NATHANIEL WETZEL

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EDUCATION

Northeastern University Boston, MA
Bachelor of Science in Computer Science *Expected:* **May 2027** | *GPA:* 3.8/4.0

Coursework Algorithms and Data, Object-Oriented Design, Computer Systems, Cloud Computing, Programming with C++, Intro to Computer Vision, Foundations of Cybersecurity

Honors Amazon Future Engineer, Elks Most Valuable Student, Dean's List

EXPERIENCE

Amazon Jun. 2025 – Sep. 2025
Software Development Engineer Intern *Seattle, WA*

· Developed a **Java** service validating **10M+ transactions/month** at Amazon's receivables API entrypoint.
· Eliminated all invalid custom billing document attributes, scaling accuracy across **$10B+/year** in traffic.
· Designed a config framework to onboard new attributes, adopted by issuers like **Alexa** and **Prime Video**.
· Improved validation performance by **60%** with config retrieval integration and runtime caching of attributes.

Wolters Kluwer Jan. 2025 – Jun. 2025
Software Engineer Intern *Waltham, MA*

· Migrated a clinical **NLP** dosing app to a **Python** microservice on **AKS**, unblocking downstream projects.
· Containerized the service with **Docker** to process **70MB+** of dosing data, delivering deployment portability.
· Orchestrated remediation for **100+ Linux hosts** by developing a patching tool with **Ansible** and **Jenkins**.

Amazon May 2024 – Aug. 2024
Software Development Engineer Intern *Seattle, WA*

· Implemented a scalable metric aggregation service ensuring SLA compliance for **100K+ invoices/month**.
· Engineered an **AWS Lambda** in **Java** to automate **Elasticsearch** metric propagation into **CloudWatch**.
· Deployed an **IaC** module w/ **AWS CDK** to provision services in **VPC**, leveraging **Dagger** for dependencies.

PROJECTS

x64 Compiler Sep. 2025 – Present

· Building a compiler in **C++** for a custom expression language targeting direct **x86-64** assembly.
· Designing a recursive-descent parser with code generation for variables, arithmetic, and semantic validation.
· Integrating **NASM/GCC/LD** toolchains to assemble and link emitted code into static **ELF** executables.

NDVI Compare Apr. 2025 – Jun. 2025

· Built a **FastAPI** backend to detect deforestation from satellite imagery using **Google Earth Engine**.
· Processed multi-temporal satellite data, highlighting **hundreds of thousands** of acres of vegetation change.
· Containerized service with **Docker**, enabling async processing, cloud masking, and secure secret handling.

TECHNICAL SKILLS

Languages Java, Python, C/C++, TypeScript/JavaScript, Racket, SQL (Postgres)
Technologies Git, Linux, Docker, Kubernetes, Terraform, Ansible, Jenkins, AWS, Azure, Dagger
Concepts Software Engineering, Backend, Fullstack, Cloud Computing, DevOps, CI/CD Pipelines, NLP, Computer Vision, API Development, Infrastructure as Code (IaC), Research