**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 x 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