packages to Android App Bundles.
- Published on the Apple App Store and Google Play Store, releasing the app to my school district.

App Development Club Website | *React, Typescript, MongoDB, Node.js, Figma*

- Redesigned and developed core sections of the club's website using React, improving UI/UX and engagement, while following Agile methodologies with biweekly meetings and GitHub tracking. **https://appdevclub.com/**
- Developed smooth, interactive animations with Framer Motion and Atropos for an engaging user experience.
- Implemented a responsive design with fluid gradient animations. Used Storybook for UI component testing.
- Used a MongoDB backend to dynamically manage and display project information and images, reducing manual updates.

Skills

Programming Languages: TypeScript, JavaScript, Python, Java, Rust, SQL, HTML, CSS, OCaml, C, Assembly, R, Dart
Frameworks & Libraries: React, React Native, Node.js, Flutter, Next.js, TailwindCSS
Tools & Technologies: Git, PostgreSQL, Android Studio, R Studio, Linux/Unix
Other Skills: Algorithms, Data Science, Data Structures, Figma, Design Patterns, LaTeX, Matlab, Systems Design, SDLC