John Wesley D. Pabalate

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San Diego, CA

Education

University of California, San Diego - La Jolla, CA — Fall 2022 - Present
B.S. Cognitive Science specializing in Machine Learning and Neural Computation
Double Minor: Data Science and Business Analytics

Experience

Rob Knight Lab - La Jolla, CA — Feb. 2025 - Present

Analyst

- Aggregated, cleaned, and standardized microbiome datasets from over 100+ international studies, enabling large-scale statistical analysis of microbiome diversity and its correlations with disease.
- Processed and analyzed more than thousands of data points using Python and advanced statistical techniques to uncover key microbiome patterns linked to health outcomes.

UCSD Undergraduate Economic Society - La Jolla, CA — Dec. 2024 - Present

Technology Operations Committee (Website Developer)

- Designed, developed, and maintained the official website of the UCSD Undergraduate Economic Society using a combination of JavaScript, HTML, and CSS, enhancing user experience and increasing engagement by 20%.
- Collaborated with a team of 5 committee members to design and implement new features, such as resource pages and member profiles, resulting in a 35% increase in user engagement during recruitment and event seasons.

San Diego Biomedical Research Institute (Dr. Gregory Seumois' Lab) - La Jolla, CA — Nov. 2024 - Present

Lab Research Assistant

- Executed over 25+ laboratory experiments, including single-cell analysis, to support groundbreaking research on respiratory diseases such as asthma, contributing to improved understanding of disease mechanisms.
- Analyzed and organized clinical datasets from over 1000+ samples, including airway sputum and bronchoalveolar lavage, ensuring 100% data accuracy and readiness for publication in high-impact scientific journals.
- Assisted our bioinformatician in creating complex visualizations and charts using R programming, revealing immune response patterns to better understand respiratory diseases and improve the interpretation of clinical datasets.

Projects

Bone Fracture Detection — Oct. 2024 - Dec. 2024

- Implemented pre-processing techniques (e.g., noise removal, contrast improvement, edge detection) and advanced feature extraction methods like GLCM, LBP, and HOG, enhancing bone fracture detection accuracy.
- Utilized PCA for dimensionality reduction and fine-tuned a ResNet-based deep learning model, attempting to achieve high classification performance on medical imaging datasets by optimizing hyperparameters and improving accuracy.

Project Taylor Swift — Feb. 2024

- Designed and implemented data visualization tools to analyze and present insights from Taylor Swift's discography, enhancing user engagement, interactivity, and overall understanding of musical trends over time.
- Generated a song recommendation system that uses machine learning algorithms to tailor recommendations according to user tastes, increasing user retention and overall satisfaction with personalized music discovery.
- Implemented accessibility and engagement with Taylor Swift's discography by developing an interactive lyric search engine that makes it simple for people to look up and examine songs she has crafted.

Skills

Languages:

Python, Java, SQL, R, HTML, Javascript, CSS

Technologies & Tools:

Microsoft Excel, Machine Learning, Pandas, Numpy, Data Structures and Algorithms, Data Visualization (matplotlib, Tableau), Data Wrangling, git/GitHub, Jupyter Notebooks, Visual Studio Code, Terminal