

Dino Morelli

dino@ui3.info | github codeberg

Experienced software engineer specializing in functional programming with Haskell on Linux systems. Strong background and experience in back-end data processing and tool building.

Skills

- Languages: Haskell, Scala, Python, bash, Java, Perl
- Web: REST, Apache, Servant, happstack, LetsEncrypt
- Database: MongoDB, PostgreSQL, MySQL
- Cloud/devops: AWS, Azure, Ansible
- Linux/UNIX: Arch, Ubuntu, Debian, Solaris, CentOS, slurm
- Miscellaneous: Android, epub, GenAI, OpenAI, Ollama, LangChain

Experience

Pramana Labs LLC (Morrisville, NC, USA)

2023 Apr to 2024 Aug - Senior back-end software engineer Scala and Haskell back-end development

- REST server and data storage development for the SHIFT data mining platform
- Implemented storage and retrieval of product usage data for billing purposes
- LLM SQL generation with LangChain, ChatGPT, Mistral
- Technologies used: Scala, Haskell, Python, AWS, HubSpot

Input/Output Global (remote)

2022 Apr to 2023 Mar - Software Engineer Haskell programmer on the Marlowe Smart Contract team

- Worked on the the runtime and cli tools to create and execute Marlowe smart contracts on the Cardano blockchain.
- Worked on a web-based explorer prototype for Marlowe smart contracts for examining contract information on-chain.

Input/Output Global (remote)

2021 Apr to 2021 Sep - Unpaid volunteer Student and volunteer for the Plutus Pioneer Program, learning about building smart contracts on IOG's Cardano blockchain

- Participated in the inaugural smart contract development course with Haskell and Plutus. Plutus is the on-chain form of Cardano smart contracts.
- Mentoring and teaching first-time Haskell programmers
- Contributed a large amount of critical community documentation for Plutus development on Linux systems. Including installation and maintenance of Nix.
- Contributed systemd unit files for developing with the Plutus Playground, a web-based environment for developing and running Cardano smart contracts on a local blockchain simulator.

Edwards Lifesciences (remote)

2020 Apr to 2021 Mar - Software Engineer (contract) Updates and new features for a system tracking chemical composition and regulatory compliance across Edwards' entire medical devices enterprise

- Complex report generation leveraging Haskell and Oracle SQL database
- Significant developer environment and docs work for deployment on AWS
- REST servers using the happstack framework

HERE Technologies (remote)

2019 Jun to 2019 Dec - Software Engineer (contract) Location data transformation work using the HERE Tech Open Location Platform

- Wrote Protocol Buffer schemas and processed them into Scala
- Wrote Scala software to manipulate these data structures
- Performed location data transformations on the Spark-based OLP system

Honu Apps LLC (Raleigh, NC, USA)

2014 Nov to present - Co-founder, Software Engineer Software development consulting services

- Kitchen Snitch restaurant health inspection app. Back-end data-acquisition and REST server made with Haskell, MongoDB, Google Maps, Geocoding and Places APIs, AWS
- SigMet Solutions weather forecast HPC cluster automation and web development. Haskell
- SpectraHex Android puzzle game. Written in highly-functional Scala. Source

Panasonic Weather Solutions (Morrisville, NC, USA)

2011 Mar to 2018 Feb - Senior Software Engineer Producing weather forecast products on high-performance computing (HPC) clusters

- Haskell and Scala used extensively to parallelize weather forecasting processes on a high-performance computing cluster. CentOS, Slurm, Lustre
- Scala REST server work in support of various products
- All system design features functional programming techniques

Burlington Aviation Technology School (Burlington, VT, USA)

2009 Aug to 2011 Jun - Software Engineer (contract) Custom web-based education solutions for Avionics students

- Designed and built the GROLPrep website, a study tool and test simulator for the FCC GROL and Radar Endorsement exams
- Haskell, happstack, SQLite. Source
- Try GROLPrep yourself

AT&T Network Security (Morrisville, NC, USA)

2007 Oct to 2009 Jun - Software Engineer (contract) Member of the Network Security group responding to spam and copyright violation complaints

- Architect and lead developer on a copyright infringement notification system written in Haskell
- Wrote custom email APIs and extensive Perl unit test automation for an existing complaint processing system
- Haskell, Perl, MySQL, XML, email parsing and generation, UNIX daemons, concurrency, process control

Open source software development

I have been a contributor to open-source projects, mostly Haskell: xmobar, cabal-install, darcs, string-conv, TagSoup.

I created and maintain many open-source projects including:

genai-lib, py-mkvenv, epub-tools, epub-metadata, hinstall, uacpid, hscrtmpl, photoname.

Over 50K lines of original code in Haskell alone, representing nearly 20 years of deep experience with the language.

These projects and more are hosted and documented in detail on github and codeberg.

From 2019 to 2024 I ran the Haskell Meetup in downtown Raleigh, NC, USA.

I am experienced in epub creation and maintain the epub edition of “(Nothing But) Flowers” by John G. McDaid, a Creative Commons licensed work of fiction.

Education

Plutus Pioneer Program

Input Output Global’s online class for smart contract development with Haskell/Plutus on the Cardano blockchain

Functional Programming Principles in Scala

Ecole Polytechnique Federale de Lausanne via Coursera

Statistics 1

Princeton University via Coursera