

EDUCATION

University of Minnesota-Twin Cities

Sep. 2022-Dec. 2025

*Bachelor of Science, Computer Science**Minneapolis, MN*

- **Cumulative GPA:** 3.7/4.0 [Dean's List Award: Spring 2025, Fall 2024, Spring 2024, Fall 2023, Spring 2023]
- **Coursework:** DSA, Software Engineering, Database Systems, Operating Systems, Internet Programming, AI, ML Essentials

EXPERIENCE

Undergraduate Teaching Assistant, University of Minnesota

Sep. 2023-Present

- Delivered one-on-one and lab support to 100+ students per semester across **Python, Java, and computational linear algebra**, improving student confidence and academic performance across **3+ sections**.
- Designed lab exercises and statistical analyses using **Google Colab, NumPy, and matplotlib**, supporting instructional delivery for 300+ assignment submissions.
- Automated **600+ assessments** grading using **Gradescope** and **Bash**, enabling faster turnaround and feedback cycles by **20-30%**.

Test Engineering Intern, IDEaS Revenue Solutions

May 2025-Aug. 2025

- Built RESTful APIs in **Java** for 7+ **AWS-hosted microservices** (e.g., pricing, analytics), integrating **SQL/MongoDB** validations and **Datadog**-based telemetry; authored JUnit and Postman test suites for automation.
- Participated in **Agile** Software Development Life Cycle processes, resolving 20+ production issues through root-cause analysis and regression testing, boosting service reliability by 30%.
- Enhanced **CI/CD** pipelines via **GitHub Actions** and **Terraform**; integrated dashboards using **Datadog** and **AWS CloudWatch** to monitor 25+ deployments and infrastructure.

Software Design Engineer Intern, KEB America, Inc.

May 2024-Aug. 2024

- Refactored 1,500+ lines of monolithic **Python 2.0** code to modular client-server architecture in **Python 3.12**, boosting maintainability and testability.
- Designed black-box and integration test suites in **Python** and **C#** for 10+ embedded features; increased automated test coverage by 40% and reduced manual QA effort by 25%.
- Collaborated with cross-functional teams using **GitLab, Jira, and Confluence** to track and resolve 50+ development and QA tickets across software lifecycle stages.

Residence Halls Office Assistant, University of Minnesota

Jan. 2023-May 2025

- Managed check-ins/outs, key tracking, and front-desk operations for **700+ residents** while responding to daily service needs.
- Maintained organized records for **100+ lost-and-found cases** and **1000+ item loans** through spreadsheets and check-out databases.

Orientation Leader, University of Minnesota

Apr. 2023-Sep. 2023

- Led daily orientation groups of **15–20 new students** through campus tours, presentations, and community-building activities.
- Helped **7,000+ students** by supporting orientation events and assisted **350+ volunteers** with training, coordination, and support.

PROJECTS

Distributed Cache System | Python, Git

Aug. 2025 - Present

- Implemented a production-grade distributed caching system using **consistent hashing** for automatic data distribution across nodes, achieving **1.07M+ hash ring operations/second** with **0.0009ms latency** and **23% data movement** when scaling.
- Built HTTP-based cache nodes with RESTful APIs, TTL support, and thread-safe in-memory storage, delivering 649 writes/second and 674 reads/second with **100% hit rate** for cached data.
- Designed smart client library with automatic request routing, **fault tolerance**, and **replication support**; demonstrated **node failure recovery** and **graceful degradation** in multi-node cluster scenarios across **5 comprehensive demo workflows**.

Drone Delivery System Simulation | C++, Docker, Git

Oct. 2024 - Dec. 2024

- Developed a modular drone logistics system in **C++** supporting multi-agent coordination (drones, helicopters, humans, packages), built on **Factory** and **Singleton** design patterns using Dijkstra's algorithm for route optimization and dynamic scheduling.
- Implemented a smart battery scheduling system that reduced idle time and improved uptime in 20+ delivery scenarios.
- Led a **4-member Agile** team across **6 sprints** via **Jira**, incorporating Google C++ standards, 10+ code reviews, and Google Test (gtest) for unit testing.

SKILLS

Programming Languages: Java, Python, C, Go, C++, C#, SQL, Bash**Systems & Cloud:** Docker, Linux/Unix, AWS (EC2, S3, Lambda, SNS, Glue, Athena, Kafka), Terraform, GitHub Actions, Git**Databases & Web:** MySQL, MongoDB, REST APIs, JavaScript, HTML/CSS**ML/AI:** TensorFlow, PyTorch, scikit-learn, NumPy, Pandas, matplotlib**QA, Practices & Tools:** JUnit, Postman, Selenium, TestNG, CI/CD, Agile, TDD, DevOps, Telemetry, Datadog, Jira

EXTRA-CURRICULAR

Code The Gap, UMN-Twin Cities

Jan. 2023-Present

*Treasurer**Minneapolis, MN*

- Managed budgets and operations enabling 30+ volunteers to teach Python to K–12 students, expanding outreach to 3 new schools.