Mark Christopher Harris, PhD | Data Scientist

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As a data scientist with a background in physics and math, and as a prior educator, I leverage my experience with rigorous reasoning, experimental planning, data analysis, and communication to thoroughly understand and explain problems. I adopt a big-picture point of view that empowers me to anticipate pitfalls and devise comprehensive problem-solving strategies.

TECHNICAL SKILLS

Languages and Tools: Python, Git, GitHub, SQL, Spark, Pandas, Numpy, Matplotlib, Seaborn, Scikit-learn, Keras, Tensorflow, BeautifulSoup, Streamlit, LabVIEW, IGOR Pro
Machine Learning: Regression, Classification, Clustering, Time Series Analysis, Natural Language Processing (NLP), Data Visualization, Neural Networks, Computer Vision

EXPERIENCE

Data Science Immersive Program — Remote
General Assembly — 9/2021 - 12/2021

- Learned and applied data science and machine learning skills in a 480-hour immersive program, completing 6 projects, 21 lab assignments, and 6 quizzes.
- Trained a convolutional neural net to recognize falling snow added to images via a mask with 99.5% accuracy.
- Collaborated with two other data scientists to analyze food deserts and health with interpretable regression and classification models and geographical data.
- Classified posts acquired via API from different subreddits using NLP and multiple classification models.
- Predicted housing prices using multi-dimensional regression with feature engineering and regularization.
- Analyzed trends in SAT and ACT data with Python and Pandas.

Mathematics Teacher — Dunwoody, GA
Dunwoody High School — 7/2016 - 5/2021

- Coordinated with fellow instructors and guided students as a teacher for classes from Algebra to Calculus.
- Developed syllabus and lessons as sole teacher for AP Calculus BC and Multivariable Calculus courses.
- Organized trips to competitions and practice sessions as sponsor for the school math team.

Graduate Research and Teaching Assistant — Ithaca, NY
Cornell University — 8/2004 - 8/2014

- Taught recitation sessions, assisted students, and provided feedback in courses involving C++, LabVIEW, optical tweezers, solid state physics, quantum mechanics, and electromagnetism.
- Designed a novel experimental method coordinating multiple computers, Python scripting, TIRF microscopy, and Atomic Force Microscopy.
- Programmed Python script to automate portions of experimental procedure for accuracy and reproducibility.
- Synchronized and collected over 5 GB of data from multiple computers and scientific instruments.
- Categorized novel events observed in data and analyzed their properties with the aid of IGOR Pro scripts.
- Applied statistical analysis to identify a characteristic property with dependence on experimental conditions.
- Measured forces between fluorescently-labeled vesicles using LabVIEW-controlled optical tweezers.
- Quantified fluorescence intensity change over time of individual moving vesicles in 11 GB of image data.

EDUCATION

General Assembly — Remote
Data Science Immersive — 9/2021 - 12/2021

Cornell University — Ithaca, NY
Ph.D. Applied Physics — 8/2004 - 8/2014

North Carolina State University — Raleigh, NC
B.S. Applied Mathematics, B.S. Physics — 8/2000 - 5/2004