

# Adam Kelleher

@akelleh (Twitter, Medium, and GitHub)

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## EXPERIENCE

### **BuzzFeed, New York, NY — *Principal Data Scientist***

March 2016 - PRESENT

Consulted on AB test design. Built a production machine learning framework and advised on algorithm implementations: currently supporting three algorithms in production, and a few in development. Implemented ad effectiveness experiment infrastructure and targeting algorithms. Raised net clicks on some properties by 15%. Increased ad social referrals by 50%. Increased ad effectiveness sample sizes by 100%. Reduced machine learning model dev time from weeks to days, with the record being 30 minutes. Scraped social media data.

### **Columbia University, New York, NY — *Adjunct Assis. Professor***

July 2016 - PRESENT

Designed and taught elective courses to fill out the data science institute's M.S. curriculum focusing (separately) on observational causal inference and product-izing machine learning algorithms.

### **BuzzFeed, New York, NY — *Senior Data Scientist***

March 2015 - March 2016

Worked with a team to implement an online bayesian click prediction system. Mentored a dev fellow and co-authored a graph layout tool. Wrote a suite of graph analysis tools on top of igraph. Met with clients and supported the product release of the POUND graph data collection system. Improved financial models for revenue forecasting. Attended client meetings to support BuzzFeed's reputation as a scientific, innovative company. Featured as one of FastCompany's "most creative people".

### **BuzzFeed, New York, NY — *Data Scientist***

November 2013- March 2015

Implemented and tested several recommendation algorithms. Built causal models for products. Supported the development of the POUND graph data project. Did some reporting on ad performance to stakeholders.

### **UNC: Chapel Hill, Chapel Hill, NC — *TA/RA***

Fall 2006- Spring 2013

Designed and implemented a distributed web crawler to scrape political blog data, and analyze information dynamics in the political blogosphere.

## SKILLS

Python, R, SQL, Git, LaTeX

Tornado, (rusty: flask + celery, django, rabbitmq, MongoDB, Redis)

pandas, numpy, scipy, sklearn, statsmodels, causality

AWS (command line and python client), pyspark, MrJob, Google cloud services (command line and python client; mainly Storage, BigQuery, and Cloud-ML)

Exploratory Analysis, Online and batch machine learning, data pipeline development, research methodology, REST, asynchronous programming, observational and experimental causal inference, social network analysis, graph analysis

## AWARDS

Graduate Teaching Award, (2013)

Most Innovative Company (2015), FastCompany magazine (photo featured)

Most Creative People

(2016) [FastCompany magazine](#).

Odum Insitute Grant for Interdisciplinary Research

Gave math lectures to graduate quantum mechanics classes. Developed the undergraduate modern physics lab curriculum into a communication intensive class. Taught in experimental physics labs, and graded papers for several years.

(2012)

## Extras

Data Science Track Organizer for NYC DataEngConf (2016, 2017)

Math and Algorithm Reading Group Organizer (over 1000 members)

Causal Data Science blog series author, articles regularly exceeding 20k views

## EDUCATION

### UNC: Chapel Hill, Chapel Hill, NC — *Ph. D. Cosmology*

Fall 2009 - Spring 2013

Continued advanced coursework, including general relativity and quantum field theory. Spent a year working remotely in Cambridge, UK as a visiting student, and taking courses in the mathematical Tripos. Continued research, moving toward alternative gravity theories as explanations for Dark Energy and Dark Matter, and wrote my dissertation on finding semi-analytic solutions for calculating template waveforms for “matched filtering” for gravitational wave detection.

### UNC: Chapel Hill, Chapel Hill, NC — *M.S. Cosmology*

Fall 2006 - Spring 2009

Did a year of course work (advanced courses at Duke U.), then focused on studying gravity theory around Dark Energy. Did some simple work exploring black hole accretion of exotic forms of Dark Energy.

### Clemson University, Clemson, SC — *B.S. Physics (math)*

Fall 2002 - Spring 2006

## SELECTED PUBLICATIONS

Adam Kelleher and Hugo Bowne-Anderson. [Data Science at BuzzFeed and the Digital Media Landscape](#). DataCamp Podcast, 2018.

Adam Kelleher. [A Technical Primer on Causality](#). Medium, 2016.

Adam Kelleher. [What do AB Tests Actually Measure](#). Medium, 2017.

A. Kelleher. Gravitational Radiation in  $f(R)$  Gravity: A Geometric Approach (dissertation). (2013)

A. Kelleher. Dark Energy and Dark Matter in  $f(R)$  Gravity and an Alternative Chameleon Mechanism - arXiv:1309.3523 (2013)