Vincentius Daniel Budidharma

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Education

University of California San Diego September 2023 - March 2027

Bachelor of Science, double major in Data Science and Economics. GPA: 4.0

Relevant Coursework: Data Structures and Algorithms, Object-oriented Programming, Practice and Application of Data Science

Skills

Languages: Java, Python, R, SQL, MATLAB, HTML/CSS, JavaScript
Tools: Amazon Web Services (AWS), Tableau, Power BI, Git, Jupyter, PyCharm, IntelliJ
Libraries: Pandas, sklearn, PyTorch, NumPy, Matplotlib, React

Experience

Full-stack Developer January 2025 – Present

Engineers for Exploration: Acoustic Species ID

- Back-end developer for the desktop app that displays the output of our species identification machine learning model based on sound recordings
- Enhanced user experience by providing an interactive UI for users to run python scripts and query from the SQLite database using Node.js and Next.js frameworks
- Recorded a 5 minute demo of the desktop app to present to clients such as the San Diego Zoo

Undergraduate Data Science Tutor March 2024 – Present

University of California San Diego

- Tutored for DSC10: Principles of Data Science and DSC30: Data Structures and Algorithms
- Explained concepts in Java, Python, Pandas, linear regression, probability, hypothesis testing, and data structures and algorithms to 100+ students per quarter
- Helped debug students' code by reading through them and studying their logic
- Authored detailed solution guides for past exams and published them to the practice website and github (https://practice.dsc10.com/wi24-final/index.html)
- Beta-tested 6 hour long final projects, 3 hour long final exams, and weekly assignments. Gave helpful feedback to improve the questions

Economics Research Assistant January 2025 – Present

Decentralizing Development: Structural Transformation Effects of Indonesia's Village Fund

- Found, parsed, and cleaned Indonesian GDRP data kept across multiple pdf files by the Indonesian Bureau of Statistics into an easily analyzable csv file using Pandas and pdfplumber
- Created line graphs that visualize the time series data of GRDP, population, and village fund of each Indonesian district using R
- Combed through multiple laws and old news sources to research the history of Indonesia's National Program for Community Empowerment (PNPM). Reached out to government and past researchers to find old spending data

Projects

Foodbook October 2024

- Worked in a team of 4 to develop Foodbook, an app that scans menu items and categorizes them based on their health
- Built the main functionality, used PyTesseract OCR to convert images of menus into text, utilized fuzzy matching to match menu item names with food item names in the dataset
- Used Pandas and sklearn K-Nearest Neighbors to categorize the food items into different health categories

Research Paper: Simple Piezoelectricity-Based Heart Rate Monitor September 2022 – March 2023

- Wrote a research paper on the development and performance of a piezoelectricity-based heart rate monitor
- Designed and built using an Arduino and a 16-bit ADC to gather the patient's pulse signal
- Smoothed the signal using a moving average filter and calculated the patient's heart rate using scipy
- Achieved readings with a less than 5% margin of error compared to commercial oximeters
- Modeled a sigmoid function to project that if 10,114 of this device were mass produced, its price would be equal to the price of commercially available oximeters
- Presented the results using simplified terms and comprehensive explanations to a layman audience of 20 people