

## Aaron Gonzales

### Selected Experience

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**Staff Machine Learning Engineer, Mozilla.ai** Remote, USA April 2023–current

Hired as Lead/Founding Engineer to develop Mozilla.ai's foundational research and development platform.

- Established engineering culture and practice, including coding standards, developer tooling, CI/CD pipelines, API design styles, abstraction patterns, and a technical hiring program.
- Designed and built a platform for large language model (LLM) research and product iteration on a cloud-based GPU cluster, enabling early participation and sponsorship of Neurips and KDD workshops.<sup>[2],[1]</sup>
- Onboarded and mentored four ML engineers and researchers.
- Manage procurement, setup, and relationships of cloud and IT vendors.

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**Senior Machine Learning Research Engineer, Twitter** Remote, USA June 2020–January 2023

Technical Lead for the Machine Learning Ethics, Transparency, and Accountability team that owned Responsible Machine Learning development and research at Twitter.

- Improved processes, gave technical guidance, mentored other engineers, and led organization-wide improvements.
- Built a system of feature pipelines and tools for researchers that accelerated critical team research by 20x while ensuring more reliable results.
- Led projects to build tools into Twitter's internal Tensorflow Extended ecosystem that enabled teams to rapidly identify undue biases and weaknesses in model performance.
- Facilitated adoption of team results and products, leading to company-wide adoption of model quality metrics and tools. Presented work in multiple forums.<sup>[6],[7],[3],[5],[4]</sup>
- Continued service on company advisory groups, including efforts to select a new Twitter-wide data processing stack that would lead to 3-5x speedups in key data pipelines.

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**Senior Data Scientist, Twitter** Boulder, CO July 2017–June 2020

Data scientist for Twitter's API client business and later as tech lead for the Health Data Science team.

- Established tools and libraries that enabled 50 data scientists and ML engineers to increase the scale of analyses by 5-50x by making PySpark, Presto, and BigQuery easier to use and scale internally on disparate datasets.
- Developed strategy, model, and data pipeline for identifying potentially compromised accounts.
- Developed open-source client libraries for Twitter API products, which were used by thousands of API customers.<sup>[10],[8]</sup>
- Built risk model for developers applying to use Twitter's APIs, and model for identifying clusters of applications abusing Twitter's API policies, allowing programmatic remediation of thousands of abusive client applications.
- Served on company advisory groups for data architecture, open-source software, Python development, and as a global lead for Twitter's Hispanic/Latinx employees resource group.

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**Data Scientist, Tripadvisor** Greater Boston Area, MA July 2016–July 2017

Built scalable machine learning models for the Vacation Rentals group.

- Shipped a computer vision feature-engineering pipeline with models to detect humans, extract content, and rate aesthetic quality for all photos, increasing a click-through rate metric by 4.8% and increasing revenue from ad expenditures by 10.4
- Built a language model and interface that enables natural-language queries to find collections of destinations, which led to a 6.1% improvement in a primary metric.
- Developed language-modeling tools to extract high-information snippets from reviews to display on search-result pages to boost SEO rankings.

- Developed an internal data and model tools package that allowed data scientists and engineers to get up-to-speed more quickly and iterate faster on projects.

## Education

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**Master of Science, Computer Science.** University of New Mexico, 2016.

**Bachelor of Science, Psychology.** University of New Mexico, 2010.

## Technical Skills

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**Languages:** Python, SQL, shell, Scala

**ML/Data/AI frameworks:** Spark, Tensorflow, Kubeflow, TFX, Pytorch, Pandas, scikit-learn, Keras, vllm, Ray

**Dev and ML Ops frameworks/platforms:** Google Cloud, Coreweave, Oracle Cloud, Kubernetes, Helm, Airflow, Bazel

## Selected Publications and Artifacts

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- [1] **Neurips large language model efficiency challenge: 1 llm + 1gpu + 1day**  
Mark Saroufim, Weiwei Yang, Joe Isaacson, Luca Antiga, Driss Guessous, Greg Bowyer, Christian Puhersch, Geeta Chauhan, Supriya Rao, Artidoro Pagnoni, Vicki Boykis, Aaron Gonzales, Davide Eynard. (Dec. 2023). <https://llm-efficiency-challenge.github.io/>.
- [2] **Evalrs: Well-rounded recommender systems for real-world deployments**  
Federico Bianchi, Patrick John Chia, Jacopo Tagliabue, Claudio Pomo, Gabriel Moreira, Ciro Greco, Davide Eynard, Fahd Husain, Aaron Gonzales. (Jul. 2023). <https://reclist.io/kdd2023-cup/>.
- [3] **County-level algorithmic audit of racial bias in twitter's home timeline**  
Luca Belli, Kyra Yee, Uthaipon Tantipongpipat, Aaron Gonzales, Kristian Lum, Moritz Hardt. (Nov. 2022). *arXiv preprint arXiv: 2211.08667 [cs.SI]*.
- [4] **Measuring disparate outcomes of content recommendation algorithms with distributional inequality metrics**  
Tomo Lazovich, Luca Belli, Aaron Gonzales, Amanda Bower, Uthaipon Tantipongpipat, Kristian Lum, Ferenc Huszár, Rumman Chowdhury. (Aug. 2022). *Patterns (N Y)*, vol. 3, no. 8 (100568).
- [5] **Research, meet engineering or: How i stopped worrying about scaling and love the process**  
Aaron Gonzales, Luca Belli. Conference Talk, ACM FACCT, (Jun. 2022). <https://facctconference.org/2022/acceptedcraft.html>.
- [6] **Enabling, accelerating, and scaling data science for ml ethics**  
Aaron Gonzales. Invited Talk, The Data Science Conference, (May 2022). [https://www.thedatascienceconference.com/\\_files/ugd/a4f11b\\_468d08b0a6f74203ba4b1c90e00417a7.pdf](https://www.thedatascienceconference.com/_files/ugd/a4f11b_468d08b0a6f74203ba4b1c90e00417a7.pdf).
- [7] **Investing in privacy enhancing tech to advance transparency in ml**  
Aaron Gonzales, Rumman Chowdhury. Company blog post, Twitter, Inc. (Jan. 2022). [https://blog.twitter.com/engineering/en\\_us/topics/insights/2022/investing-in-privacy-enhancing-tech-to-advance-transparency-in-ML](https://blog.twitter.com/engineering/en_us/topics/insights/2022/investing-in-privacy-enhancing-tech-to-advance-transparency-in-ML).
- [8] **Search tweets python library**  
Aaron Gonzales, Fiona Pigott, Jim Moffitt, Josh Montague. Python package, Twitter, Inc. (2018). <https://github.com/twitterdev/search-tweets-python>.
- [9] **Unraveling network-induced memory contention: Deeper insights with machine learning**  
Taylor Liles Groves, Ryan E. Grant, Aaron Gonzales, Dorian Arnold. (2018). *IEEE Transactions on Parallel and Distributed Systems*, vol. 29, no. 8 (1907–1922).
- [10] **Do more with twitter data: Evaluating time series and identifying trends**  
Aaron Gonzales. Company blog post, Twitter, Inc. (Mar. 2018). [https://blog.twitter.com/developer/en\\_us/topics/tips/2018/evaluating-time-series-and-identifying-trends](https://blog.twitter.com/developer/en_us/topics/tips/2018/evaluating-time-series-and-identifying-trends).
- [11] **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. (2016). *Journal of Neuroscience Methods*, vol. 257 (185–193).