Juana Wong

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EDUCATION

The City College of New York, CUNY — **New York, NY**
B.S. Computer Science, Mathematics Minor — *Expected December 2025*
- GPA: 3.3 / 4.0

PROFESSIONAL EXPERIENCE

CUNY Tech Prep — **New York, NY**
Data Science Fellow — Jul 2025 – *present*
- Applied end-to-end techniques in data preparation, exploratory data analysis (EDA), feature and prompt engineering, machine learning, statistical modeling, and data visualization on interactive dashboards using **Python** and **Streamlit**.

The Lohman Laboratory, The City College of New York — **New York, NY**
Web Designer / Full Stack Web Developer — Nov 2024 – Oct 2025
- Technologies: **TypeScript**, **JavaScript**, **React**, **Next.js**, **Tailwind CSS**, **PostgreSQL**, **Prisma ORM**, **NextAuth, Vercel**.
- Developed a site for academic research to host, filter, create, insert, and manage (CRUD) comprehensive taxonomic and geographic data on butterfly mimicry for 19,000+ species, supporting professional classification and research workflows.

PROJECTS

TummyTracker: Build a Healthier Lifestyle! | Deployed App🔗 | Presentations🔗 | Fall 2025
- Built a **Python-Streamlit** app in an Agile team, enabling users to upload food products with **OCR Space** text extraction to track historic food and ingredient consumption for personalized health insights.
- Integrated **retrieval-augmented generation** (RAG) using **Gemini** for dietary risk and pattern analysis, retrieving context from **Firebase Firestore** for accurate, context-aware chatbot responses.
- Implemented multi-profile management for health monitoring on an interactive dashboard using **pandas**, **NumPy**, **Plotly**, and **Altair** for visualizations and long-term analytics.

Specialty Candy Shop: Data-Driven Plan to Prevent Inventory Shortages | Report🔗 | Presentation🔗 | Summer 2025
- Integrated **SQL Server** data tables spanning logistics, sales, targets, and product information, using **Python** libraries such as **Pyodbc**, **Pandas**, **NumPy**, **Matplotlib** and **Seaborn**, finding optimization strategies and critical operational issues.
- Designed a range-based inventory strategy using **Holt-Winters exponential smoothing** (**statsmodels**) to forecast demand with fixed seasonality, guiding long-term planning on inventory and capacity decisions to a 5-year operational lead time.

Random Forest Analysis of Health & Poverty Dynamics, U.S. (2015-2025) | Report🔗 | Presentation🔗 | Spring 2025
- Synthesized and cleaned 35,000+ multi-source US health, poverty and population records (Google PDFM, County Health Rankings) using **Python**, **Pandas**, **NumPy** & **DuckDB**, with complex joins, data mappings and missing data remediation.
- Trained multi-target **Random Forest** models (**Scikit-learn**), using imputation and feature importance to identify smoking rates as the top predictor of poor mental & physical health days; visualized results with **Matplotlib** & **Seaborn**.

Butterfly Species Classification Using Transfer Learning with ResNet50 | Report🔗 | Presentation🔗 | Spring 2025
- Achieved a 69.3% training and 72.4% validation accuracy by training a custom **convolutional neural network** (SimpleButterflyCNN) model using **PyTorch** and **Torchvision** to classify 9,000+ butterfly images across 75 species.
- Applied transfer learning with the **ResNet50**, significantly improving classification results to a 96.7% training and 91.8% validation accuracy (Precision: 0.92, Recall: 0.91, F1-score: 0.91, Support: 1300), amplifying generalization accuracy.

TECHNICAL SKILLS

Data Analysis & Visualization: Python, SQL, Pandas, NumPy, Matplotlib, Seaborn, Plotly, Altair, Streamlit
Machine Learning & Statistical Tools: Scikit-learn, Google Gemini API
Databases & Data Management: Firebase/Firestore, Supabase, PostgreSQL
Collaboration & Development Tools: Git/Github, Visual Studio Code, Jupyter Notebooks, Android Studio, Google Workspace
Certifications: CodePath | Certificate in Android Development (Summer 2025)🔗