

# Benjamin Stokes, Ph.D.

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## Summary

*I am a data-oriented solution architect 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 expertise include:*

- Machine learning solutions
  - Full stack data validation
  - Artificial intelligence quality assurance
  - Numerical modeling and simulations
  - Algorithm development and implementation
  - Performance marketing optimization
  - Customer engagement platforms
  - Strategic problem solving
  - International collaboration
  - Public presentation
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## Skills

**Computer Languages:** R, Python, Go, C, C++, Bash, L<sup>A</sup>T<sub>E</sub>X, Java, FORTRAN, (*whatever else is needed*)

**Data Management, Statistical Analysis, and Machine Learning:** R, Redshift, PL/SQL, MySQL, Excel, Tableau

**Distributed Systems and Virtualization:** AWS, VirtualBox, VMware, Hadoop, MapReduce, Spark

**Frameworks, Environments, and Operating Systems:** Linux, Windows, Atlassian, Google Analytics and Adwords

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

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## Certification

Google AdWords Search Advertising *valid through June 2018*

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## Experience

### Smash(ai)

SALT LAKE CITY, UTAH

#### Managing Data Scientist

July 2016 – Current

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

- **Overseeing the development and implementation of an AI-driven customer engagement platform.** In preliminary tests, this platform was able to increase message read rates by 27% which brought about a substantial increase in customer engagement. The client's financial model projected a \$22 million increase in five-year discounted revenue with an ROI of 20:1.
- **Devising a full-stack validation for a performance marketing optimization platform.** I designed and deployed AI quality assurance and multilevel data validation for a highly complex pre-existing platform. Through my efforts, the platform went from having a negative impact to achieving increases of up to 300% in ROI for individual Adwords campaigns.
- **Architecting, building, and operationalizing an AI-driven customer behavior detection framework.** By harnessing AI and innovating a method of bootstrapping ever-larger training sets, I created a framework that could spot complex behavioral changes with a 99% accuracy and no documented cases of false-positives. The client will be utilizing this framework as a standard benchmark for internal initiatives company-wide.

### Finicity Data Services

SALT LAKE CITY, UTAH

#### Data Science Consultant

April 2016 – July 2016

Finicity is a rapidly expanding fintech company whose core competency is financial account aggregation. During my consulting stint, I spearheaded some important initiatives:

- **Defined and automated key performance indicators for prioritizing support engineering efforts.** I engineered KPIs, displayed through an automated dashboard, that allowed the support team to reduce consumer aggregation errors by 40%.
- **Built an AI-powered application for categorizing financial transactions.** I used NLP machine learning to categorize financial transactions which achieved an incremental 20% gain in accuracy.

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## Experience (cont.)

### 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. My principal achievements included:

- **Designing the primary framework for the Monte Carlo simulation of the TA observatory.** This effort entailed integrating 40 years worth of legacy code, writing 20,000 lines of new code, and innovating an entirely [novel algorithmic approach](#). The [resulting simulations](#) were [unprecedented](#) in detail and accuracy.
- **Developing a [technique](#) for mapping and reducing parallel computations.** I pursued this effort with the aim of open-ended scalability and robust fault protection.
- **Engaging in big data management.** I built and managed a 50 TB Linux data server and managed a 10 TB remote data space. In order to effectively utilize this data, I developed a keen sense of foresight towards data logistics.

### Rutgers, The State University of New Jersey

PISCATAWAY, NEW JERSEY

#### Postdoctoral Associate

July 2008 – April 2010

I first joined the TA collaboration as a researcher with the affiliated group at Rutgers University. Relevant experience included:

- **Learning to work remotely.** Spending the majority of my time 3000 km from the rest of my research group was an excellent opportunity to develop independence, clear communication, and self-motivation.

### University of Hawai'i at Mānoa

HONOLULU, HAWAI'I

#### Junior Researcher

September 2006 – June 2008

At the Neuroscience and MRI Research Program, my primary responsibilities included operationalizing fMRI data analysis protocols and performing clinical duties. The most important milestone for me was:

- **Successfully executing a major domain change.** In doing so, I developed extensive strategies for efficiently tackling unfamiliar problems.

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## Education

### University of Utah

SALT LAKE CITY, UTAH

#### Doctor of Philosophy in Physics

#### Bachelor of Arts in Physics

### Timpview High School

PROVO, UTAH

#### Valedictorian

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## 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*
- Eagle Scout, *Boy Scouts of America*

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## Other Interests

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