

# Juan Rodriguez Morais

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## Summary

Product Engineer that thrives with high ownership of systems. I solve problems end-to-end: from customer pain to customer excellence. Currently learning and applying AI orchestration.

## Skills

**Technologies:** JavaScript, Python, Elixir, React, TypeScript, Next.js, Nest.js, Electron, Zod, Jotai, Shadcn, ReactQuery

**Architecture:** API design, Event-driven design, Pub/Sub messaging, Monolith, Monorepo, MVC, MVVM, Testing, Agile

**Infrastructure:** AWS, Docker, Postgres, MongoDB, Redis, Kubernetes, Terraform, CI/CD Pipelines (GitHub + Azure)

**AI:** RAG + Multi-modal agents, Vector search (MongoDB, Pinecone), Embedding transformers, Anthropic, OpenAI, Gemini

## Experience

### Senior Software Engineer, The Boundary – Auckland, NZ

Sept 2024 – present

Working on the ‘Realspace 5’ application ecosystem, focusing on high-fidelity 3D visualization and global cloud infrastructure. Leading AI tooling with agents to enhance user workflows and developer productivity.

- Shipping multiple features and POCs, taking complete ownership (customer problem, PRD, implementation, iteration).
- Architected media upload pipelines capable of handling 1GB+ files with parallelized anti-virus scanning and automated asset validation. This is key to the business as most of our content is media (images, videos, 3D files).
- Released an internal desktop application that reduces manual CMS entry time from 1.5 hours to 10 minutes on average via complex automations, freeing up critical time for internal operation teams.
- Focused on application stability across global multi-region EKS clusters, ensuring we meet SLOs through proactive bug suppression and pod orchestration.
- Key technologies: TypeScript, React, Next.js, Electron, Node.js, Nest.js, Jest, AWS, PostgreSQL, Docker, Kubernetes.

### Senior Software Engineer (Contract), Futureverse – Auckland, NZ

Aug 2023 – Sept 2024

- Led a 4-person team to build the ‘Party Bears’ web app, achieving a 70% user adoption rate within the ecosystem.
- Directed the technical migration of the ‘Muhammad Ali: The Next Legends’ platform to a modern, scalable stack.
- Key technologies: Next.js, TypeScript, Three.js, Unity, C#, Ethers.js, AWS, Blockchain bridging, Tokenization, NFTs.

### Intermediate Backend Software Engineer (Contract), Plex, Inc. – Remote

Sept 2022 – July 2023

- Improved the performance of scheduled tasks (cron jobs) by implementing parallelization techniques to operate asynchronously and concurrently.
- Engineered scalable ETL workers processing metadata from 5+ global sources, significantly improving data quality for PlexTV.
- Key technologies: Node.js, Express.js, MongoDB, AWS

### Intermediate Software Engineer (Contract), Virtually Human – Remote

Apr 2022 – Aug 2022

- Reduced ZED RUN game load times by 66% (30s to 10s) through aggressive asset benchmarking and device-specific optimization.
- Key technologies: TypeScript, React, Three.js, Elixir, Phoenix, PostgreSQL AWS.

**Intermediate Software Engineer**, Sharesies – Wellington, NZ

June 2020 – Apr 2022

- Primary contributor to the ASX integration, directly generating \$1M+ in revenue and onboarding 50,000+ new users.
- Designed a real-time Currency Exchange (FX) system that became a core revenue-generating pillar for the platform.
- Worked on an internal CMS that enabled the operations and compliance team to handle 3x the workload with existing headcount.
- Key technologies: C#, .NET, PostgreSQL, Python, Flask, TypeScript, React, React Router, Redux, AWS

**Junior Full-Stack Software Engineer**, PikPok – Wellington, NZ

June 2018 – June 2020

- Contributed to award-winning titles ‘Clusterduck’ and ‘I Am Monster’ with Unity and C#, collectively generating \$1M+ in revenue.

## Projects

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**Card Oracle: Real-time AI agent web application for Magic: The Gathering cards**

- Built an interactive voice-calling system where users ask for card names and get real-time augmented data during the call (visual + voice feedback).
- Developed a RAG (retrieval-augmented generation) search pipeline that processes ~37,000 records with MongoDB, generating embeddings with synthetic document chunking. Users can ask questions through an LLM and get an augmented answer.
- Evaluated transformer pipelines and decided on 384-dimension transformers from HuggingFace, because the quality of my data was good, and text was relatively short.
- Key technologies: Python, TypeScript, NextJS, React, ElevenLabs SDK, FastAPI, MongoDB, Transformers, Huggingface, Ollama

**DigiLens ARGO: Augmented Reality AI agents**

- Built an AR demo for clients in California using the DigiLens ARGO headset, integrating OpenAI voice + text for in-AR chat.
- Key technologies: Unity, C#, DigiLens ARGO, OpenAI, Snapdragon SDK

**Oink: Cross-platform personal finance manager**

- Built a desktop app that helps users understand their net worth. Supports multi-currency accounts, and retirement planning projections.
- Key technologies: Tauri, JavaScript, React, Rust

**Tie Breaker: Tournament hosting web application for card games**

- Developed a concurrent system that handles tournaments of up to 100 players. Features 3 complex pairing algorithms.
- Currently building a mobile application to access the app. This app has rapidly evolved based on user feedback.
- Key technologies: Elixir, Phoenix, LiveView, Tailwind, JavaScript, React Native, Fly.io

**PlayCanvas: Interactive, multiplayer high-fidelity 3D tours in the web**

- Architected a scalable 3D tour platform with a dedicated game server.
- Key technologies: TypeScript, PlayCanvas, React, Redis, Kubernetes, Terraform, Colyseus.io, Google Cloud (GCP)

## Education

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**Media Design School**, BSc in Software Engineering – Auckland, NZ

July 2015 – June 2018

- Featured in international news for student game projects; 2x internship-to-hire recipient.
- Created a horror videogame with Unreal Engine 4.
- Created multiple games with Unity. One of them got a mention in online forums under "Most interesting games of the week".