

William Alexander

312-617-9666 | williamw.co

Professional Experience

Enable Medicine (acq. by Commure)

Senior Software Engineer

Software Engineer

Remote, New York City

January 2024 – Present

Dec 2021 – Dec 2023

- Developed automated image detection and image splitting code in Python, automating a manual process that previously took hundreds of work hours per month across teams.
- Developed image stitching algorithms, fixing previously 'discarded' coverslips that cost tens of thousands of dollars to reprocess.
- Created data pipelines in AWS (S3, EC2, Batch, Lambda) to automate petascale image transfer and image processing, scaling down data losslessly that normally only lives on supercomputers used by scientists.
- Fixed various intertwined frontend flows in Javascript/Typescript, addressing direct complaints by large pharma clients.
- Wrote various scripts/notebooks with SQL Alchemy ORM to edit millions of rows in PostgreSQL databases and AWS S3, cleaning or migrating data that regularly belonged to 100% of the user base.
- Developed Pubmed Scraper that indexed 35 Million articles, then indexed the embeddings in a Pinecone vector database for LLM usage, enabling GPT-like chat on an entire body of scientific knowledge
- Developed mobile application features from design to full functionality, allowing customers to use substantially more of the company's product on their phones. Framework: Flutter. Language: Dart

California Department of Tax and Fee Administration

Sacramento, CA

Data Engineer

Mar 2020 – Nov 2021

- Consulted directly with state government auditors and testers to scope out software requirements
- Supervised 2 analysts in audits & refunds team, developing new features for emerging tax laws
- Created, tested, and optimized SQL queries impacting millions of taxpayer records.

Vitrix Health (acq. by Johnson & Johnson)

Chicago, IL

Hardware Engineer

Jun 2018 – Mar 2020

- Wrote and edited grants, FDA regulatory applications, API documentation, and scientific papers
- Programmed artificial intelligence image classifier with OpenCV for oral cancer screening with 85% spot detection accuracy, automating a previously manual process by eye
- One of 4 co-authors of patent for using certain wavelengths of light to identify oral disease
- Designed PCBs for filter switching and camera sensor attachment to iPhone
- Developed automation scripts with PyAutoGUI to test stability of new features

Convey Software

Chicago, IL

Founder, Engineer

Jun 2015 – Jun 2018

- Wrote sentiment analysis code which sampled populations and predicted the Chicago Mayoral Election, Brexit and the 2016 U.S. Election
- Sourced first company sales and customer discovery process with campaign managers and local politicians
- Raised over \$30,000 in non-dilutive funding and over \$50,000 in follow on equity funding.

Education

Bachelor of Science in Computer Engineering: *University of Illinois at Urbana Champaign*

High School: *Illinois Math and Science Academy*

Hardware Projects

Power Line Communication

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- Engineered system which could allow a person in one house to communicate with another through their power outlets
- Created modem from idea phase to breadboard to soldered PCB and wrote C code onto ATmega328p microcontrollers to send a signal across a powerline using UART

Biomedical Engineering and Instrumentation

- Simulated design constraints with tools such as LTSpice, LabVIEW and MATLAB.
- Built electrocardiogram with analog to digital convertor circuit based on simulations to read pulse
- Drafted, translated and explained schematics for biology student with no circuit design background until they could rebuild circuit on their own

Awards

Horatio Alger National Scholarship: \$22,000 scholarship granted to 106 students out of 20,000+ national applicants

MIT Enterprise Forum: First place and \$1,500 in business competition

Other Skills

Digital Signal Processing | Biomedical Instrumentation | Circuit Design | FDA 510k Process | Grant Writing | Patent Prosecution | Content Strategy | Interviewing | Proposal writing | HTML/CSS | Technical documentation | Instructional guides | Training | Data Science | Statistics | ETL pipelines | AWS | Machine Learning

Summary:

- 5+ years of experience with coding and debugging software applications
- 4+ years of experience with capturing business requirements and transforming requirements into technical specifications
- 5+ years experience in running or advising early stage (pre-seed to series A) startups