Aaron **Yangello**

STAFF SOFTWARE ENGINEER - DATA & ANALYTICS

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"Staff-level engineer specializing in transforming large, complex datasets into reproducible, scientifically rigorous insights. Experienced in curating terabytes of system data, building scalable pipelines, and developing interactive dashboards to accelerate analysis and decision-making. Proven leader in cross-functional environments, aligning engineering, operations, and stakeholders through data-driven reporting and validation."

Experience

Innovative Defense Technologies
Mt. Laurel, New Jersey

Data Analytics & Insights Platform:
May 2016 - Present

- Designed and led development of the U.S. Navy's primary data analytics & insights platform for the Ship Self Defense System (SSDS), enabling engineers and analysts quantitatively measure performance metrics and evaluate software updateimpact on system functionality **7x faster** than manual baselines, significantly accelerating feedback loops and code validation. *C++, Python, PostgreSQL, TypeScript, Docker, REST APIs*
- Engineered a high-throughput data pipeline that ingests **terabytes of binary system data**, used for statistical analysis and rapid validation of operational readiness across distributed teams. *C++, PostgreSQL, TypeScript*
- Built an internal analysis and visualization dashboard to compare experimental test runs, runtime metrics, and error distributions, enabling analysts to detect regressions and draw insights **8–15x faster** *Java, PostgreSQL*
- Partnered with cross-functional teams (engineering, operations, test, and security) to define analysis requirements, ensuring pipelines delivered scientifically rigorous, actionable insights for both product validation and investigative workflows.

Infrastructure & Data Workflows:

- Designed a lightweight testing framework for data analysis components, using CSV-based mocks to replace full database dependencies; cut validation runtime **12x** and enabled rapid, reproducible regression testing for analytical workflows. *C++, Catch2*
- Developed reusable, parameterized code templates to standardize data processing modules, reducing variability across analyses and **accelerating workflow productivity by 400%**. *Apache FreeMarker*
- Automated generation of release documentation with integrated regression metrics, creating reproducible PDF reports that streamlined verification workflows **6x faster** and cut reporting errors by **35%**. *Java, LaTeX*
- Served as Release Lead for a mission-critical defense analytics system, coordinating test design, secure delivery, and evaluation across 11 major releases in two years with **100% on-time delivery**, while modernizing verification frameworks. *JIRA, Advanced Installer*
- Led a team of 5 engineers to scale reliability and reproducibility of analytical pipelines, introducing workflows that improved throughput and scientific consistency of system evaluations.
- Mentored and coached junior engineers as a People Leader, fostering scientific rigor, reproducibility, and cross-team effectiveness through career development and workflow guidance.

Cloud & Scalable Platforms:

- Virtualized a legacy multi-service tactical system into a fully reproducible cloud-based analytics and development environment, eliminating dependency on fixed hardware labs and enabling distributed teams to build, test, and evaluate software from anywhere. Achieved **orders of magnitude faster iteration** while validating message latency within **0.1% of physical baselines**, ensuring scientific fidelity of results. *vSphere, Nexus, Bash, TCL/TK, MS Azure*
- Engineered and maintained distributed PaaS deployments across classified and unclassified domains, delivering secure, scalable, and reproducible environments for data analysis and experimentation workflows. *Kubernetes, Docker, VMware, ArgoCD, Rancher*

Lockheed Martin
Mt. Laurel, New Jersey

Data Analyst
Nov 2019 - March 2020

- Developed Python automation pipelines to process and analyze large volumes of test data, **improving engineering efficiency by 400%** and accelerating evaluation of complex system requirements. *Python*
- Curated and analyzed high-dimensional system datasets to score requirements and generate reproducible reports, **enabling rapid developer feedback** and providing military stakeholders with rigorous, data-driven certification of system functionality.

Freelance Software Engineer

Contracted on Per Project Basis
2018-Present

- **Liquid Trucking:** Developed a fleet management system integration adapter connecting Trimble fleet maintenance tools with BlackBerry Radar asset tracking to automate, metric collection, report processing, and maintenance schedule synchronization, reducing manual effort and enabling data-driven decisions across the fleet, generating estimated yearly savings of **$1.43M**. *Python, REST API, JWT Auth*
- **PlanetBravo K-12 Technology Education:** Built a Google Sheets plugin for teachers and administrators to automate lesson planning, generate weekly dashboards, and provide multi-school oversight, reducing review time from **6 hours to 1.5 hours** and improving accuracy of administrative reporting. *JavaScript, Google Sheets*
- **Ciocca Automotive:** Implemented a customer-facing web application that automated position tracking and reporting for Chevy Corvette Z06 wait lists via a custom Google Spreadsheet adapter and email interface, streamlining customer interactions and eliminating manual lookup processes. CioccaOrderTracker.com *Node.js, HTML/CSS, JavaScript*

