

# Wayne Zhou

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## EDUCATION

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**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

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**American Family Insurance**

May 2025 - Present

**Application Developer Intern** | *Backend Development, Cloud Platforms, API Integration*

- Built **insurance quote systems** using **Java Spring Boot** and **React.js**, serving 20k+ risk classes and 5k+ external users
- Engineered **RESTful web services** with **DynamoDB** for data persistence and **S3** for file storage, reducing 85% lookup time
- Implemented authentication and authorization using **Azure Entra ID** and **GCP Apigee API** management
- Automated infrastructure provisioning using **AWS CloudFormation** and deployed containerized microservices to **AWS EKS** with **Docker** and **Kubernetes**

**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

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**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

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**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