CABRERA, JEN JADE B.

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EDUCATION

San Pablo Colleges — Hermanos Belen Street, San Pablo City
Bachelor of Science in Computer Science — September 2022 - Present

INTERESTS AND TECHNOLOGIES

Interests: **Data Science**, **Web Development**, App Development, **DevOps**, Creative Media, Linguistics

Technologies: **Python**, JavaScript, **TypeScript**, R, Java, **PHP**, Dart, CSharp, **Docker**, Arduino, Bash, HTML, CSS, **React**, **Next.js**, CodeIgniter, **Laravel**, Bootstrap, **TailwindCSS**, DaisyUI, **ShadcnUI**, **NextUI**, Flutter, JavaFX, PostgreSQL, MySQL, Supabase, PocketBase, Flask, Flask-RESTX,**OpenAPI**, Swagger, Streamlit, Gplot2, **Pandas**, NumPy, **Seaborn**, Plotly, **Scikit-learn**, **Git, Jupyter**, Linux, **Ubuntu**, Zorin, **Tmux**, **Neovim**, VSCodium, Photoshop, InDesign, Premiere

WORK EXPERIENCE

Machine Learning Engineer & Backend Developer — September - December 2024

- Collaborated with a masteral student to develop a **document evaluation system** using **Natural Language Processing (NLP)** to assess legal documents for project proposals.
- Designed a pipeline to tokenize and embed document text, extract the most relevant sentences for each question using **cosine similarity**, and validate responses through **Natural Language Inference (NLI)**.
- Built the backend infrastructure using **Flask**, **Flask-RESTX**, and **Docker**, deployed via **Gunicorn**, and documented APIs with **OpenAPI/Swagger**.
- Conducted exploratory data analysis and prototyping using **Jupyter Notebook** to refine the NLP pipeline.

Flutter & React Developer — June - December 2024

- Developed a **kiosk application** using **Flutter/Dart** featuring a virtual tour functionality integrated via a web view.
- Built the accompanying **web application** for the virtual tour using **React** and **TypeScript**, incorporating **Pannellum** for 360° panorama views, and designed the UI with **ShadcnUI** and **TailwindCSS**.
- Utilized **TanStack Query** for efficient state management and optimized API interaction for seamless user experiences.
- Delivered a fully functional system tailored to enhance organizational engagement through interactive features.

Java Developer — May - November 2024

- Developed an **attendance system** using **JavaFX** for the frontend, **ActiveJDBC** for database interactions, and **Arduino** for hardware integration.
- Designed an intuitive user interface for efficient attendance tracking and seamless communication with hardware components.
- Delivered a complete solution with real-time attendance recording and reporting features.

Full Stack Developer — November 2023 - May 2024

- Developed a **virtual storefront application** for a Japan-based jewelry business using **Next.js**, **TailwindCSS**, **ShadcnUI**, **Supabase**, **PostgreSQL**, and **TanStack Query**.
- Implemented **role-based access** and **Supabase Row Level Security** to ensure secure data access for different user roles.
- Integrated **Maya Payment** for seamless online transactions.
- The project was ultimately discontinued due to unforeseen circumstances.

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PROMINENT PROJECTS

Anonalyze: An AI and NLP-Enhanced Platform for Sentiment and Insight Extraction 2024

- **Project repository: https://github.com/hyoaru/anonalyze**
- Designed and implemented a **supervised machine learning model** using **Pandas**, **NumPy**, **Scikit-Learn**, and **Jupyter Notebook** with a **Multinomial Naive Bayes** classifier. The model predicts the **sentiment** and **emotion** of sentences using an emotion dataset from Kaggle.
- Developed an **API** for the model using **Flask**, **Flask-RESTX**, **Gunicorn**, **Docker**, and documented it using **OpenAPI/Swagger**.
- Built the core **backend API** using **PHP Laravel** and **OpenAPI/Swagger** for robust data handling and scalability.
- Developed a **web client** using **TypeScript**, **React**, **TanStack Router**, **TanStack Query**, **TailwindCSS**, and **ShadcnUI** for a dynamic, responsive user interface.
- Designed the platform to enable **executives** to post questions and allow their **subjects** to respond. The platform predicts the **sentiment** and **emotion** of the responses, extracts **key concepts**, and generates **keywords** and **keyphrases**.
- Incorporated a **summarization feature** using a **Large Language Model (LLM)** from OpenAI to generate summaries of the entire thread.

