

# JAVIER HENGDA WU LIN

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## EDUCATION

### University of Barcelona

B.Sc. Computer Engineering, GPA 7/10

Barcelona, ES

Sep 2022 – Jun 2026 (expected)

- Key courses: Data Structures & Algorithms, Advanced Algorithms, Operating Systems, AI, Computer Vision, Software Design, Distributed Systems, Databases.

## PROJECTS & RESEARCH

### Battleship Game Web Application (*Python · Django · Vue.js · Pinia · JWT*)

2025

- Developed a full-stack multiplayer Battleship game with Django REST Framework backend and Vue.js 3 frontend, supporting real-time single-player (vs AI) and multiplayer modes with turn-based gameplay across 4 distinct game phases.
- Engineered a probabilistic AI opponent with hunt/target mode algorithms, providing challenging single-player gameplay with strategic ship placement and intelligent targeting after successful hits.
- Implemented JWT-based authentication, RESTful API design with nested routers, and comprehensive state management using Pinia for real-time game synchronization and session recovery.
- Delivered responsive drag-and-drop ship placement interface with 45+ pytest unit tests achieving full test coverage across game logic, API endpoints, and multiplayer flow.

### Sticker-Sales Forecasting (*Python · XGBoost · Optuna*)

2024-2025

- Engineered a forecasting pipeline (230k rows across 6 countries and 7 years) using lag features, rolling averages, and GDP-based seasonality decomposition.
- Tuned an XGBoost model with Optuna (50 trials + TimeSeriesSplit CV), reaching a **MAPE of 4.8%**.
- Packaged preprocessing and training steps into a reproducible scikit-learn Pipeline; deployed with `main.py` and pickled model.

### CookBookApp (*Java · Android · Firebase · Git*)

Jan – Jun 2024

- Built a recipe manager app with offline caching, user-auth, and search; used MVVM and Clean Architecture for maintainability.
- Integrated Firebase Auth and Firestore to support user-specific data and secure cross-device sync.
- Led a 4-member Agile team, planning sprints and delivering 95% of scoped features over 6 iterations.

### imUB – Movie & Series Manager (*Java 17 · JavaFX · SQLite · MVC*)

2023-2024

- Developed a 30-class desktop application to manage large media libraries, track watched items, and display live Top-10 rankings.
- Used 4 GoF patterns to modularize logic and enable real-time UI updates; contributed over 75% of ≈8k LOC.
- Reduced query latency to <150ms by optimizing the DAO layer with batched access and indexed queries.

## TECHNICAL SKILLS

**Languages:** Python, Java, JavaScript/TypeScript, C/C++, SQL

**Web & APIs:** Vue, Node.js/Express, Django, FastAPI, REST / GraphQL, gRPC

**Cloud & DevOps:** GCP, Docker, Kubernetes, Terraform, GitHub Actions, CI/CD

**Databases & Caching:** PostgreSQL, MongoDB, Redis

**Testing:** PyTest, JUnit, Selenium

**Big Data & Analytics:** Pandas, NumPy, Scipy, Skimage

**Practices & Architecture:** Microservices, OOP, Design Patterns, TDD, Clean Architecture, Agile/Scrum

## CERTIFICATIONS

### Mathematics for Machine Learning – Imperial College London

May 2024

### IBM Data Analyst Professional Certificate

Apr 2024