Nicholas Tillmann
ntillmann1439@gmail.com   **Portfolio | Github | Linkedin**

SKILLS

- **Languages:** Python, Go, JavaScript, TypeScript, Java, SQL
- **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, Instana, LogDNA, Redis, Neo4J, LLMs
  Cloud Services: AWS (EC2, S3, Lambda, SageMaker), **GCP** (Compute Engine, Cloud Run, BigQuery), IBM Cloud, OpenShift
- **Other Tools:** Kafka, Redis, WatsonX.ai, PromQL, Cypress, Skupper, Prometheus, Thanos, Grafana, RAG-based AI
- **Certifications:** IBM Enterprise Design Thinking Practitioner | IBM Blockchain Essentials | IBM Developer Jumpstart

WORK EXPERIENCE

IBM   Aug 2023 - Current
Software Engineer   *Research Triangle Park, NC*
Hybrid Cloud Mesh Team
- Designed and launched an **AI-infused** Retrieval-Augmented Generation (RAG) chatbot using **IBM WatsonX.ai** including custom **vector search** over Hybrid Cloud Mesh documentation, providing engineers with contextual, conversational troubleshooting assistance and accelerating issue resolution.
- Developed and refined observability microservices for Hybrid Cloud Mesh, integrating **Prometheus** and **Thanos** for large-scale metric ingestion, long-term storage, and real-time insights. These metrics are enriched with product specific data enabling a contextual, unified topological view of mesh resources across on-prem and multi-cloud environments via **Skupper**.
- Configured and managed **Prometheus** agents for remote writing metrics to **middleware**, establishing the flow log pipelines from metric scraping to enrichment up until long-term storage in Thanos, with **Grafana** used for visualizing these queries.
- Increased code coverage of observability microservices to **80%** and wrote end-to-end tests for durability and integration testing, ensuring robust and reliable performance before general availability (GA) release.

IBM   May 2022 - Sep 2022
Software Engineer Intern   *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   June 2021 - Dec 2021
Software Engineer Intern   *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 **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.

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