Beyond Decor: A Portfolio and Inquiry Website System 2023

- **Project repository: https://github.com/hyoaru/beyond-decor**
- Developed a **portfolio and inquiry website system** for **Beyond Decor**, a party and entertainment service, using **ReactJS**, **Next.js**, **DaisyUI**, **TailwindCSS**, and **PocketBase**.
- This project served as an eye-opener to the **composability design principle** in **React** and deepened my understanding of **Next.js** philosophies for building optimized, scalable web applications.
- The website showcases **Beyond Decor's services**, allowing users to explore party and entertainment options, inquire about services, and get in touch with the company.

Philippine Poverty Area Estimates Choropleth 2023

- **Project repository: https://github.com/hyoaru/philippine-poverty-area-estimates-choropleth**
- Developed a **web application** providing a visual representation of the estimated magnitude of poor families in the Philippines using a **choropleth map**.
- The map visualizes data from the years **2006**, **2009**, **2012**, and **2015** to give users insights into the poverty distribution across regions.
- **Data source:** United Nations Office for the Coordination of Humanitarian Affairs (**UN OHCA**) and **Philippine Statistics Authority (PSA)**.
- The project was built using **Python**, **Jupyter Notebook**, **NumPy**, **Pandas**, and **Streamlit**.

Breast Cancer Classification: Supervised Machine Learning 2022

- **Project repository: https://github.com/hyoaru/sparta-supervisedml-binary-classification**
- Completed a **peer-reviewed machine learning task** as part of the **Smarter Philippines through Data Analytics R&D, Training and Adoption (SPARTA)** program on the course **Data Science and Machine Learning with Python**.
- Implemented **binary classification** using the **Breast Cancer Wisconsin Diagnostic Dataset**, employing machine learning techniques to predict the presence of cancer based on feature data.
- This project sparked my interest in **machine learning** and helped me discover my passion for the field. As a **first-year scholar** in the SPARTA program, I had the opportunity to collaborate with peers who were already working professionals, which enriched my learning experience and broadened my perspective.

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CERTIFICATIONS

Google Data Analytics Capstone: Complete a Case Study	July 2023 · Google
Data Analysis with R Programming	June 2023 · Google
Share Data Through the Art of Visualization	May 2023 · Google
Analyze Data to Answer Questions	April 2023 · Google
Process Data from Dirty to Clean	March 2023 · Google
Prepare Data for Exploration	January 2023 · Google
Foundations: Data, Data, Everywhere	December 2022 · Google
Ask Questions to Make Data-Driven Decisions	November 2022 · Google
Computing in Python	February 2022 · Project SPARTA PH
Computing Microspecialization Pathway	September 2022 · Project SPARTA PH
Data Science and Machine Learning Using Python	September 2022 ·Project SPARTA PH
Data Visualization Microspecialization Pathway	September 2022 · Project SPARTA PH
Methods and Algorithms Microspecialization Pathway	September 2022 · Project SPARTA PH
Build Python Web Apps with Flask	August 2022 · DICT Philippines
Analyze Data with Python	July 2022 · DICT Philippines
Basic Statistics With Python	July 2022 · DICT Philippines
Experimental Design and Analysis	July 2022 · Project SPARTA PH
Programming for Beginners Using Python	July 2022 · Project SPARTA PH
Programming for Intermediate Users Using Python	July 2022 · DICT Philippines
Visualize Data with Python	July 2022 · DICT Philippines
Statistical Analysis and Modeling Using SQL and Python	May 2022 · Project SPARTA PH
Computing in Python	February 2022 · Project SPARTA PH
Data Visualization Using Tableau and Python	February 2022 · Project SPARTA PH
SQL for Business Users	February 2022 · Project SPARTA PH
Storytelling Using Data	December 2021 · Project SPARTA PH
Dashboards and Drill-Down Analytics	September 2021 · Project SPARTA PH
Data Visualization Fundamentals	September 2021 · Project SPARTA PH
Data Management Fundamentals	March 2021 · Project SPARTA PH
Essential Excel Skills for Data Preparation and Analysis	January 2021 · Project SPARTA PH
Getting Grounded on Analytics	December 2020 · Project SPARTA PH