VINCENT JIANG

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EDUCATION

Cornell University — *Bachelor of Science in Computer Science* Ithaca, NY | Expected: May 2025

- GPA: 3.91
- Relevant Coursework: Web Development (TypeScript), Backend Development (Python), Functional Programming (OCaml), Computer System Organization and Programming (C), Machine Learning (Python), Systems Engineering Project (Python), Algorithms, Object-Oriented Programming & Data Structures (Java)

SKILLS

Programming Languages: Java, Python, C, C++, JavaScript, TypeScript, HTML/CSS, SQL, OCaml
Technologies and Frameworks: Git, React, jQuery, Jest, Node.js, Flask, Docker

EXPERIENCE

Software Engineer Intern — *Yoomi* Ithaca, NY | Aug 2022 — Present

- Refactor and develop code in TypeScript responsible for motion-tracking behavior, rendering logic, and animations on HTML5 Canvas to provide an interactive, gamified experience for in-patients in physical therapy during exercise
- Design robust test suites using Jest to ensure drawing from interpreted on-screen objects from camera (OpenCV) are accurate, efficient, and scalable to new types of animations and user movements

Software Engineer — *Cornell Cup Robotics* Ithaca, NY | Feb 2022 — Present

- Translate user speech inputs to text using machine learning and natural language processing as part of the CS Chatbot team for the C1C0 (an R2-D2-inspired robot) project
- Reduce user speech-to-text translation errors by 22% by implementing algorithms using Python, including Levenshtein distance, a metric for word similarity
- Integrate facial recognition features and commands into the C1C0 Chatbot user interface, ensure program correctness through regression and unit testing, and implement APIs to fetch data upon user speech input

Tutor and Course Consultant — *Cornell University* Ithaca, NY | Jan 2022 — Jan 2023

- Fostered collaborative environments and engaging learning experiences for students as part of the Engineering Learning Initiatives (ELI) program at Cornell Engineering
- Assisted 50+ students in Object-Oriented Programming & Data Structures and Multivariable Calculus for Engineers
- Excelled in facilitating engaging discussion classes and enhancing student understanding of course materials, software development tools (Git, GitHub, IntelliJ IDEA), and best programming practices

PROJECTS

Portfolio — *JavaScript, HTML/CSS, jQuery*

Invited — *Python, Flask, SQLAlchemy, SQLite, Docker, Marshmallow* Apr 2023 — May 2023

- Developed backend application with Python for iOS frontend as part of the Cornell AppDev hackathon (awarded Best Backend)
- Implemented RESTful API, enabling user registration, authentication, authorization, and CRUD operations on users and events
- Leveraged SQLAlchemy ORM to handle data persistence, design database schemas, and establish model relationships, along with Marshmallow for input validation and serialization to ensure data integrity and consistent API responses

Pac-Camel — *OCaml, SDL* Sep 2022 — Dec 2022

- Developed a Pac-Man inspired game featuring interactive controls, level and map generation, and power-up items
- Managed a team of four and delegated project tasks by clearly defining each team member's role and responsibilities
- Designed and implemented various game features including efficient map generation algorithms, rendering and event-handling logic through SDL, and a user-friendly GUI using the Bogue OCaml library

Towers of Hanoi — *JavaScript, HTML/CSS, React.js, Three.js, Firebase* Jul 2022 — Aug 2022

- Web application and game based on the Towers of Hanoi math puzzle, where users follow a set of rules to move disks to towers
- Designed and programmed responsive user interface, dynamic component behavior, and 3D animations and rendering through React.js, react-three/fiber, use-gesture, and react-spring
- Employed OAuth 2.0 authentication to ensure secure user login and added database to store and fetch user game data efficiently using Cloud Firestore
- Implemented heuristic algorithms to optimize solution animations to puzzle constraints: Standard, Adjacent, and Bicolor

Terrain Map — *Java, Swing, AWT* Jun 2022 — Jul 2022

- 3D visualization tool for popular stochastic algorithms for fractal landscape generation that model Brownian motion, including Midpoint Displacement, Diamond Square, and Perlin Noise

ACCOMPLISHMENTS

3x Cornell Engineering Dean's List Recipient Aug 2021 — Present
2x American Invitational Mathematics Examination (AIME) Qualifier Apr 2020 — Apr 2021

- Scored in the top 5% of examinees for the American Mathematics Competitions (AMC 12)