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

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

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WORK EXPERIENCE

IBM   *Aug 2023 - Current*
Software Engineer   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validated and enriched metrics before ingestion, eliminated stale tenant and resource data, reduced reliance on outdated kafka events, and significantly lowered **memory, disk usage, and system strain**, especially at **high scale**.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   *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 **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

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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