

# Abel Lu

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## OBJECTIVE

Undergraduate computer science student seeking a summer 2024 internship in software engineering, site reliability engineering, DevOps, and related fields. Looking to leverage past experience in full-stack development, cloud, and container orchestration technologies to solve company problems and continue my growth as an engineer.

## EDUCATION

### North Carolina State University

Bachelor of Science in Computer Science

Expected Dec 2025

GPA: 4.00/4.00

**Coursework:** Software Development Fundamentals, C / Software Tools, Data Structures and Algorithms

**Campus Engagement:** Python Teaching Assistant, Linux Users' Group, Society of Asian Scientists and Engineers

## SKILLS

**Languages:** *Proficient* - Python, JavaScript, HTML/CSS, Java, SQL / *Familiar* - C, C#, Go, Rust, R

**Libraries/Tools:** Docker, Kubernetes, React.js, Java Spring, Redux, Prometheus, Grafana, Git, GitHub, BitBucket

**Interests:** Cloud, DevOps, Web Development, Container Orchestration, Networking, Linux, Agile Development

## WORK EXPERIENCE

### Platform Engineering Intern

Renaissance Computing Institute (RENCI)

Chapel Hill, North Carolina

Aug 2023 - Present

- Develop a **full-stack** internal developer platform, providing self-service capabilities and deployment automation to over **90% of RENCi's** research software engineers
- Configure Python scripts to automate data fetching for **100+ VMs, DNS records, and namespaces**
- Architect and administer a Kubernetes cluster with Docker runtimes to serve **60+ internal users**
- Deploy **3 Flask microservices** and **1 SQL database pod** on RENCi's internal cloud

### Software Engineering Intern

Lowe's Companies, Inc.

Charlotte, North Carolina

May 2023 - Aug 2023

- **Reduced downtime** by an average of **1.5 hours** per unit for **70000+ POS units** during updates by developing a centralized control plane with React and Redux
- Constructed a Grafana **metrics dashboard** for a Java Spring **backend API**, leading to a **30% faster response time** to major issues, including performance bottlenecks
- Used **Docker Compose** and the Prometheus, Grafana, and Elasticsearch images to configure a standardized local development environment for a **20+ member team**

## PROJECT EXPERIENCE

### Cloud-Hosted Discord Bot - [github.com/azn-abel/OsuBot](https://github.com/azn-abel/OsuBot)

May 2021 - Present

- Developed a chatbot that shows the scores and ranking of **over 19.3 million active Osu! players**
- Deployed bot in **3 load-balanced shards** on Discord's distributed Linux servers
- Leveraged asynchronous programming techniques to **improve API call efficiency** by **95%**

### Music Visualizer Web Application - [github.com/azn-abel/mikus-neon-world](https://github.com/azn-abel/mikus-neon-world)

May 2023 - Jul 2023

- **Led the 4-month development** of an online music player with HTML/CSS and JavaScript
- Implemented visual layering of **13 custom assets** with a Three.js orthographic camera
- Leveraging the Three.js asynchronous loader to **reduce texture loading time by 70%**
- Created and **assigned 50+ tickets** for an agile team of developers and visual artists

### Data Analysis + Visualization w/ Python - [github.com/azn-abel/ramen-ratings](https://github.com/azn-abel/ramen-ratings)

May 2023 - May 2023

- **Analyzed 2500+ rows** of Kaggle's open-source ramen data using Python and Jupyter Notebooks
- Assessed the quality of ramen from **30+ countries** over a span of 10 years
- Cleaned data with **pandas** and **numpy**, created plots and histograms with **matplotlib**