Benjamin Stokes, Ph.D.

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Summary

I am a data-oriented product architect and a team leader with extensive experience leveraging data to identify new business opportunities and operationalize big ideas. Through a high degree of creative persistence, I have successfully tackled extremely difficult problems. Specific areas of prior expertise include:

- Machine learning solutions
- Minimum viable product specification
- Artificial intelligence quality assurance
- Numerical modeling and simulations
- Algorithm development and implementation
- Product evangelism
- Customer engagement platforms
- Strategic problem solving
- International collaboration
- Public Presentation

Skills

Computer Languages: R, Python, Go, C, C++, Bash, LaTeX, Java, FORTRAN, *(whatever else is needed)*

Data Management, Statistical Analysis, and Machine Learning: R, SQL Server, Redshift, Tableau, Excel

Distributed Systems and Virtualization: AWS, Azure, VMware, Hadoop, MapReduce, Spark

Frameworks, Environments, and Operating Systems: Linux, Windows, Azure DevOps, Google Analytics and Adwords

Natural languages: English *(native proficiency)*, Russian *(elementary proficiency)*, French *(beginner)*

Experience

Upshop — Tampa, Florida

VP of Data Science *November 2021 – Current*

Upshop is a SaaS-based solutions provider for retail store operations with a primary focus on the grocery and convenience store sectors. As the VP of Data Science, I oversee a collaboration of data scientists, data engineers, and business analysts that strives support our customer success and sales departments while simultaneously developing new machine learning applications for our forecasting capabilities. Current initiatives include:

- ***Expanding the feature set for the primary demand forecast.*** Forecasting instantaneous demand in the grocery sector is tremendously complex and requires the careful consideration of many endogenous and exogenous factors. To this end, we are continuously searching for additional features we can include in our models. This initiative has led to a cumulative 30% improvement in our demand forecast accuracy.
- ***Developing better for dashboards for internal and external consumption.*** Our clients and our internal teams rely upon the data we provide them to make key business decisions on a daily basis. As such, we strive to bring as much clarity as possible to our dashboards by actively collaborating with our internal and external customers.

nThrive — Layton, Utah

Director of Data Science *December 2019 – November 2021*

nThrive provides end-to-end revenue cycle management for the full spectum of healthcare providers. As the Director of Data Science, I led a team of data scientists, data engineers, and product analysts devoted to introducing machine learning into our product lines both through product enhancements and new product offerings. Key initiatives have included:

- ***Introducing ML-asssisted prioritization into work item queues.*** Revenue cycle management often encounters instances where workload exceeds the available resources. By introducing machine learning into the prioritization process we reduced worker effort by up to 40%
- ***Utilizing machine learning to improve cash-flow projections.*** During the Covid pandemic, our clients struggled to make accurate projections of expected insurance payments. By introducing predictive analytics into the payment projection process, we created an adaptive solution that achieves a 10x reduction in aggregate error.
- ***Engaging in AI evangelism both within the company and with the client base.*** Many in the business community regard ML/AI with a combination of apprehension and awe. Through speaking engagements and roundtables, I endeavored to make this exciting topic more approachable.

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Experience (cont.)

Sorenson Communications — Taylorsville, Utah

Director of Data Science — *July 2018 – December 2019*

Sorenson Communications is the premier provider of video relay ASL interpretation services for the deaf and hard of hearing communities in the United States. As the Director of Data Science, I spearheaded initiatives to introduce machine learning into the company's operational architecture. The most significant of which was:

- ***Upgrading the employee scheduling system.*** Providing professional interpreting services with 24/7 on-demand availability and minimal down-time has always been an extraordinary challenge for Sorenson. By replacing specific business knowledge with machine learning algorithms, my team created a much more adaptively resilient system that significantly improved efficiency while dictating over $100 million in cost outlays.

Smash(ai) — Salt Lake City, Utah

Managing Data Scientist — *July 2016 – July 2018*

Smash(ai) was an artificial intelligence solutions provider. Working on behalf of corporate clients, I oversaw and participated in the creation and implementation of impactful machine learning solutions. These projects included:

- ***Overseeing the development and implementation of an AI-driven customer engagement platform.***
- ***Devising a full-stack validation for a performance marketing optimization platform.***

Finicity Data Services — Murray, Utah

Data Science Consultant — *April 2016 – July 2016*

Finicity was a rapidly expanding fintech company whose core competency was financial account aggregation. During my consulting stint, I spawned some exciting innovations that included:

- ***Building an AI-powered application for categorizing financial transactions.***

University of Utah — Salt Lake City, Utah

Research Faculty — *May 2010 – March 2016*

I was a research collaborator with the Telescope Array (TA) cosmic ray observatory. The TA collaboration developed extensive computational resources resulting in groundbreaking discoveries about the origin and composition of cosmic rays. In addition to supervising graduate and undergraduate researchers, my personal achievements included:

- ***Designing the primary framework for the Monte Carlo simulation of the TA observatory.*** I oversaw the integration of simulations provided by three independent research groups, and personally integrated 40 years worth of legacy code, wrote 20,000 lines of new code, and innovated an entirely novel algorithmic approach. The resulting simulations were unprecedented in detail and accuracy.
- ***Developing a technique for mapping and reducing parallel computations.***
- ***Engaging in international collaboration.***

Education

University of Utah — Salt Lake City, Utah

Doctor of Philosophy in Physics

Bachelor of Arts in Physics

Awards

- Outstanding Postdoctoral Researcher, *University of Utah Department of Physics and Astronomy*
- U.S. Presidential Scholar, *White House*
- National Science Scholar, *U.S. Department of Education*

Other Interests

Among many passions, I am a four-season mountaineer, a classically-trained double bassist, and an internationally published amateur photographer.