

SKILLS

- **Languages:** Python, Go, Javascript, Typescript, Java, MySQL, PostgreSQL, C
- **Frameworks:** Next.js, React.js, Node.js, Express.js, Angular.js, Flask, Cypress, TailwindCSS
- **Architecture:** Distributed Systems, Microservices, Event-Driven Architecture, Cloud-Native Applications, Observability
- **Tools:** Git, Docker, Kubernetes, Kafka, RabbitMQ, Redis, Neo4J, Prometheus, Thanos, Grafana, Instana, LogDNA,
- **Cloud Services:** EC2, S3, Lambda, SageMaker, Firebase, Compute Engine, Cloud Run, BigQuery, PromQL, OpenShift K8
- **Certifications:** [IBM Kubernetes/OpenShift Essentials](#) | [IBM Blockchain Essentials](#) | [IBM Developer Jumpstart](#) | [IBM Design Thinking](#)

WORK EXPERIENCE

IBM

Software Engineer

Aug 2023 - Current
Research Triangle Park, NC

[Hybrid Cloud Mesh Team](#)

- Develop and refine **observability microservices** for IBM Hybrid Cloud Mesh, integrating **Prometheus** and **Thanos** for large-scale metric ingestion, long-term storage, and real-time insights. Enhance these insight capabilities by enriching Prometheus metrics with **mesh-aware labels**, enabling a contextual, unified view of mesh resources across on-prem and multi-cloud environments via Skupper, improving end-to-end system visibility and observability.
- Led the implementation of on-demand, resource-level **cache miss synchronization** and refactored observability microservice data models into a high-performance caching framework, replacing cadence-driven synchronization and heavy external requests. These improvements validated and enriched metrics before ingestion, eliminated stale tenant and resource data, reduced reliance on outdated kafka events, and significantly lowered **memory, disk usage, and system strain**, especially at **high scale**.
- Developed **E2E** and **infra-automation test frameworks** leveraged by the UI and other teams **daily**—enabling mock setups, resource creation, automated querying, and streamlining testing workflows that support reliable observability performance
- Increased code coverage for all four observability microservices to **80%** prior to Hybrid Cloud GA release and additionally served as the primary point of contact for **all security vulnerabilities** across microservices to handle/resolve prior to release(s).

IBM

Software Engineer Intern |

May 2022 - Sep 2022
Remote

[Cloud Expert Labs Team](#)

- Designed and implemented secure, branded login pages using **TypeScript**, **Next.js**, and **Node.js**, integrating with IBM Cloud services and adhering to IBM Carbon Design standards to enhance user authentication and security.
- Implemented secure **REST APIs** with **Express**, enabling end to end user authentication flows, including **password resets**, **email notifications**, **multi-factor authentication**, adhering and enhancing to IBM system security standards
- Automated retailer onboarding **workflows** with **Python**, reducing manual data entry time by over **75%**, improving operational efficiency and accelerating time-to-market for new clients.
- **Improved product reliability** by developing and deploying **Cypress E2E tests** from scratch into our **CI/CD pipeline**, reducing deployment bugs and ensuring seamless delivery of new features.

Leidos

Software Engineer Intern

June 2021 - Dec 2021
Reston, VA

[Annex Intelligence Division](#)

- Collaborated with the **Annex Intelligence** team to design, develop, and deploy web and mobile applications for the **US NCTC**, supporting critical counter-terrorism initiatives by enhancing operational capabilities and data accessibility.
- Developed key features for web portals using **Vue.js**, **Node.js**, **ElasticSearch**, and **AWS S3**, improving data processing efficiency and enhancing the user experience for intelligence analysts.
- **Streamlined** CI/CD pipelines using **Docker**, **GitLab**, and **SonarQube**, reducing build and deployment times by **30%** and enhancing software quality through automated API testing and integration with **Postman**.
- **Led cross-functional integration efforts**, coordinating with various teams to ensure seamless application deployment, resulting in improved operational efficiency for national security efforts.

RECENT PROJECTS

YTRecap [Github](#)

March 2023

[YTRecap.org](#) is a web app built using Python Flask that can summarize any YouTube video by parsing the video for its closed captions and passing them to an NLP large language model

GradeMyAid [Github](#)

December 2022

[GradeMyAid.com](#) is a financial aid tool built using Next.js and the [CollegeScorecardAPI](#) that offers the ability to compare financial aid packages from varying universities to understand which FAFSA offers are the most appealing.

Portfolio [Github](#)

[nicholastillmann.com](#) is my personal portfolio website, built with a focus on clean design and nice UI/UX. It showcases recent projects, including YTRecap, GradeMyAid, and other WIPs while highlighting my personal development projects

EDUCATION

University of Pittsburgh

May 2023

Bachelor of Computer Science

Pittsburgh, PA

Coursework: Algorithmic Implementation, Data Structures, Discrete Structures, Assembly Language, Intermediate Programming, Computer Organization, Software Engineering, Web-Development, Artificial Intelligence, Systems Software, Formal Methods in Computing, Operating System, Database Management Systems, Quality Assurance, Big Ideas in Computing

Honors: Cum Laude