

# Aaron Gonzales

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## about

Computer science graduate student with strong analytical skills and extensive research experience seeking a data science position after May 2016 graduation.

## education

### Master of Science, Computer Science

*The University of New Mexico*

Concentrating in data mining and machine learning.

2014–2016 (expected)

3.8 cumulative GPA

### Bachelor of Science, Psychology

*The University of New Mexico*

Concentrated in neuroscience with a minor in computer science.

2010

## selected research/work experience

### Data Scientist Intern, TripAdvisor

*Greater Boston Area, MA*

Summer 2015

#### summary:

Data scientist with the Vacation Rentals team under George Bezerra, PhD. 1) Developed a novel ranking system for 720,000+ rental properties and 2) used gradient-boosting machines to predict how well new properties will perform using the learned ranking system.

- Models were developed on approximately 5 terabytes of web traffic history using Hadoop, Hive, Python, and scikit-learn
- Models were built to scale with millions of daily visitors and able to account for a 90-day sliding historical window to capture recent trends in visitor behavior
- Feature generation for the predictive model included computer-vision techniques, sentiment analysis, and more.
- A/B testing showed that my model improved a revenue metric (revenue per visitor) by 2.36% and conversion rates by approximately 1%
- Worked with engineering teams to create long-term architectural solutions to better support and integrate data science solutions with engineering constraints

### Research Assistant, The University of New Mexico

*Albuquerque, NM*

2015–current

#### summary:

Research assistant for Dorian Arnold, PhD, in the Scalable Systems Lab using data science to predict system faults and refine resource management in high-performance computing systems. Partnering with Los Alamos National Laboratory and the Center for Advanced Research Computing.

### Analyst/Programmer, The University of New Mexico

*Albuquerque, NM*

2011–2014

#### summary:

Lead analyst in a neuroscience research lab run by Elaine Bearer, MD—PhD, managing various research projects and lab members.

#### notable accomplishments:

- Streamlined lab data processing and analytical techniques, resulting in a 100x (3 hours manually → 30 seconds) reduction on time spent in critical image preprocessing steps and numerous batch processing steps for other tasks
- Designed, ran, and analyzed a pilot study that was responsible for landing a \$2.7 million dollar NIH R01 grant to study the etiology of post traumatic stress disorder via neuroimaging and genetics using transgenic mouse models
- Authorship on 10 total conference posters, conference presentations, and journal articles
- Trained and mentored 10 undergraduate and postbaccalaureate student employees and volunteers

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## computer skills

### programming languages, notable libraries, and tools

Java, **R** (caret, ggplot2, plyr), Python (scikit-learn, gensim, matplotlib, pandas, statsmodels, Cython, sqlalchemy), linux shell scripting,  $\text{\LaTeX}$ , git, svn, MongoDB, Hadoop, Hive, SQL (Postgres, MSSQL). Some experience with Javascript, HTML, CSS, D3.js, C/C++, and Matlab.

### software packages and operating systems

Linux (Ubuntu/CentOS), Microsoft Windows, Apple OS X, VirtualBox, Amazon Web Services (ec2, s3, Redshift), Adobe Illustrator, Adobe InDesign, Adobe Photoshop, Amira, ImageJ, MIPAV, SPM8, FSL, NiftyReg, and MetaMorph.

## selected publications

### articles in peer-reviewed journals

Quantitative measurements and modeling of cargo–motor interactions during fast transport in the living axon

Pamela E Seamster, Michael Loewenberg, Jennifer Pascal, Arnaud Chauviere, **Aaron Gonzales**, Vittorio Cristini, Elaine L Bearer  
*Physical Biology* 9.5 (2012) p. 055005. 2012

### conference proceedings

Unbiased comprehensive analysis of neural activity in response to fear with in vivo MR imaging of animal models of PTSD

**A. Gonzales**, A. Delora, R. E. Jacobs, E. L. Bearer  
*2014 Neuroscience Meeting Planner*, 2014, Washington, DC

Aging deficits in axonal transport are exacerbated by abeta plaques: An MEMRI study

**A. Gonzales**, J. J. Gallagher, X. Zhang, R. E. Jacobs, E. L. Bearer  
*2013 Neuroscience Meeting Planner*, 2013, San Diego, CA USA

Live imaging of mesolimbic circuitry and activity in transgenic mouse models of post-traumatic stress by manganese-enhanced mri

**A. Gonzales**, J. J. Gallagher, X. Zhang, R. E. Jacobs, E. L. Bearer  
*2012 Neuroscience Meeting Planner*, 2012, New Orleans, LA USA

### manuscripts in preparation

Stripping rodent brain images by automation: Empowering rodent models for investigation by magnetic resonance imaging

Adam Delora\*, **Aaron Gonzales\***, Russell E Jacobs, Elaine L Bearer  
\* - these authors contributed equally, 2015, submitted

*In-vivo* Imaging of fear pathways in mice: an MEMRI method

**Aaron Gonzales**, Adam Delora, Xiaowei Zhang, Russell E Jacobs, Elaine L Bearer  
2015

The RESTORE Registry: The Initial United States Experience with Lower Extremity Revascularization on Real World Patients with the Supera Stent

Miguel Montero-Baker, **Aaron Gonzales**, Gregory Ziomek, Luis R Leon Jr, Joseph L Mills, John P Pacanowski Jr  
2014, submitted

## other interests/accolades

### Olympic Weightlifting

- 2014 New Mexico Games: Gold Medalist, 94kg class
- 2013 New Mexico Games: Silver Medalist, 85kg class
- 2013 Barnholth Memorial Invitational: Silver Medalist, 85kg class