

ISAAC H. LÓPEZ DÍAZ

Functional Programming Engineer

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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