Erin De Pree, Ph.D. | Data Scientist

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SUMMARY

I am a data scientist and experienced problem solver looking to improve the world by providing accurate data analysis and insights to aid in constructing easily implemented solutions. I use my experience as a physics college professor to mentor others, understand and negotiate with stakeholders with different backgrounds and priorities, and experience researching best practices to empower employee contributions to sustainable solutions.

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SKILLS

Data Science Skills | exploratory data analysis, modeling, machine learning, unsupervised machine learning, differential equations, partial differential equations, linear algebra, group theory
Tools or Languages | Python (pandas, numpy, matplotlib, seaborn, plotly, dash, scikit-learn, streamlit, keras), SQL (SQLite and TAP), Mathematica (modules, 2D and 3D plots, animations), LaTeX (TikZ, class/style files, BibTeX), Google Colab, Jupyter Lab, Hugging Faces
Additional Skills | curious, self-motivated, problem solver, strong communicator, team player, mentor, and teacher

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PROJECTS

CAPSTONE: Unsupervised Clustering of Countries | GitHub | Aug – Sep 2025
Technology: python, pandas, numpy, plotly, jupyter lab, keras, scikit-learn, etc

- In progress

Classifying Kidney Images Using Neural Networks | GitHub | Aug 2025
Technology: python, pandas, keras, matplotlib, etc
Built a convolutional neural network from scratch to classify kidney CT scans as healthy, cyst, stone, or tumor.

- Constructed a neural network with an exponentially decaying learning rate, regular checkpoints to save the model as training progressed, and over 38,000 trainable parameters
- Achieved over 90% with accuracy, precision, recall, and F1-score.

Unreported Deaths from Extreme Temperatures | GitHub | Aug 2025
Technology: python, matplot lib, seaborn, pandas, numpy, scikit-learn, etc
Used weather satellite data to identify extreme weather temperature events. Built a model from the known extreme temperature deaths report to the International Emergency Database in Belgium.

- Organized the group's efforts as the group leader, ran the GitHub repo, and kept the group on track to complete our project.

Ames Housing Sales Prices | GitHub | July and Sep 2025
Technology: python, matplot lib, seaborn, pandas, numpy, scikit-learn, etc
Used the Ames, Iowa housing data to extract features to predict house's sale price.

Astrometry of Double Stars | article | 2023 – 2025
Technology: SQL (ADQL with TAP protocol on VizieR), telescope, Google Sheets, Mathematica
Measured positions of double stars (appear close together in the sky) and compared with historic data to determine if the system is gravitational bound together or happens to appear close together.

- Wrote article: discovered a third star close enough to potentially form a binary star pair with one of the original stars
- Mentored 5 undergraduate theses, additional paper to be published later this fall

Physics Majors and Minors Database | 2013 – 2022
Technology: Google Fusion Tables, Google Sheets
Compiled complete list of physics majors and minors, both currently enrolled and alumni, track alumni's current work place

- Plotted graduates per year with a 5 year running average, tracked department award winners, pivot tables of alumni characteristics

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EXPERIENCE

Data Science Fellow | Data Science Bootcamp | General Assembly | June – September 2025

Visiting Associate Professor of Physics | Bates College | Lewiston, Maine | 2022 – 2025
Recruited to provide support and ensure course coverage during a period of high faculty turnover

- Mentored new faculty as they adjusted to Bates
- Maintained a welcoming a supportive environments with students
- Taught introductory physics to upper-level elective in quantum mechanics

Associate Professor of Physics | St. Mary's College of Maryland | St. Mary's City, Maryland | 2008 – 2022
Promoted to Associate Professor in 2013, Chair of the physics department 2020 – 2021

- Improved learning environment by developing an in-class inclusion and anti-bullying workshop, dramatically increased graduation rates among underrepresented groups in physics.
- Created a 10 part career program that helps students explore post-college options resulting in an increase of student research participation from 60% to 95%.
- Developed a semester-long computer programming course to solve a range of physics problems using Mathematica which was self-taught

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EDUCATION

Data Science Bootcamp | General Assembly | Remote — Sep 2025
Ph.D., physics | The College of William & Mary | Williamsburg, Virginia — 2008
M.S., physics | The College of William & Mary | Williamsburg, Virginia — 2004
B.S., physics and mathematics majors | Hillsdale College | Hillsdale, Michigan — 2003
Graduated with highest honors, honors in mathematics, honors program member, 3.9 GPA overall, 4.0 in math and science