KYLIE HEFNER

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SUMMARY

Detail-oriented data scientist with a Master's in Computational and Data Sciences and hands-on experience in machine learning, statistical modeling, and data analysis. Proficient in Python, R, SQL, and C++ with a strong foundation in both computational techniques and applied analytics. Passionate about applying data science to real-world challenges in research, education, and technology.

TECHNICAL SKILLS

Python, R, SQL, C++; NumPy, Pandas, Scikit-Learn, TensorFlow, PyTorch; Tableau, Matplotlib, Seaborn; AWS, PostgreSQL, MongoDB; Machine Learning, Statistical Modeling, HPC, Numerical Methods

PROJECTS

Hyperbolic Restricted Boltzmann Machine for Hierarchical Learning　　　　　　May 2025
Master's Capstone Project | Chapman University
- Developed a Restricted Boltzmann Machine operating in hyperbolic space to better capture hierarchical structure in WordNet data
- Engineered energy and sampling functions using Riemannian geometry
- Demonstrated improved reconstruction accuracy compared to Euclidean RBMs

Tools: Python, NumPy, scikit-learn, NLTK, Matplotlib

Adaptive Mesh Refinement for the Advection-Diffusion Equation　　　　　　Dec 2024
High Performance Computing Final Project | Chapman University
- Built a 2D PDE solver using quadtree-based adaptive mesh refinement (AMR) in C++
- Implemented parallelization with OpenMP and MPI, improving runtime and scalability for large grids

Tools: C++, OpenMP, MPI

NLP-Based Song Generation Using LSTM　　　　　　May 2024
Natural Language Processing Final Project | Chapman University
- Created a lyrics-generating LSTM model trained on artist-specific datasets
- Preprocessed lyrics dataset and applied tokenization, sequence modeling, and temperature sampling

Tools: Python, TensorFlow, Keras

EXPERIENCE

Expert Contributor - Applied Mathematics (Contract)　　　　　　Feb 2025 - Apr 2025
Snorkel AI　　　　　　Remote
- Authored and reviewed applied mathematics content to train AI models, ensuring clarity, precision, and educational value

Intermediate Tutor - Statistics & Quantitative Reasoning　　　　　　Apr 2023 – Jan 2024
The Princeton Review　　　　　　Remote
- Tutored high school and college students in statistics, probability, and mathematical reasoning; tailored instruction to student learning goals

EDUCATION

Chapman University – M.S. in Computational and Data Sciences　　　　　　Aug 2023 - Jun 2025

University of California, Berkeley Extension – Certificate in Data Analytics　　　　　　Mar 2022 - Sep 2022

University of California, Los Angeles – B.S. in Mathematics for Teaching　　　　　　Sep 2017 - Jun 2021