

Alan Yuan

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EDUCATION

New York Institute of Technology

Manhattan, NY

Bachelor of Science in Computer Science, GPA: 3.8

Expected Dec 2025

- **Relevant Coursework:** Data Structures & Algorithms, Database Systems, Software Engineering, Big Data Analytics, Information Retrieval, Introduction to Artificial Intelligence, Operating Systems
- **Awards:** NSF FASTRAC Scholarship Recipient, Presidential Honor List, Dean's Honor List

TECHNICAL SKILLS

Languages: Java, TypeScript, JavaScript, PHP, Python, SQL, MySQL, Dart, HTML/CSS

Frameworks: React.js, React Native, Next.js, Angular, Node.js, Flutter

Tools: Git/GitHub, Firebase, VS Code, Pandas, NoSQL, Jupyter Notebook, Google Colab, Spark

RESEARCH EXPERIENCE

Research Assistant

July 2024 – Present

New York Institute of Technology

Manhattan, NY

- Co-authored **2 research papers** published in **IEEE conferences**, contributing to data analysis, methodology development, and visualization tool creation
- Process and analyze **500+ CSV datasets** using Python pandas for statistical analysis and data visualization
- Engineered a responsive research website with interactive dashboards to centralize and present achievements
- Collaborated in daily stand-ups with cross-functional teams to resolve blockers and align on sprint goals

Undergraduate Research and Entrepreneurship Program (UREP)

Oct 2023 – May 2024

New York Institute of Technology

Manhattan, NY

- Designed and implemented responsive front-end UI components using modern web technologies, improving user experience and accessibility
- Systematically analyzed technical literature to extract requirements and data trends
- Collaborated in an agile team environment, facilitating peer code reviews and iterative development processes

TECHNICAL PROJECTS

A* 8-Puzzle Solver Web Application | *Python, Flask, HTML, CSS, JavaScript, Git, venv*

Oct 2025

- Developed interactive 8-Puzzle solver implementing A* search with customizable heuristics (Manhattan Distance, Misplaced Tile), visualizing AI pathfinding processes through Flask backend and dynamic JavaScript front-end
- Optimized search algorithm performance with priority queue implementation, reducing average solution time by 40%
- Applied modular programming and version control best practices to ensure scalable, maintainable code structure

AI-Powered Discord Bot Platform | *Python, Discord.py, Gemini AI, Git*

Sept 2025

- Engineered Discord bot integrating Google Gemini AI with event-driven architecture for multi-user chat system
- Achieved 77% complexity reduction through prompt engineering optimization and iterative testing
- Implemented OOP design patterns with comprehensive documentation (UML diagrams, flowcharts) and unit testing

Focus Flow - Productivity Mobile App | *TypeScript, React Native, Node.js, Firebase*

Jan 2025 – May 2025

- Architected cross-platform Pomodoro mobile app with real-time task management and Firebase authentication
- Developed scalable backend using Firestore with optimized CRUD operations and real-time data synchronization

Personal Portfolio Website | *Next.js, TypeScript, SCSS, Vercel*

July 2024 – Aug 2024

- Built responsive multi-page application with dynamic routing, SEO optimization, and modern CSS Grid/Flexbox layouts
- Deployed with CI/CD pipeline using automated Vercel hosting achieving constant uptime

PUBLICATIONS

IEEE Conference Presentations

2025

2025 IEEE Conference on Technologies for Sustainability (SusTech)

Los Angeles, CA

- A. Yuan, G. W. Too, Y. Xu, Z. Dong, H. Gu, and R. Rojas-Cessa, "Visualization Tool for NYC Open Data – A Time Lapse Analysis"

LEADERSHIP & ACTIVITIES

Supplemental Instruction Leader – Data Structures & Algorithms

Sept 2025 – Present

New York Institute of Technology

New York, NY

- Lead weekly sessions for 5+ students covering advanced data structures, algorithm complexity, and problem-solving techniques in Java
- Develop learning materials including code examples, visual diagrams, and practice problems for core CS concepts
- Mentor students in debugging, code optimization, technical interview prep, and Big O notation analysis