

ISAAC H. LÓPEZ DÍAZ

Independent Haskell & Backend Engineer • Available for engagements

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SUMMARY

Independent engineer specializing in production Haskell and full-stack backends. Recent work spans an executive personal operating system on Next.js/Supabase, HIPAA-compliant healthcare APIs in C#/Azure, and Yesod/Haskell modernization that cut system errors by 50%. I own engagements end-to-end — domain modeling, backend, deployment, and the Linux infrastructure underneath. Concurrent MS in Computer Science, with thesis research on programming language semantics. Available for part-time and project-based work.

SKILLS

Languages: Haskell, Rust, C, Python, TypeScript/JavaScript, Lisp/Scheme, C#

Backend: Yesod, Servant, .NET, REST, GraphQL

Frontend: React, Next.js, Angular, Tailwind, React Native (Expo)

Infra: Debian, Nginx, systemd, Docker, SSH, Vercel, Supabase, Heroku, Azure

Data: PostgreSQL, MSSQL, CosmosDB

ML: PyTorch, TensorFlow, LLM APIs, Computer Vision

EXPERIENCE

- 4/2026 – Present **Senior Software Engineer** Lateral CC
- Built a full-stack executive operations platform (Next.js, TypeScript, Supabase, Expo React Native) unifying multiple business entities, real estate holdings, and philanthropic initiatives under one system
 - Designed relational data models for work items, calendar entries, and life domains using Class Table Inheritance and ADT-inspired schemas with row-level security on Supabase Postgres
 - Set up multi-environment infrastructure on Vercel and Supabase — environment scoping, preview deployments, and database branching across dev and prod
 - Integrated Claude as a tool-use assistant for structured workflows across executive domains
 - Worked directly with the principal and Chief of Staff to translate workflow requirements into shipped features
- TypeScript / Vercel / Supabase
- 7/2024 – 3/2026 **Software Engineer** Rokit Development Studio
- Designed and shipped REST APIs for hospital systems with HIPAA and HL7 compliance, enabling interoperability across multiple healthcare facilities
 - Owned backend services in C# and Azure integrated with existing hospital infrastructure
 - Translated clinical and operational requirements into software in direct collaboration with stakeholders
- C# / Azure / DevOps
- 7/2022 – 9/2023 **Software Developer** MasterWord Services
- Cut system errors by 50% on a production Haskell/Yesod codebase serving a language services platform, primarily through query optimization and refactoring of the MSSQL data layer
 - Maintained and extended the platform as part of a small backend team
- Haskell / Yesod / MSSQL / JavaScript
- 1/2022 – 6/2022 **Software Developer** Optivon, Inc.
- Optimized React frontend, reducing page load times by 35% and improving UI responsiveness
 - Managed Heroku deployments, debugging configuration issues and improving deployment pipeline
- JavaScript / React / GraphQL / Heroku
- 8/2021 – 5/2022 **Research Fellow** New York University
- Trained a convolutional neural network achieving >90% accuracy for fruit-fly body-part recognition
 - Implemented a neural network to predict one-dimensional unsteady compressible reacting flow simulations
- Python / PyTorch
- 8/2021 – 12/2021 **Operating Systems TA** University of Puerto Rico - Mayagüez
- Taught OS concepts and assisted students with lab projects involving C, IPC, and Minix kernel
- C / IPC / Minix

EDUCATION

- 8/2024 – Present **MS Computer Science** University of Puerto Rico - Río Piedras
- GPA: 4.00 • Thesis: PL Blue, a reflective programming language with runtime semantics modification

PAPERS

12/2025 **A Reflective Language for dataflow semantics****PROJECTS**

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|---------|---|------------------------|
| Blue | github.com/ih1d/blue | Master's Thesis |
| | A reflective programming language for the analysis of dataflow semantics. Built in Haskell. | |
| MPL | github.com/ih1d/mpl | DSL |
| | WIP. Domain-Specific Language for bioinformatics workflows and experiments. Built in Haskell. | |
| chai | github.com/ih1d/chai | DL |
| | WIP. Deep learning framework built in C. | |
| ts-todo | github.com/ih1d/ts-todo | Web App |
| | ToDo web application built with TypeScript: Express for backend, React + Tailwind for frontend. Uses Anthropic's API SDK to provide a built-in AI helper. | |