Amelia Taylor

Bend, OR
ajt@ameliajtaylor.com
www.linkedin.com/in/ameliajtaylor

Home: (719) 287-8978
ameliajtaylor.github.io
github.com/ameliajtaylor

I'm a data scientist whose first career was Tenured Mathematics Professor. I love working on complex problems with clear business impact. As a data scientist, I deliver complex data products requiring a deep understanding of statistics, design of experiments, and machine learning along with an the ability to balance the trade-offs between research into the best solution and delivery of a quality product on time. As a Staff Data Scientist, I love leading technical delivery teams, thinking about strategy and evaluating ROI early in a project to inform prioritization.

Skills & Languages Summary: Python, Pandas, NumPy, Scikit-Learn, Matplotlib, Altair, Plotnine, R, tidyverse, ggplot, Binderhub, Jupyter, Git, SQL, Mode, Google Cloud Services (Bigquery, DataPlex, GCS Buckets, Looker Studio), dbt*, Snowflake*, Flask*, Docker*, Jenkins* *some experience

Experience:

- **Staff Data Scientist**, *Shopify*, Bend, OR February 2022 - December 2023

  Shopify is a commerce platform for merchants, making commerce better for everyone.

  - Lead design and analysis of the largest and most complex experiment in 2023. Built trust with business partners in the experimental plan through simulation and consistent clear communication.
  - Drive improvements to the experiments platform through collaboration with data scientists and platform development team.
  - Consult on experimental design and analysis across the organization.
  - Deliver high impact short term analytical solutions in the commerce space leveraging industry standard metrics and segmentation.

- **Staff Data Scientist**, *Zymergen, Inc*, Bend, OR July 2019 - January 2022

  Zymergen integrated robotics, software and genetic engineering, all guided by data science, to deliver end-to-end microbial strain improvement for applications in industrial fermentation.

  - Worked with C-suite and director level leadership to scope projects and determine ROI, providing the technical expertise to make quick go no-go decisions.
  - Technical lead of two different cross-functional teams that delivered multiple products on time with a unique blend of statistics, chemical engineering and software engineering mix. Throughout these deliveries we standardized processes, captured critical data, and cut data processing time by at least a day per month.
  - Coordinated across diverse stakeholders from a broad range of scientists to data engineering, and manufacturing.
  - Architected complex deliveries including quick turn around UI connected to libraries integrated into our continuous integration system.
  - Delivered high impact short term analytical solutions.

- **Data Science Manager**, *Zymergen, Inc*, Bend, OR March 2019 - July 2019

  - Facilitated transition of data science team from a small number of people working on individual projects to a large org delivering on complex products using cross-functional teams.
  - Coached data scientists stretching into project management and technical leadership.
  - Helped onboard two new managers.

- **Senior Data Scientist**, *Zymergen, Inc*, Bend, OR January 2019 - July 2019

  - Built product for assay development that cut analytical time by 70%, made experiments and analysis repeatable and designed and stored data for improved analysis and future predictive models.
  - Technical lead for cross-functional collaborative product team.

- **Data Scientist, II**, *Zymergen, Inc*, Bend, OR October 2016 - January 2019
  - Provided analytical support for client teams doing assay development. Technical lead for team that developed the proof of concept that lead to assay development tool.
  - Owned end-to-end development of outlier detection from algorithm development to automation of the process. Automation saved 2 hours per week per client. Model selection and hyper-parameter tuning algorithms provided metrics critical for rigorous decision making. *Patent pending and presented at PyBay* https://youtu.be/gOSz5SFJAI4.
  - Designed and and worked cross-functionally to productionize normalized data tables storing data critical to the data science team that is now used company wide and considered critical infrastructure.
- **Consultant**, *Mathematical Sciences Research Institute*, Bend, OR October 2017 - December 2018
  - Conducted study of postdoctoral fellowship program analyzing seven years of data. Updated existing survey to adhere to current best practices and analyzed results in R as primary author of the final report.
- **Consultant**, *Insight Data Science*, Seattle, WA September - November, 2017
  - Taught probability course and mentored fellows in technical development of products and interview preparation.
- **University Professor**
  - **Instructor**, *Oregon State University - Cascades*, Bend, OR September 2015 - June 2016
  - **Associate Professor** (tenured), *Colorado College*, Colorado Springs, CO July 2012 - May 2015
  - **Assistant Professor** (tenure-track), *Colorado College*, Colorado Springs, CO August 2006 - July 2012
  - **Assistant Professor** (tenure-track), *St. Olaf College*, Northfield, MN August 2003 - July 2006
  - **VIGRE Hill Assistant Professor** (postdoctoral fellow), *Rutgers University*, Piscataway, NJ 2000-2003
  - Leadership
    - Supervised 11 full time faculty, 7 part time faculty and 2 staff. (Department Chair)
    - Coordinated all daily operations of the department, including two major personnel reviews, an external review of the department, course scheduling, weekly speaker series and budgeting process. (Department Chair)
    - Coordinated department assessment team for two years. Developed outcomes, rubrics and feedback loops.
    - Organized 6 intense week-long workshops of 25+ people.
  - Data Science
    - Developed a statistically powerful method for inferring phylogenetic trees using representation theory. Implemented algorithm for inference and simulation data tests in R.
    - Converted Statistical Modeling and Probability Theory course to being taught using R.
    - Developed and published an algorithm for computing a monomial ideal invariant using reverse search.
    - Developed a Monte Carlo based method for fast computation of a key invariant in commutative algebra.

Open Source Code Contributions:

- Statsmodels python package
  - Add the Games-Howell statistical test (in review)
  - Two bugs in the code to compute the student's quantile distribution. (in review, Bug 1 link, Bug 2 link).

Professional Presentations:

- **Data Did That!** 2019 Fall Gordon Lecturer, Denison University October 2019
- **Data Did That!** National Mathematics Festival, Washington DC May 2019
- **Robots, Biology and Unsupervised Model Selection**, San Francisco, CA August 2018

Education:

- **Ph.D., Mathematics**, *University of Kansas*, Lawrence, KS May 2000
- **M.S., Mathematics**, *Purdue University*, West Lafayette, IN May 1997
- **B.A., Mathematics**, *St. Olaf College*, Northfield, MN May 1994
  Magna Cum Laude, with Distinction