


# ISAAC H. LÓPEZ DÍAZ

Functional Programming Engineer


 ihld.com

 isaac@ih1d.com

 787 237 3777

 github.com/ih1d

 Caguas, PR

 /in/ihlopez25

## SUMMARY

Functional programming engineer with production Haskell experience and research focus on programming language semantics. Built HIPAA-compliant healthcare APIs, improved legacy Yesod codebases, and currently developing a reflective PL for my master's thesis. Extensive experience administering Linux servers and self-hosted infrastructure.

## SKILLS

**Languages:** Haskell, C, C#, Python, Lisp/Scheme, JavaScript

**Frameworks:** Yesod, Servant, React, Angular, .NET

**Cloud/Data:** Azure, Docker, Heroku, MSSQL, CosmosDB, GraphQL

**ML:** PyTorch, TensorFlow

**Systems:** Debian, Docker, Nginx, systemd, SSH

## EXPERIENCE

- 7/2024 – Present **Software Engineer** Rockit Development Studio
- Built REST APIs for hospital systems with HIPAA and HL7 compliance, enabling interoperability across multiple healthcare facilities
  - Developed backend services using C# and Azure, integrating with existing hospital infrastructure
- C# / Azure / DevOps
- 7/2022 – 9/2023 **Software Developer** MasterWord Services
- Refactored Yesod/Haskell backend, cutting system errors by 50% and optimizing MSSQL query performance
  - Maintained and extended production Haskell codebase serving language services platform
- 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
- 1/2022 – 5/2022 **Research Fellow** New York University
- Implemented neural network to predict one-dimensional unsteady compressible reacting flow simulations
- Python / PyTorch
- 8/2021 – 12/2021 **Research Fellow** New York University
- Trained convolutional neural network achieving >90% accuracy for fruit-fly body-part recognition
- 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
- 8/2015 – 5/2022 **BS Software Engineering** University of Puerto Rico - Mayagüez
- GPA: 3.27

## PROJECTS

- PL Blue **github.com/ih1d/blue**
- Master's thesis project: a reflective programming language with runtime semantics modification and dataflow analysis capabilities