Aaron Gonzales

curriculum vitæ

{aaron@aarongonzales.net, 505.385.9209, aarongonzales.net}

Experience

Senior Data Scientist, Twitter — May 2019 –current

Boulder, CO

Working on Account Security related work to detect and measure the incidence of compromise on our platform. Served as a technical lead and provided process improvement, technical guidance, roadmap planning, and data-science organization wide improvements. Mentored colleagues. Reviews work for the greater Health data science team, working on anti-abuse, spam, fake account, and misinformation problems at Twitter.
Also serve as the technical lead for data science effectiveness, a virtual team that develops tooling, processes, and relationships with peer teams to make doing data science at Twitter better for all.
Serve as a Global Lead for Twitter's Alas BRG for Hispanic and Latinx employees, serve on company-wide organizations, and as a co-chair for our Latinx engineers group at Twitter.

Data Scientist, Twitter — July 2017 –May 2019

Boulder, CO

Worked with the Developer and Enterprise Solutions group to help improve our developer platform, vet new product ideas, and make datasets that enabled teams to generate insights and make decisions quickly.
Notable accomplishments:

- Developed an open-source python API for our premium and enterprise search products (see the Search Tweets Python link to Github for more info. As of April 2019, the library has been installed over 18,000 times and has > 100 stars on github.
- Managed developer education project to provided real-world example analyses using Twitter data to lower barriers to adoption and support developers & data scientists to build their own solutions with Twitter data products. See the Do more with Twitter data series links for more info.
- Identified clusters of applications abusing Twitter's APIs using time-series mining
- Identified risk factors in developer applications to enable programmatic review of applications to use our APIs.

Data Scientist, TripAdvisor — July 2016–July 2017

Greater Boston Area, MA

Data scientist for the Vacation Rentals group. Notable accomplishments:

- Designed and built a computer vision pipeline for all photos on the Rentals platform using deep learning methods. Includes models built to detect people (with and without faces), content (e.g., beach, bedroom, kitchen), and aesthetic quality. Using the data from the pipeline, Display marketing saw a 4.8% increase in click-through rate and a 10.4% increase in ROAS.
- Built an internal app that supports natural-language queries (e.g. "girls getaway") to find collections of destinations using deep-learning word embedding techniques. Used across teams to help find data-driven destinations, dynamically improve relevance (A/B tested with 6.1% improvement over control in a primary metric), and to recommend nearby destinations for travelers.
- Designed and built a modeling pipeline to predict property availability, assisting our product team's ability to encourage better traveler experiences and owner behavior.
- Developed methods to extract high-information snippets from reviews to display on search result pages to boost SEO rankings.
- Developed a common team codebase providing shared tools, common access methods, and other utility code that is in heavy use by the team. It has allowed our data scientists and engineers to get up-to-speed more quickly and iterate faster on projects.

Data Scientist Intern, TripAdvisor — Summer 2015

Greater Boston Area, MA

Data scientist intern with the Vacation Rentals team. Notable accomplishments: Developed a novel ranking system for 720,000+ rental properties and used gradient-boosting machines to predict how well new properties will perform.

- 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 a key visitor conversion rate by 3.46%** and **decreased visitor bounce rate by 0.46%**
- A/B testing showed that integrating the model helped **increase revenue per visitor by 9.57%**
- The model was put into production across all of TripAdvisor Vacation Rentals' sites

Research Assistant, The University of New Mexico 2015–2016

Albuquerque, NM

Research assistant for Dorian Arnold, PhD, in the Scalable Systems Lab. We partnered with both Los Alamos National Laboratory and the Center for Advanced Research Computing to investigate applying data science techniques to understand complex high-performance system behavior.

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, including a method that speed up a critical data processing step by approximately 360x (3 hours to 30 seconds). Implemented numerous other batch data processing steps for other tasks.
- Designed and conducted a pilot study that helped win a $2.7 million dollar NIH R01 grant to study the etiology of post traumatic stress disorder.
- Lead author on five research papers (one submitted, four nearing submission), three conference abstracts and presentations, coauthor on many more submitted and pending papers and abstracts
- Trained and mentored 10 undergraduate and post-baccalaureate student employees and volunteers

Research Associate 2010–2011

The Mind Research Network, Albuquerque, NM

summary:

RA in a neuroscience research group ran by Julia Stephen, PhD. Contributed to a study investigating multi-sensory integration in patients with schizophrenia.

