

Aaron Gonzales

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selected research/work experience

Data Scientist Intern, TripAdvisor

Summer 2015

Greater Boston Area, MA

summary:

Data scientist intern with the Vacation Rentals team under George Bezerra, PhD. Developed a predictive model that included a novel ranking system for 720,000+ rental properties and used gradient-boosting machines to predict how well new properties will perform.

notable accomplishments:

- The model was built with approximately 5 terabytes of web traffic history using Hive, Python, pandas, and scikit-learn
- The model scales with millions of daily visitors and self-tunes to fluctuations in visitor usage patterns
- A/B testing showed that the model **increased revenue-per-visitor by 4.3%** for one type of traffic
- A/B testing showed that integrating the model with another model **increased revenue-per-visitor by 9.57%** on a greater range of traffic
- The model is now in use across all of TripAdvisor Vacation Rentals' sites

Research Assistant, The University of New Mexico

2015—current

Albuquerque, NM

summary:

Research assistant for Dorian Arnold, PhD, in the Scalable Systems Lab. I am investigating high-performance computing resource monitoring strategies using data science. We are collaborating with Los Alamos National Laboratory and the Center for Advanced Research Computing.

Analyst/Programmer, The University of New Mexico

2011—2014

Albuquerque, NM

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 instrumental 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

education

Master of Science, Computer Science

2014—2016 (expected)

The University of New Mexico

3.8 cumulative GPA

Concentrating in data mining and machine learning.

Bachelor of Science, Psychology

2010

The University of New Mexico

Concentrated in neuroscience and minored in computer science.

computer skills

programming languages, notable libraries, and tools

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

data science techniques

data munging, supervised learning (random forests, gradient boosting, neural networks, regression, SVMs), unsupervised learning (autoencoders, self-organizing maps, DBSCAN, k-means/mediods, EM), outlier analysis, novelty detection, time-series analysis, dimensionality reduction, feature selection.

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

A simple, rapid process for semi-automated brain extraction from magnetic resonance images of the whole mouse head

Adam Delora*, **Aaron Gonzales***, Christopher S Medina, Adam Mitchell, Abdul Faheem Mohed, Russell E Jacobs, Elaine L Bearer
Journal of Neuroscience Methods (2015, accepted). * - these authors contributed equally

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

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

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