KIMBERLY MANDERY

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CAREER PROFILE

Experienced applied mathematician with a strong academic background in statistical learning, analysis, and data storytelling. Brings five years of teaching experience in various programming disciplines, emphasizing critical thinking and real-world application. Possesses four years of industry experience providing data analytics to pricing, marketing, and public sectors. Committed to impactful, data-driven problem-solving with a creative, curiosity-driven, and integrity-based approach.

CAREER EXPERIENCE

Instructor 2022-present
St. Olaf College Northfield, MN

- Designed active learning curriculum and presented lectures for math and computer science courses.
- Encouraged a growth mindset in others by mentoring and guiding students in developing computational skills and encouraging exploration and experimentation in courses taught.
- Faculty mentor to student researchers involved in data competitions, hackathons, and machine learning projects.
- Courses taught: Calculus I-II, Introduction to Programming, Introduction to Machine Learning

Data Scientist 2023-2024
Hennepin County Minneapolis, MN

- Sourced, aggregated, managed data and leveraged data science technologies to answer business questions as part of the implementation of an enterprise integrated data system (EIDS), with a focus on building well-documented analysis pipelines.
- Produced timely and relevant county-wide insights and data resources to support organization priorities, specifically around disparity reduction, and fostered action aimed at improving service delivery and outcomes for county residents.
- Key projects: Investor-involved residential property sales, county-wide program involvement dashboard geared towards executives, education and youth program intersections analysis, health insurance linkage.
- Data product environments: Azure, Databricks, R, Python, SQL, PowerBI, Neo4j

Pricing Analyst II 2021-2023
Swanson Health Products Fargo, ND

- Identified weekly promotional prices on over 8,000 products to increase customer traffic across paid, natural, and catalog markets.
- Ran clustering analysis to reclassify KVI segments for 18,000 products using sales trends and e-commerce metrics.
- Led pricing evaluation for 1,600 products across ten global markets, reducing potential impact with elasticity forecasting models.
- Presented strategic recommendations and insights to senior leadership through dynamic dashboards.
- Data product environments: Snowflake, R, SQL, PowerBI, Mozart

Co-Instructor, Graduate Teaching Assistant, and Statistical Consultant 2018-2021
University of Minnesota Duluth Duluth, MN

- Introduced students to data science concepts such as wrangling, modeling, visualization, and ethics and challenged them to analyze real-world health data for technical papers through data storytelling.
- Authored and deployed course materials and website using blogdown, git, and netlify.
- Designed active-learning curriculum for various mathematics lectures, supporting 900+ students across six semesters.
- Guided faculty and students through common computational tools including Jupyter, Python, SPSS, R, SAS, Sage, Tableau.
- Academic recognition: UMD's Department of Mathematics and Statistics Graduate Student Service Award.
- Courses taught: Algebra, Calculus I-III, Industrial Problem Solving.

Elementary Literacy Tutor 2017 - 2018
AmeriCorps Rochester, MN

- Implemented evidence-based interventions during daily individual sessions with over 100 K-3 students
- Tracked reading fluency progress, and presented data and progress in regular meetings with teachers.

EDUCATION

University of Minnesota Duluth
Master of Science in Applied and Computational Mathematics *2021*
Minor in Computer Science
Bachelor of Science in Statistics and Actuarial Science *2017*
Bachelor of Science in Applied Mathematics

PAST PROJECTS

An NLP Approach to Automated Scoring of Open-Ended Chemistry Assessments 2019 - 2021
Masters project

- Quantified the effectiveness of multiple-choice assessment prompts used to evaluate experimental design in traditional and flipped courses within four introductory Chemistry lab courses.
- Gathered and analyzed unstructured data to quantify the effectiveness of assessment prompts for Chemistry lab courses using NLP techniques (n-grams, tokenization) and supervised learning models (KNN, Naive Bayes, XGBoost, RF) achieving comparable accuracy (70-85%) to manual rating systems.
- Mentored two researchers in developing a rating system for open-ended Chemistry prompts, and provided design and visualization feedback to 15 undergraduate researchers over five semesters.

COVID Phylogenies 2020
Graduate project

- Utilized NCBI to extract genome data, and used the phanghorn package in R to produce evolutionary distance matrices and create phylogenetic trees for over 60 COVID genomes across five geographical areas.
- Analyzed and presented findings, indicating notable genetic variance within the United States as compared to outgroups in China and Australia.

Predicting Minnesota Voter Turnout 2018
MinneAnalytics competition

- Forecasted the 2018 election results through an ensemble of regression and time series models utilizing R and Python.
- Collaborated with a team to identify and collect relevant data from various sources, including web scraping, to build datasets for analysis. This included candidate profiles, redistricting trends, and constituency data.
- Developed a unique approach to select precincts with invariant boundaries which, coupled with effective data visualization using Tableau and R, resulted in finalist placement.
- Academic recognition: Serendipitous Discovery.

TECHNICAL STRENGTHS

Languages	R, Python, SQL, C++
Platforms & Tools	Azure, Databricks, Git, Jupyter, LaTex, Mathematica, Matlab, MS Office, Neo4j, PowerBI, Sage, SAS, Shiny, Snowflake, SPSS, Tableau
Favorite R Libraries	GGally, janitor, skimr, tidymodels, tidytext

COMMUNITY INVOLVEMENT

Judge for COMAP Mathematical Contest in Modeling (MCM), 2018-2025

Advisor and judge for MinneAnalytics MinneMUDAC data competition, 2024-2025

GRE Quantitative Prep Tutor for TRIO McNair Scholars at University of Wisconsin- Superior, 2021

Volunteer at Mayo Clinic, 2018

Student Gardener at Glensheen historic estate, 2017-2018