

# Johnathan Brooks

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## SUMMARY

I am a product manager and data scientist with a strong math and statistics background and experience in data science and statistics, SQL database administration and development, and product management. I am particularly passionate about implementing these skills and helping drive new technology in the healthcare space. Modern advancements in deep learning and big data have the capability to revolutionize the patient care and medical technology fields – I want to continue to leverage my experience in the healthcare space and background in data science and data engineering to play an important part on a forward-thinking, diverse team.

## EXPERIENCE

### TRIAGE CONSULTING GROUP

*Product Manager, Data Engineering*

San Francisco, CA

Jul 2017 – Present

- Built, maintained and expanded audit pricing system using T-SQL that is used by the entire organization to identify underpaid hospital claims. The application can price any commercial medical claim in any state for any insurance payer in the country. The pricing system prices millions of claims per week and is the current primary revenue-driver.
- Application was built using T-SQL and Python for data munging and early-stage machine learning. New pricing system is more efficient than prior system by a factor of over 100, bringing in millions for the organization.
- Automated a pricing methodology using T-SQL that once took multiple days to price all volume by hand, now can be priced via three button clicks, saving hundreds of human hours across the organization with over 98% accuracy.
- Owner and developer of the pricing systems that can price all government hospital claims via Medicare's inpatient and outpatient Prospective Payment Systems, built using T-SQL.
- Road-mapped, prioritized and coordinated with offshore and on-site C# developers in an agile Scrum environment to build mission-critical front-end WPF desktop application implemented in the .NET framework.
- Conducted and automated regular performance tuning, including review of indexing, automated defragmentation and schema updates, as well as T-SQL query tuning and QA and scalability review for SQL developers and data analyst.
- Road-mapped the direction of the organization for future data science initiatives which will open new revenue streams via new products, such as automated identification of medical coding errors with embedded Power BI dashboards.
- Developed a data pipeline for cleaning and loading medical fee schedules into production using SSIS and Python.

### BRIDGE THE GAP COLLEGE PREP

*Data Analyst and Database Administrator*

Marin City, CA

Feb 2016 – Present

- Built and launched mission-critical SQL Server database and MS Access GUI used by the entire organization.
- Consulted as a solutions architect in transitioning portions of their IT architecture to the Amazon Web Services (AWS) cloud - focusing on serverless implementations (Lambda, API Gateway) and database/storage solutions (DynamoDB, Redshift, S3). Built out and manage all data warehousing, business intelligence analytics, data entry, and reporting processes.
- Built new reporting processes to automatically generate reports and deployed team dashboards using Tableau.
- Worked with organization founder to launch above database system and data analysis processes and train analysts.
- Designed and created all forms and data collection processes, used by all teachers hired at the organization.

### TRIAGE CONSULTING GROUP

*Senior Consultant and Software Developer*

San Francisco, CA

Oct 2015 – Jul 2017

- Performed contract modeling, revenue cycle consulting, pricing audits, reimbursement analysis, and revenue recovery for Fortune 500 healthcare systems – generating over \$20M in additional annual net revenue for clients.
- Pitched and initiated the first data science initiative at the organization; worked alongside Principals and Managers and developers to prototype and launch first machine learning algorithms on insurance reimbursement.
- Led development and launched an algorithm performance analysis tool which returns raw data output on tool performance and identifies underperforming systems; built out in T-SQL, Python, and MS Excel VBA.
- Elected by management to lead training in advanced database systems, SQL Server and MS Access development.

### BROOKS NETWORKS

*Database Administrator*

Huntington Beach, CA

Jun 2011 – Aug 2014

- Conducted database administration processes, including security, backup, permissions, and database design.
- Developed database applications in SQL Server, MySQL and MS Access - including back end databases for web applications and front end development customizing dashboards using JavaScript and jQuery.
- Installed mission critical servers, LANs, and back end systems for clients, working directly with in-house IT teams.

### OCCIDENTAL COLLEGE, ECONOMICS DEPT

*Research Assistant, Lab Instructor*

Los Angeles, CA

Sep 2012 – Dec 2013

- Led lab instruction for the Advanced Microeconomics and Game Theory courses in the Economics department.
- Conducted quantitative and qualitative research, performing econometric analysis using Python and Stata.
- Used fixed effects, cross-sectional model to examine how changes in Medicaid funding effect infant mortality.

## EDUCATION

**OCCIDENTAL COLLEGE, B.A. DOUBLE MAJOR MATHEMATICS AND ECONOMICS**

Los Angeles, CA

**Honors** magna cum laude, Phi Beta Kappa | **GPA** Major: 3.86, Cumulative: 3.76

Aug 2011 – May 2015

- Conducted independent research in the mathematics department, including projects in combinatorics and numerical analysis. The former examined games played on the finite projective and affine planes and their properties, presented via LaTeX; the latter applied the conjugate gradient squared method to solve fractional differential equations, built using Python and MatLab.
- Varsity team captain for NCAA collegiate baseball team, also worked as academic writing and statistics tutor.

## CERTIFICATIONS

**AMAZON WEB SERVICES:** AWS Certified Solutions Architect – Associate, AWS Certified Developer - Associate

## SKILLS

**LANGUAGES:** Python, SQL (T-SQL, MySQL), NoSQL (MongoDB, DynamoDB), JavaScript, Scala, R, VBA, HTML, CSS

**TOOLS:** Amazon Web Services - AWS (Lambda, API Gateway, RedShift, DynamoDB, EMR), TensorFlow, Jupyter Notebooks, SQL Server, SSIS, Spark, Hadoop (MapReduce, Hive), Azure, Pandas, NLP with NLTK, Power BI, Django, MS Excel, Git, JIRA

**MACHINE LEARNING:** Deep Learning, Time Series, Ensemble Methods, Feature Engineering, Clustering, Classification

**STATISTICS:** Probability Theory, Bayesian Statistics, Multivariate Data Analysis, Econometrics, Game Theory, Regularization