

# Xiaomin Liu

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## Education

### New York University

Bachelor of Arts in Computer Science (with Honors)

Coursework: Operating Systems, Programming Languages (Grad level), Database Systems (Grad level), Parallel Computing

May 2026

GPA: 3.8

## Experience

### NYU High Speed Research Network Lab

Research Assistant (Corelink Server)

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

Sep 2024 – Present

New York, NY

### NYU Courant Institute of Mathematical Sciences

Teaching Assistant

- Conducting weekly office hours and grading assessments for Basic Algorithms (CSCI-UA 310), supporting 100+ students

Sep 2024 – Present

New York, NY

### Niantic

Software Engineering Intern (Pokemon GO: Maps/Explore/AR Team)

- Processed coastline data with BigQuery to define an ocean dataset, eliminating 8 billion (40% total) Pokemon 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 Pokemon GO's client using C#, .NET and Unity to monitor unhandled exceptions and crashes

May 2024 – Aug 2024

Bellevue, WA

### NYU Center on Race, Inequality, and the Law

Research Assistant

- Automated the legislative bill searching process to Google Sheets, saving lawyers 10+ hours a week on manual searches
- Built a Legiscan API client in Python and pandas to increase tracked bills by 175% and provide accurate bill status updates

Mar 2024 – May 2024

New York, NY

### Vantage.sh

Software Engineering Intern

- 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

July 2023 – Oct 2023

New York, NY

## 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:** Computer Networking, Distributed Systems, Computer, Backend, Compilers, Unit Testing, Web Development