

Harold Camacho

Software Engineer

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👤 Profile

Software engineer, Co-creator of *Splinter* [🔗](#), a serverless data ingestion pipeline for AI applications. With a strong foundation in backend development and experience across the stack, open-source collaboration, and creative problem-solving. Recently contributed to core browser features in Mozilla Firefox, with work featured in the official release notes [🔗](#). Also have experience building RAG-based AI chatbots that combine structured and semantic retrieval to deliver accurate, context-aware responses.

📁 Professional Experience

Open Source Developer, Mozilla - Firefox

2025 – present | Remote

- Collaborated with Mozilla engineers and core maintainers to analyze complex browser bugs, contribute production-grade patches, and participate in Firefox's large-scale, review-driven open-source development process.
- Resolved multiple Picture-in-Picture (PiP) interaction issues on third-party sites by implementing domain-specific overrides [🔗](#) and video wrappers to ensure smooth and consistent functionality.
- Enhanced Firefox's private browsing mode [🔗](#) by updating UI logic to hide the "Clear cookies and site data..." button in private windows, and authored an automated browser-chrome test to validate the behavior across private sessions.
- Refactored Reader Mode code [🔗](#) to improve language detection and text direction assignment for better localization support, standardized internal fields, and fixed downstream Link Preview integration to ensure full test suite stability across Reader Mode and AI-powered link previews.
- Leveraged tools such as Mercurial, Bugzilla, Phabricator, and Searchfox to navigate Firefox's modular architecture, investigate issues, submit patches, and validate changes across development builds.
- Authored a series of technical blog posts [🔗](#) documenting and reflecting on the experience of contributing to a major open-source project.

Software Engineer, Splinter [splinter-app.github.io](#) [🔗](#)

2024 – 2025 | Remote

- Implemented an event-driven system that ensures real-time updates to vector databases, where changes at the data source automatically trigger document addition, update, or removal in vector databases. Improving data freshness and accuracy in knowledge bases.
- Optimized AWS Fargate performance by creating lightweight Docker images and refining resource allocations, boosting efficiency by 70% and reducing ingestion time for a 2.2 MB PDF from 3.5 minutes to 1 minute.
- Integrated non-AWS document stores like Dropbox into the pipeline using DynamoDB, Lambda, and API Gateway, ensuring secure connectivity and a seamless user experience for document ingestion and management.
- Built an Observability Dashboard using React, and AWS WebSocket API Gateway for real-time ingestion insights, powered by AWS Lambda and DynamoDB.
- Developed a RAG Sandbox chatbot that validates ingested data by dynamically interacting with the database.
- Authored comprehensive technical case study, readable at [splinter-app.github.io/case-study](#) [🔗](#)

Software Engineer, Cibera

2024 | Remote

- Implemented a robust backend using C#, ASP.NET MVC, Entity Framework, and PostgreSQL, reducing data access complexity and improving maintainability.
- Built comprehensive data models, DTOs, and controllers to support complex credit calculations and financial reporting, ensuring accurate insights for business stakeholders.
- Designed and integrated PostgreSQL databases with Entity Framework, enabling efficient, stateful data tracking.
- Developed React and Ant Design-based front-end components to create intuitive dashboards, improving user satisfaction and reducing training time.

Software Engineer, Open Source Projects

2022 – Present | Toronto, Canada

ZeldaBot (RAG Walkthrough Chatbot) – AI assistant that answers player questions about every mainline *Legend of Zelda* title.

(Python, BeautifulSoup, LangChain, LangExtract, PostgreSQL/pgvector, Gradio)

RequestFlow – Web service that spins up disposable endpoints for inspecting incoming HTTP requests, simplifying API and webhook debugging.

(PostgreSQL, MongoDB, Express, Socket.io, React)

Simple Active Record ORM – Designed and implemented a lightweight Ruby ORM that follows Active Record principles for clean, declarative database interactions. (Ruby, PostgreSQL, PG gem)

🧠 Skills

Languages, Frameworks & AI — Ruby, Sinatra, Python, LangChain, NumPy, LangExtract, BeautifulSoup, JavaScript, TypeScript, Node.js, Express, Handlebars, React, ASP.NET, C#.

Cloud — AWS CDK, EC2, ECS, Lambda, S3, Batch, DynamoDB, API Gateway.

Other Technologies — PostgreSQL, PGVector, MongoDB, Pinecone, Gradio, Docker, Nginx, Digital Ocean, Git/Github, Mercurial, Phabricator, OpenAI, RESTful APIs, Linux, Bash, Trello.

🎓 Education

Humber College, Toronto, ON, Bachelor of Music BMus

2014 – 2019