Marcos Ortiz
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PROFESSIONAL SUMMARY

I am a data scientist with a PhD in Mathematics, a passion for learning, and more than 15 years of practice solving complex problems and communicating results. I have experience identifying, collecting, and visualizing real-world data, as well as in applications of neural networks and other deep learning tools to construct models and generate actionable insights and results. I am proficient in Python, SQL, and statistics, and I am an excellent collaborator.

CERTIFICATIONS AND PROJECTS

Deep Learning Boot Camp for PhDs, The Erdos Institute   *April 2024*

- Awarded Top Project overall
- Implemented advanced retrieval augmented generation (RAG) techniques using open source tools
- Improved the relevance of retrieved documents across a variety of metrics, while managing sub-second retrieval times on a massive unstructured text dataset
- Tools: data handling (Polars), vector databases (LanceDB), embedding models (LangChain, Hugging Face, BERT)

Data Science Boot Camp for PhDs, The Erdos Institute   *November 2023*

- Recognized as the 1st Place Project by a panel of experts across a variety of disciplines
- Collected and processed real world weather, surface water, and groundwater data
- Built a recurrent neural network model that can make accurate predictions of groundwater levels well outside (several years) beyond the training data
- Tools: data handling and visualization (Pandas, Matplotlib), neural networks (TensorFlow, Keras, Scikit-Learn)

Deeplearning.AI and Stanford University Certificate, Coursera   *July 2023*

- ML Specialization: Unsupervised Learning, Advanced Learning Algorithms, Supervised Machine Learning

WORK EXPERIENCE

Assistant Professor of Mathematics, Colorado Mesa University   *August 2018 - Present*

- Partnered with Institutional Research to use incoming student data and past student performance to improve student placement in first math courses
- Earned an overall score of 95% on student evaluations across all courses taught
- Awarded the highest possible faculty performance rating, Exceptional, for the past 5 years in a row.

Visiting Assistant Professor of Mathematics, Grinnell College   *August 2015- July 2018*

- Mentored advanced undergraduate summer research projects in topology and topological data analysis.
- Developed courses, and student projects for Linear Algebra, Number Theory, Topology, and Abstract Algebra.

SKILLS

- **Technical**: Python, C++, SQL, Excel, LaTeX, git
- **Python Libraries**: NumPy, Pandas, Polars, Matplotlib, Seaborn, TensorFlow, Keras, Scikit-learn, PyTorch, LanceDB
- **Mathematics**: Research, Topology, Experimental Mathematics, Topological Data Analysis, Linear Algebra, Abstract Algebra, Analysis, Number Theory, Differential Equations, Vector Calculus, Statistics

EDUCATION

PhD, Mathematics   *June 2015*
University of Iowa

B.Sc., Mathematics   *June 2009*
State University of New York at Buffalo

B.A., Psychology   *June 2004*
University of North Carolina at Wilmington