
PROFESSIONAL SUMMARY

Senior Software Engineer with over 7 years of experience in backend development and a passion for mentorship and team leadership. I have built and optimized critical systems for public safety, with a strong focus on scalable and sustainable architecture, performance improvements, and innovation. I excel in interdisciplinary collaboration and have a proven track record in effective communications with both technical and non-technical stakeholders.

EDUCATION

HARVARD UNIVERSITY
A.B. in Computer ScienceCambridge, MA
May 2017

Relevant Coursework: Politics of Personal Data, Privacy and Technology, Cyberpolitics, Data Structures and Algorithms, Networks, Programming Languages, Linear Algebra and Real Analysis

SKILLS

Languages: Java, Python **Cloud Technologies:** AWS **Observability:** SignalFX, ELK Stack
Other: Elasticsearch, OpenSearch, MySQL, Redis, Elasticache

EXPERIENCE

MARK43

New York, NY

Senior Software Engineer (IC5)

November 2022 – present

Over my 6 years at Mark43, I led roles in architecting and deploying key features, implementing database schema redesigns, and optimizing critical workflows. I worked closely with the Computer-Aided Dispatch (CAD) Director of Product to define product direction and liaised with state and local police chiefs to enable on-time customer launches.

- Unlocked **\$2.5M in annual recurring revenue** with new locations feature, rolled out with **zero customer downtime**
- Optimized critical workflow run ~2 million times weekly, **reducing response times by 68%** (from 500ms to 160ms)
- Awarded prestigious MVP award for delivering **\$100,000+ in annual savings**
- Upgraded legacy location search with versioned **Elasticsearch** service, enabling zero-downtime data upgrades

In addition to development work, I have been a leader in mentoring junior engineers and interns, facilitating their professional growth from entry-level to senior positions.

- Presented biweekly **company-wide Backend Engineering Sync** on Java fundamentals, architecture design, and testing
- Led triage of major production incidents, root cause analyses and subsequent remediation. Trained engineers on observability tools (**SignalFX, Elasticsearch, Logstash, and Kibana**) and incident response protocols
- Defined and advocated for new Senior GIS Analyst role, successfully interviewing and hiring first employee

Senior Software Engineer (IC4)

April 2021 – November 2022

Software Engineer (IC3)

April 2020 – April 2021

Software Engineer (IC2)

October 2019 – April 2020

Deployments Engineer (IC1)

October 2018 – October 2019

PALANTIR TECHNOLOGIES

New York, NY

Forward Deployed Engineer

July 2017 – July 2018

- Designed and deployed 6TB Elasticsearch financial data integration, with automated updates through SQL pipeline
- Developed integrations to identify and process legal data. Used successfully in criminal prosecutions
- Collaborated on product (awarded US patent) to minimize psychological impact of reviewing sensitive photos

HARVARD SCHOOL OF ENGINEERING AND APPLIED SCIENCES

Cambridge, MA

Research Experience for Undergraduates (REU) Researcher

June – August 2016

- Researched loss of utility of a dataset when anonymized via differential privacy. Analysis done with Python
- Updated Professor Latanya Sweeney's "[theDataMap](#)" project documenting flows of personal data

FEDERAL TRADE COMMISSION (FTC)
Fellow in Technology and Data Governance

Washington, D.C.
June – August 2014

- Inspected security practices of 110 iOS and Android apps with man-in-the-middle software. Presented findings to commission's technology panel and published report in the *Journal of Technology Science*
- Investigated price discrimination, algorithmic bias, and privacy vulnerabilities of a popular social networking site
- Collaborated with CTO Latanya Sweeney to define future direction of the commission's tech investigations

ADDITIONAL EXPERIENCE

PIPER LEARNING
Software Engineer, Consultant

Remote
July 2021 – July 2023

- Integrated Google OAuth and Google Classroom API into new web product used by teachers to teach students about computer science and electrical engineering through gameplay
- Migrated legacy software to newest Raspberry Pi OS and produced and tested disk image for flagship product
- Resolved major bug identified through rigorous and methodical testing of each detail of legacy codebase

CODE IN PLACE, STANFORD UNIVERSITY
Volunteer Section Leader

Remote
April – May 2021

- Prepared weekly section based on CS106A (introductory Stanford coding course) material to supplement course lectures
- Mentored eight students on fundamentals of computer programming in Python and held weekly office hours

CYBER CRIMES CENTER (C3), HOMELAND SECURITY INVESTIGATIONS
Researcher

Washington, D.C.
October 2016 – May 2017

- Presented research on the re-identification of sellers of illicit goods in darknet markets with photo Exif metadata
- Collaborated with special agents to analyze darknet data to investigate and slow illicit activity online

PUBLICATIONS

UNITED STATES PATENT, US20230037544A1
Co-inventor, "Image analysis interface"

March 2024

Invention automates image categorization by generating a hash for each image, comparing it to hashes of known images, and assigning labels for organized storage. A graphical user interface allows users to manage these image collections.

MEDIUM
"Illuminating the Dark Web: searching for geotags in darknet markets"

September 2016

Study on geolocation metadata prevalence in darknet markets, conducted on 1.6TB archive. Covered by international media including *The Washington Post* and *The Sunday Times*. Featured by Medium and viewed over 25,000 times.

TECHNOLOGY SCIENCE
"Who Knows What About Me? A Survey of Behind the Scenes Personal Data Sharing to Third Parties by Mobile Apps"

October 2015

Mobile app survey on the handling and sharing of sensitive data to third-party domains. Based on FTC research.

PROFESSIONAL DEVELOPMENT

AWS re:Invent, Attendee

Las Vegas, NV
November 2023

Flagship conference for cloud developers. Attended trainings, workshops, and chalk talks.

Esri Developer Summit, Attendee

Palm Springs, CA
March 2022

Conference for GIS developers. In addition to attending technical sessions and workshops, worked with Esri engineers to develop solutions for Mark43's location services.

OTHER SKILLS & INTERESTS

Languages: English (native), Spanish (native)

Interests: Music (guitar, piano, recording), photography, birding, crosswords and cryptics, cycling