

Kelly E. Butler, Ph.D. | Greater Philadelphia Area

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PROFESSIONAL PROFILE

Data scientist with over ten-year's experience as a chemistry professor. Strong analytical, critical-thinking, and problem-solving skills. Excellent in communication, including explaining technical material to non-technical audiences. Expertise in Python, data cleaning and preprocessing, analyzing data, machine learning, and statistics.

TECHNICAL SKILLS (Data Science Techniques)

- Programming languages: Python.
- Data mining, data manipulation and data visualization techniques: NumPy, Pandas, Seaborn, Matplotlib, Scikit-learn, Statsmodels, and SQL.
- Statistical techniques, statistical modeling.
- Data Analysis: Scikit-learn, statsmodels, time series forecasting, NLP, SVM, decision-tree ensemble methods, K-means clustering, logistic regression, linear regression.
- Developing predictive models, Machine learning algorithms, working with large datasets.
- Spark, Databricks, ML pipelines.

EDUCATION

Springboard Data Science Career Track

March 2023 – Present

Machine Learning Specialization

500 + hours, mentor led professional development with hands-on application the following areas: Python, SQL, Spark, machine learning, deep learning, inferential statistics, data visualization, and data storytelling.

Ph.D., Chemistry, Bryn Mawr College, Bryn Mawr, PA

2001

- Collaborated on more than 5 peer-reviewed publications on the synthesis and analysis of novel precursors to molecular wires.
- Presented this work at professional conferences.

RELEVANT EXPERIENCE

Data Science Career Track, Springboard

Image Classification of Traditional Indian Clothing

August 2023 - Present

- Problem: To correctly classify 15 different items of traditional Indian clothing so that e-commerce sites in the U.S. can better serve customers looking for this type of clothing.
- Original images were of a variety of different sizes and shapes. These images were resized to 70x70 pixels.
- As of now, the best CNN model gives 80.2% accuracy, with Adam as the optimizer and a learning rate that starts at 0.001 and decreases to 1.0×10^{-10} .

Omdena Ladakh Chapter

August 2023 - Present

Automated Glacier Mapping

- Volunteer: working on image segmentation.
- Project manager of QGIS task.

Professor of Chemistry, Chestnut Hill College, Philadelphia, PA

2002 – 2023

Chair of Chemistry, Chestnut Hill College, Philadelphia, PA

2014 – 2023

- Presented at 15 U.S. and international professional conferences, on topics ranging from advanced physical organic chemistry to effective teaching methods in chemistry.
- Employed data-driven instruction in chemistry, honors, and introduction to programming classes, guiding students through meticulous analysis, conceptual development, and application of this knowledge to new problems.
- Applied pedagogical expertise to facilitate enhanced student comprehension by seamlessly integrating theoretical concepts with practical, real-world instances.
 - Student feedback indicated that their critical-thinking and problem-solving skills increased more in my classes than in others.
- Orchestrated annual departmental budget of \$60,000, optimizing resource allocation to enhance research initiatives and academic programs while ensuring financial stability.
- Streamlined scheduling processes, resulting in improved course offerings and class availability, effectively meeting student demand and facilitating academic progression.
- Mentored and guided 8 faculty members in their professional development, fostering a collaborative and supportive environment that promoted excellence in teaching and research.

AWARDS

2015 Fulbright Scholar