Aaron **Yangello**

Senior Software Engineer

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Experience

Senior Software Engineer II

Mt. Laurel, New Jersey

Innovative Defense Technologies

May 2016 - Present

- Lead team of 5 to develop automated analysis software for U.S. Navy's Ship Self Defense System (SSDS), including system thread and functional use case modeling, test event reconstruction, combat system requirements evaluation, and results reporting. *C++, Java, HTML/CSS, JavaScript, PostgreSQL, SysML, BIRT Reporting, Bash, GIT, Docker*
- Independently developed an SSDS data decoder, which decodes raw binary test data (including system status and messages - typically hundreds of GB at a time) from the SUT and stores it in a database. *C++, PostgreSQL*
- Implemented unit test system for event reconstruction, data extraction, and requirement analysis components of SSDS automated analysis software, which includes CSV substitution of database for unit tests, resulting in a 12x speed up in test time and introducing the ability to retest previously written code. *C++, Catch Test Framework*
- Developed code generation templates which increased development workflow efficiency by roughly 400%. *Apache FreeMarker*
- Fully virtualized Ship Self Defense System software, network, and sim/stim tools to decouple tactical system from lab hardware, enabling the combat system software to be tested and developed exponentially easier and faster than traditional, bare-metal methods. Message latency variations between traditional system and virtualized system were found to be within 0.1% *Virtual machines, Nexus, vSphere, bash/csh, TCL/TK*
- Designed and developed an analysis comparison tool, an application used to compare test results, error reporting, runtime metrics, and analysis comments, extracted from IDT's automated analysis software's database resulting in a 8-15x speedup (depending on complexity) in analysis comparison time. *Java, PostgreSQL*
- Designed and developed a software release documentation generation application, which takes updated release notes and metrics, and generates PDFs required for new software releases, including metrics comparisons to previous releases, which lead to a 6x speedup over manual report creation and an average of 35% fewer typos in the final report. *Java, LaTeX*
- Served as the software release lead for the Aegis Anti-Air Warfare team, whose duties include team task management, test and verification of program functionality, and creation and secure delivery of the software release with 100% on-time and under-budget record over two years and 11 releases. *JIRA, Advanced Installer*
- Currently serve as a People Leader, advocating for a younger engineer and assisting in defining and pursuing his career objectives.
- Security Clearance Level: Secret

Freelance Software Engineer

Contracted on Per Project Basis

2018-Present

- **Liquid Trucking:** Fleet Management System Integration Adapter, integrating a Trimble truck fleet maintenance management tool with BlackBerry Radar's asset location tracking, to automate report processing and sync asset maintenance schedules across platforms, yielding enhanced maintainability and estimated yearly savings of approximately $1.43 million for the company through reduced manual effort and improved data-driven fleet management. *Python, Rest API, JWT*
- **Ciocca Automotive:** Web application for customers to lookup their wait list position for the Chevy Corvette Z06, integrating with a Google Spreadsheet-based wait list managed by Ciocca management through a custom adapter enabling email-address-based queries. CioccaOrderTracker.com *HTML/CSS, JavaScript, JQuery*
- **PlanetBravo K-12 Technology Education:** Technology Teacher's Lesson Planner Google Sheets plugin, featuring automated workbooks for teachers (with school-year and weekly dashboards) and administrators (with multi-school oversight), facilitating seamless communication between them, and resulting in a significant reduction in weekly review time for administrators from 6 hours to 1.5 hours. *JavaScript, Google Sheets*

Test Engineer and Data Analyst

Mt. Laurel, New Jersey

Lockheed Martin/Innovative Defense Technologies

Nov 2019 - March 2020

- Simulate role of a ship's console operator when performing test procedures for US Navy's Aegis Combat System during 4-12 hour testing periods.
- Wrote python scripts to aid in manual analysis of system data to evaluate combat system requirements, improving analysis efficiency of the team by roughly 400%.
- Document findings, report issues found to tactical software developers, review software, and recommend fixes.
- Write system level requirements which reflect desired behavior of the system with an emphasis on testability.

Education

M.S. Computer Science

Georgia Institute of Technology | 2024 | GPA: 3.54/4.0

Specialization: Computing Systems

B.S. Electrical and Computer Engineering

Rowan University | 2018 | GPA: 3.59/4.0

Minor: Computer Science | Concentration: Systems Engineering

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.

EEG ‘Mind Reading Magician’

A unique and interactive method for sharing information about the potential of the field of Brain Computer Interface, demonstrated in a simple card trick. Neuroscan and Stim^2 were used to provide visual stimuli and acquire EEG signals, and a MATLAB script was written to process these signals and display the user’s chosen card.

Environment Aware Street Lamps

An embedded system, programmed in objective C, using UART serial protocol on an MS430 micro-controller, complete with custom printed circuit board, optical motion sensors, and other hardware to demonstrate a smart, energy efficient street lamp that autonomously adjusts light intensity based on time and traffic flow and foot traffic.

FPGA Pipelined Processor

Collaboratively programmed a DE0 FPGA, using Verilog, to perform basic and intermediate *processor instructions* found in modern CPUs and independently implemented *PS/2 keyboard interpreter and a VGA output display*.

‘MemSat’ Cube Satellite - RF Communications

Designed, modeled using Ansys Maxwell’s RF Design Suite, prototyped, and tested using a network analyzer, a quarter wave turnstile antenna and mounting/deployment systems, along with power amplifier and impedance matching network for transmission and reception of data over HAM frequencies, to and from the ground station in Glassboro, NJ.

Rocket Launch Controller

Constructed a controller, using purely discrete and logic electrical components, for a 6 foot rocket which included three safety switches and a ”Triple Go” launch system. When launched, the rocket attained an apogee of over 300 meters.

IEEE Smart Village Micro Grid

Project manager of a 6 member, interdisciplinary engineering team, whose goal is to prototype a single house, solar powered generation module that can plug into an existing micro grid, complete with 2 - 300 watt adjustable solar panels and 1 kWatt hour battery, to support 2 LED light bulbs and a 12v auxiliary, designed to sustain an independent power source in areas too remote to run a main grid line and bringing electricity to underprivileged villages in under developed countries.

Technical Skills

Programming Languages	C/C++, Java, Python, JavaScript (including JQuery), TypeScript, MATLAB, LaTeX
Software Development Methodologies and Tools	Agile Development, Containerization (Docker, Kubernetes), Git, Jenkins
Operating Systems	Linux, Windows
Data Engineering and Analytics	Data Analysis (Statistics, Data Visualization), Data Warehousing, Big Data Technologies (e.g., Hadoop, NoSQL databases)
Cloud and Networking	Cloud Computing (AWS), Networking Fundamentals
Additional Technical Skills	Embedded Systems, Web Development (HTML/CSS, REST APIs), Database Management (SQL, NoSQL), DevOps and Continuous Integration

Favorite Books

Non-Fiction	Fiction
Outlive: The Science and Art of Longevity *by Peter Attia, MD*	The Stormlight Archive series *by Brandon Sanderson*
A Short History of Nearly Everything *by Bill Bryson*	The Gray Man series *by Mark Greaney*
The 7 Habits of Highly Effective People *by Stephen Covey*	Outlander series *by Diana Gabaldon*