Michael Baluja

Machine Learning and Data Science

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EDUCATION

B.S. Cognitive Science
University of California, San Diego

07/2019 - 06/2021   *La Jolla, CA*

- Focus: Machine Learning and Neural Computation
- Major GPA: 3.912

M.S. Electrical and Computer Engineering
University of California, San Diego

08/2021 - 06/2023   *La Jolla, CA*

- Focus: Machine Learning and Data Science

WORK EXPERIENCE

Research Assistant
UC San Diego - CMRR STAR Group

01/2020 - Present   *La Jolla, CA*

- Improve deep reinforcement learning framework to design error protection weight masks for text classification networks trained on two different classification tasks for multiple data sets.
- Increase network model performance by up to 300% in the presence of simulated weight errors.
- Communicate experimental results in conference papers, posters and presentations for four undergraduate conferences.

Instructional Assistant
UC San Diego

10/2020 - 12/2020   *La Jolla, CA*

- Familiarized upward of 100 students with data science topics including python, git, statistics, and machine learning.
- Co-instructed 18 discussion sections covering course material for groups of up to 10 students.
- Assessed individual course final projects across more than a dozen data science questions.

Lifeguard Lead/Instructor
Legoland California

06/2018 - 07/2019   *Carlsbad, CA*

- Instructed, managed, and tested groups of up to 75 employees on bi-monthly safety training.
- Planned and implemented industry-standard coursework for three-day certification training.
- Managed team to ensure proper operation through park with an average daily attendance of 3,000 guests.

SKILLS

Python   C++   MATLAB   SQL   NumPy   Pandas   Scikit-learn   PyTorch   git   Unix   Machine Learning   Data Science

PERSONAL PROJECTS

Empirical Classifier Comparison for NLP
- Tested four machine learning classification techniques on three different metrics for performance ranking.
- Analyzed and explored three data sets for usability to ensure proper functionality of trained models.

SwiperNet
- Introduce program to allow individuals to navigate popular dating site using three different hand gestures.

Python Lyrical Analysis
- Integrated python libraries to aggregate lyric information, extract necessary features, and present user-chosen sentiment analysis for tens of thousands of artists.
- Designed pipeline for data collection, intake, cleaning, analysis, and graphical presentation of results.

Job Automation Analysis
- Led team through data analysis to analyze three potential correlates for job automation in the United States for over 700 occupations across 25 years.
- Utilized statistical techniques such as geospatial analysis, hypothesis testing, and multiple linear regression.

Deep Reinforcement Learning for 2048
- Created python-based player environment of popular game 2048 using NumPy.
- Engineered custom neural network to learn value of in-game moves based on game states and actions.
- Implemented popular learning algorithms such as Monte Carlo and Temporal Difference techniques to simulate game play and learning process.

ORGANIZATIONS

California Louis Stokes Alliance for Minority Participation in Science, Engineering and Mathematics (06/2020 - Present)

INTERESTS

Human-centered data science

Computer Vision

Natural Language Processing