# Moussa Kabalan

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## EDUCATION

**University Of Michigan** — Dearborn, MI
*Bachelor of Science in Computer Science* — *Expected May 2027*

- **GPA: 3.5/4.0**
- **Relevant Coursework:** Data Structures and Algorithms, Systems Programming, Distributed Systems, Operating Systems, Web System Architecture, Computer Networks, Database Systems

## EXPERIENCE

**Software Engineer** — Apr. 2025 – Oct. 2025
*Zood Studios* — *Baltimore, MD*

- Cut **average response latency by 22%** by owning the refactor of **Redis + PostgreSQL** caching and I/O pipelines, increasing cross-region consistency.
- Developed and operated **4+ microservices** for real-time multiplayer (matchmaking, inventory, session persistence) across distributed regions.
- **Enabled content updates reaching 50M+ cumulative sessions** by implementing load-handling fixes (connection pooling and batching) during high-traffic releases.

**Software Engineer** — Sept. 2023 – Mar. 2025
*Malt Games* — *Dearborn Heights, MI*

- Led implementation of backend and gameplay infrastructure for a large-scale online platform supporting **4M+ monthly active users** by building Luau gameplay systems and Python backend services with multi-region caching and idempotent async updates.
- Architected and maintained **distributed REST APIs** and **asynchronous data pipelines** using Python, Redis, and Luau to handle millions of concurrent transactions, increasing system performance by **35%**.
- Integrated **GameAnalytics** and internal analytics dashboards that guided LiveOps decisions, improving engagement and retention across releases by **33%**.

## PROJECTS

**Elemental Dungeons** | *Luau, Python, PostgreSQL, Redis* — Sept. 2023 – Present

- Architected and implemented core components and backend services for a massively concurrent multiplayer platform supporting live combat, progression, and trading for **4M+ monthly users.**
- Implemented **LiveOps infrastructure** and telemetry systems to evaluate player behavior and inform data-driven content rollouts.
- Recognized in the **Roblox Winter Spotlight 2024**, a global showcase of **top community-loved** updates worldwide.

**Fake News Detector** | *Python, React, JavaScript, HuggingFace* — Sept. 2025

- Developed a machine learning web platform using **DistilBERT** and probabilistic inference, achieving **99.8% accuracy** in detecting article-level misinformation; based on held-out test sets.
- Created a **real-time prediction interface** with Flask-React integration, optimizing inference latency and front-end responsiveness.

**Redis-Backed Matchmaking API** | *Python, Flask, Redis* — Jul. 2025

- Developed a **low-latency matchmaking engine** leveraging Redis for real-time queuing, regional scaling, and session persistence.
- Implemented distributed worker pools capable of orchestrating **thousands of concurrent joins** with consistent **sub-100ms** latency.
- Implemented **retry-safe POST endpoints** using UUIDs to de-duplicate join requests, keeping state consistent during client retries, brief network drops, and worker restarts.

## TECHNICAL SKILLS

**Languages:** Python, C++, JavaScript, TypeScript, Java, Lua, SQL
**Libraries & Databases:** Flask, React, PyTorch, Unity, Knit, Comm, PostgreSQL
**Developer Tools & Cloud:** Git, GitHub, VS Code, Visual Studio, Postman, Linux, DigitalOcean, AWS, Azure