Marc Jowell Bagaoisan

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Education

University of California Los Angeles — Los Angeles, CA
Bachelor of Art in Computer Science and Lingustics — **June 2027**

Relevant Coursework: Data Structures & Algorithms/Complexity, Computer Architecture, Probability, Software Construction, Databases, Introduction to Computer Science I & II, Linear Algebra, Discrete Math

Technical Skills

Languages: Java, Python, C/C++, Go, JavaScript/Typescript, HTML/CSS
Frameworks: React, Node.js, Express.js, AWS
Libraries/Tools: gRPC, Redis, Git, Docker, RESTful API, Playwright, NATS JetStream, Supabase
Databases: MySQL, PostgreSQL, MongoDB, Neo4j, Cassandra, OpenSearch VectorDB, Redis
Other: Attended Amazon University event – Amazon Campus Prep Series - 2025

Experience

Software Engineer Intern — **September 2025 – Present**
Creative Labs — *Los Angeles, CA*
- Built an internal membership portal used by **70+** members across multiple projects with **ExpressJS** and **Supabase**
- Designed a **Postgres**-based multi-team task system with workspace-scoped access and role-based permissions
- Engineered a **GitHub** webhook ingestion pipeline that persists events and syncs issues/PRs into tasks
- Standardized the club website by managing **Netlify** deployments and CI/CD, **Contentful** updates, and bug fixes

Undergraduate Research Assistant — **June 2025 – Present**
University of California Santa Cruz, AIEA Lab — *Santa Cruz, CA*
- Delivered **BLV** map exploration with <**100ms** haptics by building a **SwiftUI** audio-haptic prototype
- Built a **JavaScript** spatial data pipelines to convert raw map data into landmarks, paths, and regions
- Engineered a **PyTorch**-based **OSM** pipeline that processed **15K+** map nodes/min to surface hazards and landmarks
- Benchmarked 6 **VLMs** on **1,500+** spatial reasoning prompts, revealing a **30%** drop in multi-step reasoning

Undergraduate Teaching Assistant — **January 2024 – April 2025**
De Anza College — *Cupertino, CA*
- Led weekly sessions for **60+** students, simplifying complex Data Structures and Algorithms concepts
- Generated **55+** code snippets with Java to demonstrate hashing, linked-lists algorithms, and time complexities

Projects

HumanStocksBot | *Go, PostgreSQL, Redis, NATS JetStream, gRPC, AWS*
- Engineered a Discord bot with a bonding curve pricing engine and real-time trade execution serving **300+** users
- Designed event-driven architecture using transactional outbox and **NATS JetStream** for durable messaging
- Optimized trade execution to <**50ms** with **Redis** caching and idempotent request handling
- Deployed containerized services to **AWS EC2** with **Redis** caching and automated CI/CD via **GitHub Actions**

Bruin Marketplace | *React, NextJS, TypeScript, ExpressJS, PostgreSQL, Playwright*
- Developed Bruin Marketplace, a UCLA-only student buy/sell marketplace, attracting **50+ monthly users**
- Implemented custom **Google OAuth** to restrict access to verified @ucla.edu users with server-managed sessions
- Built a **Playwright E2E** test suite with custom fixtures and auth stubs to validate listing and login workflows
- Reduced search latency by **78%** by implementing a read-optimized PostgreSQL indexing strategy

SplitZen | *React, NextJS, TypeScript, PostgreSQL, AWS S3*
- Built a full-stack expense splitter that tracks shared costs and computes net balances for debt settlement
- Engineered **REST APIs** to handle complex expense lifecycles and group management workflows
- Minimized group settlement transactions using a deterministic greedy algorithm that resolves cyclic debts

UCLA Course Availability Monitor | *Go, AWS EC2*
- Built a **Go-based** course tracker that concurrently monitors **1,000+** classes, utilizing Discord's Webhook API
- Optimized data ingestion using concurrent Go routines and retry backoff strategies to handle network instability
- Deployed the service to **AWS EC2** and stored state to prevent duplicate alerts across restarts