

Michael Baluja

Machine Learning and Data Science

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EDUCATION

M.S. Electrical and Computer Engineering

University of California, San Diego

08/2021 - 06/2023

La Jolla, CA

- Focus: Machine Learning and Data Science
- GPA: 3.77

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

WORK EXPERIENCE

Data Assistant

UC San Diego - Library Data Curation Team

06/2021 - Present

La Jolla, CA

- Collect over 125k data points across eight public research repository APIs.
- Create and publish adaptive open source user interface for greater scientific community to mass collect research data.
- Formalize methodologies for journal submission and data curation conference presentations.
- Collaborate with team of three data curators to understand best practices for reusable research.

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.

SKILLS

Python

MATLAB

SQL

git

NumPy

Pandas

Scikit-learn

PyTorch

Unix

selenium

tkinter

Deep Learning

Reinforcement Learning

PROJECTS

PyCurator (06/2021 - Present)

- Standardize data collection pipeline for web scraping and API querying by creating rich set of base classes.
- Design public user interface to allow easy access to common online research repositories.
- Utilize best practices to ensure computational simplicity during run time.

Deep Reinforcement Learning for 2048 (03/2021 - 06/2021)

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

Empirical Classifier Comparison for NLP (10/2020 - 12/2020)

- 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.

Job Automation Analysis (04/2020 - 06/2020)

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

ORGANIZATIONS

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

INTERESTS

Human-centered data science

Natural Language Processing