

# Nathaniel Schultz

nate.schultz@outlook.com • +1 (978) 201-2997 • [Github](#) • [Linkedin](#)  
2120 North 11th St • Philadelphia PA, 19122

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## Recent Experience

Zendesk

PHILADELPHIA, PA (REMOTE)

### Senior Data Engineer

Feb '23 – Present

I've been involved with several teams in the foundational engineering department and switched teams as new ones were created during re-orgs. I started on the Stream team, then I moved to the Data Catalog team, and now I'm on the Data Quality team. Here are some recent projects I've worked on:

- Creating a process to extract, monitor, and visualize latency across our data layers.
- Creating a script to generate data quality monitors.
- Creating dashboards in Looker and Datadog to monitor for data loss events and report on our overall data quality. I also maintain our Snowflake-to-Looker ETL in LookerML.
- Creating data completeness checks to monitor for ETL data loss.

I've worked on implementing data quality checks for our ML and LLM projects in Airflow, as well as general platform checks on our Snowflake warehouses.

### Data Engineer

Aug '21 – Jan '23

As part of the foundational engineering department, we are tasked with building common infrastructure for the product engineering teams. My project portfolio included:

- Technical owner of a java microservice that ingests about 50 million kafka messages per day. The main role of the service is to re-index and archive streamed product data.
- AWS EC2 maintenance operations for a data aggregation service (now deprecated)
- Team security champion for owning vulnerability SLAs and security operations.

One benefit that I enjoyed at this role is volunteering with Hack Your Future, where I helped teach refugees how to code.

Bloomberg LP

PRINCETON, NJ

### Acquisition Tech Lead

Dec '19 – Aug '21

As one of the initial members of this team, I gained ownership of implementing the team's technical projects. Our team was responsible for maintaining hundreds of thousands of web crawlers and increasing our coverage with new crawlers. I built platforms to add transparency and improve reporting for Bloomberg's acquisition processes. My project portfolio included:

- A validation workflow with over 70 logic checks to ensure web crawlers are configured properly
- A full stack website to parse web crawler configurations for easier reporting
- A metadata triple store (graph database) to link various acquisition databases together

I also managed our co-op program, which was an important part of our hiring pipeline. I was responsible for organizing our co-op hiring, on-boarding, and events. We had 4 co-ops that rotated biannually, across 4 different teams within the department.

### Data Engineer

Jun '19 – Dec '19

In this role I contributed to several projects, managed our team's web crawler queue and oversaw our team's co-op. I worked on various microservices and a script to migrate and consolidate data from 3 legacy databases. I lead a project with three co-ops during this period to migrate the manual Jira access queue into our internal permission system.

### Data Engineer Co-Op

Apr '18 – Sept '18

As the only co-op at the firm during this period, I was able to gain expertise in each tech stack component. My contributions during this period include web crawler configurations, microservice development, Jira workflow configuration, and productivity data EDA. I enjoyed hosting office activities like chess tournaments and weekly trivia.

## Intern Experience

### Booksmart Touring: Backend Engineer

July '16 – Sept '17

- Webserver Development: Python backend for a web and mobile application used by tour owners and musicians
- Specification Writing: Designed new feature implementations, considering scalability and maintainability. Working with management and user interface teams to meet requirements.
- Data Management: Migrating data safely to new models, preserving data integrity and backwards compatibility whenever possible.

**Chess.com: Software Developer Intern**

March '17 – May '17

- Full Stack Feature Development: Developed and integrated a new feature for a website with millions of users.
- Testing: Found a production bug and developed a fix in python.

**Drexel Hyperloop: Control Systems Software Engineer**

July '16 – Oct '16

- Sensor Data Logging: Implemented a database for live data streaming. Data sources from various engineering systems were monitored for irregularities and performance.
- Requirements Coordination: Determined software needs of multiple teams, totaling over one hundred personnel.

**Thomson Reuters, IP & Science: Data Analyst**

March '16 – Sept '16

- Big Data: Queried a Hadoop cluster to extract bibliometric data for customers. Optimized queries to deliver results timely and inexpensively.
- Data Cleaning: Parsed files into a desired format. Added custom analytic fields.
- Web Scraping: Started data population for new features and data models.

**Armada International Advisors: Full Stack App Developer**

Oct '14 – Oct '15

- IoT Project Development: Independently developed a medical equipment tracking application using Texas Instruments' sensors.
- Web and Mobile App Development: Developed and maintained multiple web and mobile apps.
- Web Scraping for Sales Leads: Collected contact information from potential clients using web crawlers and social media scraping.

**Education**

Drexel University

PHILADELPHIA, PA

**Bachelor of Science in Computer Science**

Sep '14 – Jun '19

Focused on computational mathematics and artificial intelligence / machine learning. During this time I was employed at startups, participated in hackathons, and held membership in industry specific clubs. I've curated a diverse portfolio of programming projects including IoT, full stack mobile and web apps (*hybrid and native*), data analysis, graphics, and web crawlers. My senior project was a machine learning project using TensorFlow.

**Skills**

**Leadership:** Establishing relationships with engineering groups, business stakeholders, and peers. Solid communication and presentation skillset. Intern management and hiring experience. Skilled in vendor management and productivity data analysis.

**Technical:** Software design, workflow design, and data pipeline design. I work regularly with Python and Java. Knowledge of web technologies and best practices relating to web crawling. Web development experience with React-Redux, Flask, SQLAlchemy, and PostgreSQL. CI experience with Docker, Docker-Compose, and Kubernetes. Data analysis experience in Python using Jupyter, Pandas, and Matplotlib.

**Mathematics:** Applied optimization theory to solve industrial design problems. Studied abstract algebra, analysis, statistics, and nonlinear algebra (*among other topics*).

**Technology**

Rubric (from worst to best): Novice, Advanced Beginner, Competent, Proficient, Expert

**Languages:** Python (Expert), Javascript (Proficient), Java (Competent), C# (Novice), C++ (Novice), Go (Novice)

**DevOps:** Kubernetes (Proficient), Docker (Proficient), AWS (Competent), Google Cloud (Competent)

**Backend Frameworks:** VertX (Competent), Flask (Proficient), FastAPI (Proficient), Django (Proficient), Express (Proficient), Spring (Advanced Beginner)

**Frontend Frameworks:** React (Competent), Redux (Novice), Vue.js (Advanced Beginner), Android Native (Novice)

**Databases:** Snowflake (Proficient), Apache Kafka (Proficient), MongoDB (Competent), MS SQL (Competent), MySQL (Competent), PostgreSQL (Competent), HiveQL (Advanced Beginner), Solr (Advanced Beginner), RDF Triplestore / SPARQL (Advanced Beginner)

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