

# Xiaomin Liu

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## Education

### New York University

May 2026

Bachelor of Arts in Computer Science (with Honors) and Mathematics

GPA: 3.8

Coursework: Data Structures, Algorithms, Operating Systems, Programming Languages (Graduate level), Parallel Computing

## Experience

### New York University High Speed Research Network Lab

Aug 2024 – Present

Software Engineer — CoreLink Server Team

New York, NY

- Implementing features and services in Rust for Corelink, a low-latency networking framework for research applications

### New York University Courant Institute

Aug 2024 – Present

Teaching Assistant

New York, NY

- Conducting weekly office hours and grading assessments for Basic Algorithms (CSCI-UA 310) supporting over 50 students

### Niantic

May 2024 – Aug 2024

Software Engineer Intern — Pokémon GO: Maps/Explore/AR Team

Bellevue, WA

- Processed coastline data with BigQuery to define an ocean dataset, eliminating 8 billion (40% total) Pokémon spawnpoints
- Reduced weather API calls by 78% by implementing logic in Java to invalidate ocean weather cells, saving \$280k annually
- Developed a distributed quadtree merging algorithm to normalize S2 cells in Apache Beam, compressing geodata by 99.1%
- Integrated Sentry into Pokémon GO's client using C#, .NET and Unity to monitor unhandled exceptions and crashes, capturing 1.4M daily errors alongside relevant metadata for improved diagnostics

### New York University Center on Race, Inequality, and the Law

Mar 2024 – May 2024

Research Assistant

New York, NY

- Automated legislative bill searching and tracking process to Google Sheets, saving 10+ weekly hours of manual searches
- Built a Legiscan API client in Python and pandas to increase tracked bills by 175% and provide real-time status updates

### Vantage.sh

July 2023 – Oct 2023

Software Engineer Intern

New York, NY

- Launched [Azure Active Resources](#), a Ruby on Rails feature filtering Azure spending by resource metadata for 20,000 users
- Designed a Temporal Workflow to concurrently fetch 100,000+ records of resource metadata from 30 Azure services
- Integrated multi-series line graphs using HTML and JavaScript to visualize related resource costs over 30-day periods

## Projects

### S2shell | Rust, C++

- Ported Google's S2 Geometry Library to Rust for robust computational geometry and spacial indexing on the sphere
- Implemented core S2 data structures and algorithms including S2Point, S2CellId, S2Cell, and S2Region
- Created a custom linear algebra module supporting 2D/3D vector operations like dot products, cross products, etc.

### Multiplayer Chess | Python, Flask, JavaScript, WebSocket, SQL (PostgreSQL), HTML, CSS, Docker

- Led a team of 3 in developing an online multiplayer chess website where users can play against each other via links
- Implemented real-time board updates, a dynamic move history table, and a chat feature using JavaScript and HTML
- Challenges included verifying moves, handling spectators joining mid-game, and asynchronous move broadcasting

## Skills

**Languages:** Python, Rust, Java, C, C++, C#, JavaScript, TypeScript, Ruby, SQL, HTML, Bash, CSS

**Technologies:** Pandas, NumPy, Unity, .NET, Django, Flask, Docker, Azure, GCP (BigQuery, Dataflow, GCS), Sentry, Linux

**Concepts:** System Design, Computer Networking, Distributed Systems, Compilers, REST APIs, Backend, Unit Testing