

Wayne Zhou

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EDUCATION

Northeastern University - Master of Science in Computer Science (GPA 4.0)

Expected Graduation - Dec 2025

University of Washington - Bachelor of Arts in Architectural Design

WORK EXPERIENCE

American Family Insurance

May 2025 - Present

Application Developer Intern | *Full-stack Development, Cloud Platforms, API Integration*

- Developed a **full-stack** insurance form management application using **Java Spring Boot** and **React.js**, serving 20k+ risk classes
- Engineered **RESTful APIs** to integrate seamlessly with the enterprise insurance quote system, reducing 85% policy lookup time
- Built **scalable data persistence** using **AWS DynamoDB** for structured policy data and S3 for storing dynamic objects
- Implemented SSO and access authorization using **Azure Entra ID** and **GCP Apigee API** management
- Automated infrastructure provisioning via **AWS CloudFormation** and deployed containerized microservices to **AWS EKS**

Earth & Space Research (ESR)

Sep 2024 - Dec 2024

Software Engineer Intern | *Machine Learning System, Python, Data Engineering, TensorFlow*

- Developed machine learning models to forecast sea ice concentrations in the Arctic Ocean. Improved predictive accuracy by 64%
- Engineered robust **data preprocessing pipelines** for multi-source climate datasets, reducing processing time by 50%
- Optimized model performance through **fine-tuning** and **cross-validation**, resulting in a 30% reduction in prediction error
- Visualized geospatial data and model predictions using **Matplotlib** and Cartopy for research presentations and publications

Beam Group Inc.

May 2024 - Aug 2024

Software Engineer Intern | *Full-Stack Development, Cloud Infrastructure, DevOps*

- Developed an end-to-end **web application** for employment analytics, enabling users to make decisions 35% faster
- Built a responsive **React.js** frontend and RESTful APIs using **FastAPI**, achieving p99 response times below 100ms
- Automated a **CI/CD** pipeline with **GitHub Actions** and **AWS** (EC2, S3, CloudWatch) to streamline deployments
- Led technical discussions in **Agile** team meetings and contributed to design documentation following **SDLC** methodologies

PROJECTS & AWARDS

Ski Resort Lift Tracking System | *Distributed Systems, Cloud Infrastructure, Java, Database*

- Engineered a **distributed** tracking system for ski resorts processing 200K+ daily lift rides using **Java**, **AWS EC2**, and **RabbitMQ**
- Designed a scalable architecture with **load balancing** across multiple EC2 instances, reducing message queue backlog by 90%
- Built data persistence layer using **DynamoDB** database supporting complex analytical queries with <40 ms response time

Real-time Environmental Sensing Platform | *IoT Systems, Cloud, C++, Database*

- Developed a real-time environmental **IoT** monitoring system using **Arduino** (C++) with multiple sensors
- Built a scalable **serverless** data pipeline on **AWS** (API Gateway → Lambda → DynamoDB) for processing 10,000+ daily sensor readings with sub-second latency
- Developed a web dashboard using **React.js** to visualize real-time sensor data, enabling instant environmental insights and alerts

2x Hackathon Winner | *Northeastern University Hackathon (2023 & 2024)*

Emerging Leader Award | *Northeastern University Graduate Leadership Institute (2024)*

SKILLS

Programming Languages: Python, Java, C/C++, JavaScript/TypeScript, SQL, HTML/CSS

Frameworks: FastAPI, Flask, React.js, Node.js, Spring Boot

Cloud & DevOps: AWS ([AWS Certified Practitioner](#)), Azure, Docker, Git, CI/CD

Data Science & Databases: Pandas, NumPy, Matplotlib, PostgreSQL, MongoDB, DynamoDB

Machine Learning: PyTorch, TensorFlow, Keras, Scikit-Learn