

KIRKWOOD P. DONAVIN – MATHEMATICS EDUCATOR

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SUMMARY

Former data scientist and experienced math educator with classroom and tutoring experience spanning K–12 and college levels. Comfortable teaching Integrated Math 1 through AP Calculus AB, skilled at executing curriculum plans, creating engaging lesson materials, and communicating effectively with students, parents, and colleagues.

HIGHLIGHTS

- **Expertise:** machine learning, natural language processing (NLP), and statistical analysis
 - **Data Skills:** Querying, cleansing, visualizing, analyzing, predicting, forecasting, testing
 - **Languages:** Python, R, SQL, and Bash
 - **Toolsets:** XGBoost, Sci-Kit Learn, Pandas, TensorFlow, Docker, Prophet, Jupyter Lab, RMarkdown, Snowflake, Presto, BigQuery, SQLAlchemy, Git, GitHub, BitBucket, LookML (Looker)
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MATHEMATICS EDUCATION EXPERIENCE

Grad. Teaching & Research Asst. — Montana State U. — Bozeman, MT — Aug 2013 – May 2015

Assistant to MSU faculty in Agricultural Finance, Agricultural Marketing, and Development Economics. Supported teaching and research duties including grading, assignment design, literature collection, and data gathering.

Education & Research Highlights:

- Graded 400+ essays and homework assignments across undergraduate courses
- Designed two course assignment sheets for Development Economics and prepared supporting instructional materials
- Collected and organized 40+ journal articles on statistics education and pedagogy
- Gathered raw price data from over 15 Montana grain elevators for related research projects

Math Instructor — Mathnasium — Salt Lake City, UT — Feb 2013 – Jul 2013

Tutored small groups (2–5 students) ages 6–18 using individualized Mathnasium curriculum as an extracurricular supplement to regular mathematics instruction.

Key activities:

- Delivered targeted lessons aligned to each student's learning plan and tracked progress
- Adapted instructional strategies for a range of abilities and ages
- Communicated progress and recommendations to parents and center coordinators

Freelance Private Tutor — Self-Employed — Greater Salt Lake City Area — Jan 2013 – Jul 2013

Provided one-on-one and small-group tutoring in Calculus, Algebra, and GRE quantitative preparation for students at the high-school and college levels.

Highlights:

- Customized lesson plans and practice problems to target student weaknesses
- Prepared students for standardized exams with focused quantitative strategies

Math Tutor — Westminster College — Greater Salt Lake City Area — Jan 2012 – Dec 2012

Tutored groups of 1–3 college students in College Algebra, Statistics, and Single-Variable Calculus; assisted with homework, exam preparation, and conceptual understanding.

Gore Research Assistant in Mathematics — Westminster College — Greater Salt Lake City Area — Jun 2012 – Aug 2012

Researched differential expressions in pursuit of reproducing kernel equations applied to support vector machine (SVM) classification problems.

**RECENT
INDUSTRY
EXPERIENCE**

Data Scientist — DEPT Agency — Remote (Salt Lake City, UT) — Mar 2024 – 10 mos

Marketing data science for DEPT clients. Specialized in search engine ads, forecasting available ad impressions, and creating an ad-spend budgeting tool using prediction models based on historical data.

Key Accomplishments:

- **Search Engine Ad Impression Forecasting:** Took over responsibility for a TensorFlow ad impression forecasting LSTM model
- **Ad-Budget Recommendations:** Built an ad-budget recommendation tool using XGBoost ensemble models that demonstrated our client was overspending on ads by \$100Ks in some ad categories
- **Statistical Consulting:** various colleagues and projects. Gave an internal presentation on p -values

ML Scientist — Bed Bath & Beyond — Hybrid (Salt Lake City, UT) — Aug 2022 – 1 yr 5 mos

Promoted to the ML team supporting sponsored ads as the junior scientist specializing in the application of XGBoost ensemble methods, and text embeddings to produce conversion (i.e., purchase) predictions. Proven track record in optimizing models, including testing XGBoost against a VowPal Wabbit production model, resulting in superior log-loss performance. Implemented text embedding, further elevating predictive accuracy.

Key Accomplishments:

- **Conversion Prediction:** Tested and produced several XGBoost models for conversion prediction that improved log-loss performance compared with Vowpal Wabbit production model
- **Textual Embeddings:** Integrated embeddings into conversion prediction models. Built a Sci-Kit Learn TFIDF + Singular Value Decomposition (SVD) embedding class and compared model performance improvements with a fastText model. The latter toolset was demonstrated to be the more performant approach.

EDUCATION

M.S. of Applied Economics – May 2015 – Montana State University – Bozeman, MT

Thesis: The Welfare Impacts of Engineers Without Borders in Western Kenya

B.A of International Relations – May 2011 – Cornell College – Mount Vernon, IA