Kaloyan Parvanov

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Summary

Recent MS graduate in Applied Mathematics from CU Boulder, specializing in machine learning and data science. Proficient in Python, R, SQL, and data visualization tools. Experienced in developing machine learning models, performing statistical analysis, and automating data workflows. Adept at collaborating with stakeholders to derive actionable insights and drive data-driven decisions. Eager to contribute to innovative projects in a dynamic team environment.

Education

Lake Forest College Aug. 2016 – May 2020
B.A. Mathematics, B.A. Economics *Lake Forest, IL*

University of Colorado Boulder Aug. 2021 – May 2024
M.S. Applied Mathematics, ***Focus:*** *Data Science & Machine Learning* *Boulder, CO*

Technical Skills

Programming Languages: Python, R, SQL, C++, Java, LaTeX
Libraries/Frameworks: TensorFlow, PyTorch, scikit-learn, pandas, NumPy, SciPy, Matplotlib, Plotly
Machine Learning: Regression, Classification, Clustering, Neural Networks, Ensemble Methods
Statistical Analysis: Hypothesis Testing, Time Series Analysis, Bayesian Inference
Development Tools: Git, Docker, Jupyter Notebooks, VS Code
Data Visualization: Power BI, Tableau, QlikView/QlikSense

Projects

ODE Solution via PINNs | *Python, TensorFlow, SciPy* Oct. 2023 – Dec. 2023
- Solved damped unforced pendulum problem with PINNs, demonstrating effectiveness in complex ODEs.
- Generated synthetic pendulum dynamics data using *scipy.solve_ivp* and implemented a PINN in TensorFlow.

Work Experience

Graduate Teaching Assistant Aug. 2021 – May 2024
University of Colorado Boulder *Boulder, CO*
- Assisted in Calculus I-III and Diff. Eq. classes, promoting student success.
- Led weekly recitations to enhance understanding of complex concepts.

Data Analyst Aug. 2020 – Jan. 2021
Straight Forward Concepts *Evanston, IL*
- Developed and validated ML models for customer segmentation, increasing prediction accuracy by 15%.
- Automated data preprocessing workflows using Python, reducing processing time by 30%.
- Conducted extensive statistical analysis to identify key trends, providing actionable insights to stakeholders.
- Collaborated with cross-functional teams to define data requirements and deliver customized solutions.

Data Analyst June 2019 – July 2019
Straight Forward Concepts *Evanston, IL*
- Built CVS's overhead dataset for a machine learning classifier.
- Crafted scripts boosting efficiency in data processing pipelines.

Research Experience

James Rocco Quantitative Research Fellowship Sept. 2018 – Oct. 2020
Lake Forest College *Lake Forest, IL*
- Analyzed market shifts via PCA on a decade of S&P 500 data for regime detection.

Graduate Research in High-Dimensional Probability May 2023 – Oct. 2023
University of Colorado Boulder *Boulder, CO*
- Formulated spectral norm probability bounds for (m,p) matrices in high-dimensional spaces.