Education

M.S. Computer Science

Georgia Institute of Technology

Specialization: Computing Systems

B.S. Electrical and Computer Engineering

Rowan University

Minor: Computer Science | Concentration: Systems Engineering

Technical Skills

Programming/Scripting Languages	Python, Java, C/C++, JavaScript/TypeScript (React/Next.js), SQL/PostgreSQL, Bash/TCL, REST APIs, HTML/CSS, LaTeX
Developer Tooling & Productivity	Developer workflow automation, unit testing frameworks (Catch2, pytest), CI/CD pipelines (Jenkins, Git), code generation templates, Agile development, Git, JIRA
Data Engineering & Analytics	Data pipeline design, high-throughput data processing, real-time analytics, data visualization, structured reporting
Cloud & Scalable Environments	Containerization (Docker, Kubernetes), Virtualization (VMware, Azure), multi-environment PaaS deployments, cloud-based reproducible development environments
Additional Technical Expertise	Database Management (SQL/PostgreSQL/NoSQL), DevOps, system reliability and reproducibility, cross-team collaboration tools

Projects

Digital Real Estate Assistant (DREA)

A data visualization tool which allows a user to enter personal data and outputs recommendations of real estate listings which would be suitable to the user. The recommendation dashboard includes approachable and intuitive representations of data relevant to the list and location, including resident demographic, income, crime, industry, and resident satisfaction data. Most of this data was collected from government and public real estate associations sources. The resident satisfaction data was derived by scraping NextDoor.com for resident posts and the comments and reactions to those posts. This data was processed by a custom semantic analyzer to achieve a resident satisfaction score for each neighborhood.

Python, NPL, Tableau | See on GitHub | Watch Demo Video

Job Offer Comparison App

Developed an Android application that helps users compare multiple job offers against their current employment to make informed career decisions. The app allows users to input and manage job details, including salary, benefits, and leave, while adjusting figures for cost-of-living differences between locations. It features a customizable comparison system where users assign weights to job factors, enabling personalized rankings and side-by-side evaluations. Data is securely stored using SQLite, ensuring persistence across sessions.

Java, SQLite | See on GitHub

Actress Website

A fully responsive portfolio site to showcase an aspiring actress's headshots, demo reels, resume, and biography with a built in Google Sheets content management integration to allow for rapid content updates.

React/Next.js, Tailwind CSS, JWT auth | See on GitHub | Visit Site

Drone Grocery Delivery Service Simulator

A simulation prototype for a drone-based grocery delivery service, enabling users to create stores, manage inventory, and schedule deliveries. The system includes a client-server architecture with a command line interface for user interactions and a backend server handling business logic and data management. Implemented RESTful APIs to facilitate communication between the client and server, ensuring efficient data exchange. Utilized Docker for containerization, streamlining deployment and testing processes.

Java, SQL, Docker | See on GitHub | Watch Demo Video

Household Appliance Survey

A web application enabling users to submit and manage information about their household appliances. The platform allows users to input appliance details, which are stored in a database, facilitating data collection and analysis. Features various reports, providing valuable insights into appliance trends.

PHP, SQL | See on GitHub

Embedded Battleship

An embedded system implementation of the classic game Battleship, designed for play on a microprocessor. The game features real-time gameplay, physical button controls, and audio feedback for hits and misses.

C/C++ | See on GitHub

Coffee Database Query Tool

Developed a comprehensive graphical user interface (GUI) application for managing a coffee database, offering an intuitive and user-friendly platform for database operations. The application supports a range of functionalities, including adding new coffee entries, editing existing records, deleting outdated information, and performing detailed queries to retrieve specific data. Built using Java, the application employs JDBC to ensure seamless connectivity to the underlying database, enabling efficient data manipulation and retrieval. The interface is designed to accommodate both novice and advanced users, streamlining tasks such as inventory tracking, data analysis, and record updates. This project highlights expertise in database management, GUI design, and backend integration.

Java, SQL | See on GitHub

Underwater Image Color Corrector

A collection of MATLAB scripts that correct the color of underwater images, designed to restore true-to-life colors and improve visual clarity. Due to light absorption and scattering, underwater images often suffer from color distortion, with colors such as red and orange diminishing as depth increases. This project addresses these challenges by implementing efficient algorithms to enhance color accuracy and restore the natural vibrancy of underwater scenes.

MATLAB | See on GitHub