Ziyu (Matthew) Liu

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Education

Colgate University | Hamilton, New York   May 2027
- Bachelor of Arts, Double Major: Computer Science + Mathematics
- Computer Science GPA: 4.07/4 | Mathematics GPA: 4.08/4 | Cumulative GPA: 4.06/4
- Relevant Coursework: Data Structure and Algorithm, Linear Algebra, Discrete Structure, Differential Equation, Combinatorics

Technical Skills

Programming/Scripting Languages: C, C++, Java, Python, JavaScript, HTML, CSS, MATLAB
Frameworks and tools: React, Vue, Tableau, Django, Next.js, SQL, Prisma, Firebase, Supabase

Research Experience

Research Assistant – GKC-CI Policy Annotation | Computer Science | Colgate University & Univ. of Iowa   Sept 2025 – Present
- Coordinate cross-institution GKCCI privacy policy labeling project, aligning guidelines with Iowa law students and designing a statistical comparison system to streamline iterative data labeling and improve dataset reliability
- Advance analysis of policy parameters by developing and fine-tuning LLM-based models to investigate relationships between parameters, transforming expert annotations into scalable, reproducible workflows that support accurate policy evaluation

Research Assistant – Homogenization Theory | Mathematics | Colgate University   May 2025 – Aug 2025
- Investigated homogenization theory on wave equations under certain microstructure and boundary conditions
- Conducted asymptotic expansion techniques and two-scale convergence validation to rigorously derive the homogenized equation of the wave equation system, and presented the research outcome in campus poster sessions and research conferences

Software Engineering Projects

Colgate Event Calendar | Software Engineering | Colgate University   Feb 2024 – Present
- Developed a full-stack campus event discovery platform with Next.js, NestJS, and PostgreSQL, integrating Google Calendar to centralize event visibility for student, while collaborating in an Agile team through sprint planning, standups, and iterative reviews
- Implemented secure authentication and live event management using Supabase with role-based access, improving reliability and user experience

CryptoEd | Software Engineering | International Student Initiative   Jul 2025 – Present
- Launch a self-initiated online platform with peers from multiplie U.S. universities to promote cryptocurrency and decentralized finance (Defi) education for undergraduates
- interactive disccusion forums (Reddit-style), and user authentication to support structured learning and peer collaboration
- Build techinal foundation with **React**, **Next.js**, **Firebase**, ensuring smooth integration of learning content with community interaction

Work Experience

Writing Center Consultant | Writing and Speaking Center | Colgate University   Aug 2024 – Present
- Engage with 50+ students per semester from various academic years, majors, and language backgrounds on their writing pieces, providing support in successive writing phases to help them build confidence in completing college-level writing
- Collaborate with writing center directors to promote the goals and culture of the Writing and Speaking Center by managing social media and pitching Writing Center values

Software Development Engineer Intern | Shanghai Qingning Recycling Design Company   Jun 2024 – Aug 2024
- **Developed and enhanced a digital pollution surveillance system** with Vite/React and Spring Boot + SQL, improving recycling data collection efficiency by 30%
- Explored blockchain integration for backend data management, proposing solutions to strengthen data security and traceability.
- Improved data visualization for pollution metrics from aerial detection stations by implementing dynamic graphs and synchronizing monthly reports with the website, ensuring real-time updates

Math Center Tutor | Math Center | Colgate University   Aug 2024 – May 2025
- Guided students across various Calculus levels by fostering critical thinking and a problem-solving mindset, enhancing their understanding and confidence in mathematics

Leadership Experience

International Student Orientation Group Leader | Office of International Student | Colgate University   May 2024 – Aug 2024
- Led a group of 11 newly arriving international students from 6 different countries in transitioning smoothly to Colgate by guiding them through immigration check-in, organizing shopping trips, and providing ongoing support during their adjustment