Student Volunteer 2008–2010

The Mind Research Network, Albuquerque, NM

Assisted with a study ran by Pilar Sanjuan, PhD investigating substance use and post-traumatic stress disorder (PTSD) in recently returned combat veterans.

Student Volunteer 2008

The University of New Mexico, Albuquerque, NM—

Assisted Akaysha Tang, PhD, with a study investigating stress regulation in rats and assisted an expert in troubleshooting and repairing an EEG system for a study investigating stress in humans.

Education

Master of Science, Computer Science 2016

The University of New Mexico *3.7 cumulative GPA*

Concentration in data mining and machine learning.

Bachelor of Science, Psychology 2010

The University of New Mexico

Concentration in neuroscience; minored in computer science.

Publications

Articles In Peer-Reviewed Journals

Alterations of functional circuitry in aging brain and the impact of mutated APP expression.
Elaine L Bearer, Brett C Manifold-Wheeler, Christopher S Medina, **Aaron Gonzales**, Frances L Chaves, Russel E Jacobs
Neurobiol. Aging *70 (Oct. 2018) pp. 276–290*

Unraveling Network Induced Memory Contention: Deeper Insights with Machine Learning.
Taylor L Groves, Ryan E Grant, **Aaron Gonzales**, Dorian Arnold
IEEE Transactions on Parallel and Distributed Systems *29.8 (Aug. 2018) pp. 1907–1922*

Automated computational processing of 3D MR images of mouse brain for phenotyping of living animals.
C S Medina, B Manifold-Wheeler, **A Gonzales**, E L Bearer
Curr Protoc Mol Biol *119.29A (July 2017) pp. 1–29*

Analysis of endovascular therapy for femoropopliteal disease with the Supera stent
Miguel Montero-Baker, Gregory Ziomek, Luis Leon, **Aaron Gonzales**, Robert S Dieter, Crystal L Gadd, John P Pacanowski Jr
Journal of Vascular Surgery *64.4 (2016) pp. 1002–1008*

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). * - 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

A Principled Approach to HPC Monitoring
A. Gonzales, Michael Mason, Prabhu Khasla, Abdullah Mueen, Dorian Arnold
4th Workshop on Extreme-Scale Programming Tools at Supercomputing 2015, Austin, Texas

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

Axonal transport is altered in aging mice with and without plaques induced by overexpression of human APP
E.L. Bearer, **A. Gonzales**, F. Chavez, R. E. Jacobs
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

Imaging functional anatomy in the brain of mouse models of human disease
Elaine L Bearer, Joseph J Gallagher, **Aaron Gonzales**, Russell E Jacobs
Alzheimer's & dementia : The Journal of the Alzheimer's Association, 2013

Imaging functional anatomy in the brain of mouse models of human disease
Elaine L Bearer, Joseph J Gallagher, **Aaron Gonzales**, Russell E Jacobs
FASEB Journal 26, 2012

Measurements and modeling of axonal transport: Amyloid precursor protein wins over negative charge in the race to the synapse
J. Pascal, M. Loewenberg, **A. Gonzales**, V. Adair, EL Bearer
Mol. Biol. Cell, 23,4663, abstract 1984, 2012, New Orleans, LA 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

Auditory and visual integration differences from left temporal cortex in schizophrenia
J. M. Stephen, L. Urrea A. Geeda, L. Romero, **A. Gonzales**, C. J. Aine, J. Bustillo
2010 Neuroscience Meeting Planner, 2010, San Diego, CA USA

Good stress regulator begets good stress regulator: Predicting offspring stress regulation from maternal stress regulation
A. C. Tang, Z. Yang, R. D. Romeo, A. Chen, A. Plakio, D. Delvecchio, V. Nguyen, Y. Zhang, J. Youngblood, **A. Gonzales**, B. S. McEwen

Other Interests and 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