

Christopher P. Ravosa

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SKILLS

Languages: C#, Python, TypeScript, JavaScript, C++, Java
Systems: Distributed Systems, Real-Time Systems, TCP Networking, REST APIs, CI/CD
Simulation: Real-Time Simulation (Unity), ML-Agents, Reinforcement Learning Environments
Data & Cloud: MongoDB, NoSQL Modeling, Aggregation Pipelines, GCP, AWS
Tools: Node.js, React Native, Git

PROFESSIONAL EXPERIENCE

Senior Software Engineer - Moku

Mar 2025 - Present

- ❖ Architected and built a real-time simulation platform for training and evaluating autonomous agents, **supporting tens of thousands of simulations and millions of training episodes**
- ❖ Designed and implemented ML-Agents-based training environments, including observation spaces, reward systems, episode lifecycle, and agent spawning logic
- ❖ Built a config-driven training pipeline using YAML-defined environments interpreted at runtime, enabling rapid iteration and **reducing AI experimentation cycles from months to hours**
- ❖ Engineered a deterministic recording and replay system capturing full simulation state and event streams, enabling frame-accurate playback, debugging, and visualization of agent-driven matches
- ❖ Implemented a modular service architecture with a static facade layer, allowing systems (recording, VFX, audio, etc.) to be dynamically enabled/disabled based on runtime context
- ❖ Built extensive developer tooling and editor systems, including centralized configuration management, debugging dashboards, structured logging, and dev menus to accelerate iteration across engineering and design teams

Associate Software Engineer - Major League Baseball

Aug 2023 - Mar 2025

- ❖ Developed TCP-based matchmaking services and backend APIs supporting interactive systems and player interactions across large-scale mobile applications
- ❖ Designed and executed automated stress testing frameworks for backend services, identifying memory leaks and data integrity issues and improving system reliability under sustained load
- ❖ Implemented data processing and leaderboard systems handling large player datasets, leveraging MongoDB aggregation pipelines to efficiently query and rank millions of records
- ❖ Contributed to content management system enabling dynamic configuration of live service content without direct database access
- ❖ Integrated external data sources including MLB StatCast APIs, transforming high-volume real-world data into interactive systems
- ❖ Participated in on-call rotations, diagnosing and resolving production incidents in live systems, including recovery of backend services during outages
- ❖ Built internal tools and pipelines for asset distribution via CDN (GCP), enabling dynamic content delivery while minimizing client footprint

Associate Technical Designer - Naughty Dog

Jul 2022 - Jun 2023

- ❖ Developed networked gameplay systems using a host-authoritative model, implementing logic for replication, authority, and synchronization in a multiplayer environment
- ❖ Built interactive systems with a focus on network correctness, latency handling, and consistency under packet loss
- ❖ Designed and tested logic to remain stable under unreliable network conditions, ensuring client synchronization and preventing desync or crashes
- ❖ Collaborated closely with animation and QA teams to implement and refine complex player interactions, iterating rapidly on feedback to achieve high-quality, production-ready systems

EDUCATION

- ❖ **MSc in Software Development - Concentration in Mobile Computing**
Marist College - *Sept. 2020 to May 2022*