Kaloyan Parvanov

Boulder, CO
781-346-5802 | parvanovkaloyan@gmail.com
linkedin.com/in/kparvanov | github.com/parvanovkp | kparvanov.com

Summary

MS in Applied Mathematics from CU Boulder, specializing in Machine Learning and Data Science. Proficient in Python, R, and SQL, with experience in statistical analysis, predictive modeling, and financial mathematics. Skilled in developing probability models, performing risk analysis, and implementing machine learning algorithms for large datasets.

Education

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

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

Phillips Academy Andover Aug. 2014 – June 2016
High School Diploma *Andover, MA*

Technical Skills

Programming Languages: Python, R, SQL, C++, Java, JavaScript, LaTeX
Libraries/Frameworks: TensorFlow, PyTorch, scikit-learn, pandas, NumPy, SciPy, Matplotlib, FastAPI
Data Visualization: Power BI

Projects

MathBuddy: AI-Powered Math Tutor | *Next.js, FastAPI, Python* Aug. 2024 – Sept. 2024
- Engineered a full-stack AI tutor utilizing GPT-4o for main interactions and GPT-3.5-Turbo for result extraction and difficulty estimation.
- Implemented serverless architecture with Next.js frontend and FastAPI backend, integrating OpenAI and Wolfram Alpha APIs for enhanced problem-solving capabilities.

Tic-Tac-Toe-Minimax-Alpha-Beta-Pruning | *Python, Pygame, NumPy* June 2024
- Developed a Tic-Tac-Toe game with an AI opponent using the Alpha-Beta Pruning Minimax algorithm.
- Implemented optimal move selection for the AI, improving decision efficiency by reducing evaluated nodes.

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 and Differential Equations classes.

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.