Carl J. Factora

Software Engineer
ivanthetricourne.io

EXPERIENCE

Foamspace Corp **Brooklyn, NY**
Software Engineer **Aug 2019-Present**

- Managed and deployed a full-stack application to oversee a decentralized proof-of-location protocol
    - Designed an in-house TCP/TLS interface to efficiently manage and communicate with a globally deployed fleet of IoT radio devices (FOAM nodes) used for terrestrial localization
    - Designed a data pipeline utilizing Haskell's conduit library capable of asynchronously processing large amounts of localization data as part of a decentralized alternative to GPS
    - Collaborated with consulting teams to design a web app interface in PureScript used by FOAM zone operators for testing and improving localization performance
- Contributed to open-source Haskell and PureScript libraries leveraged by the blockchain and web3 community
    - Secured an open source grant for completing a Haskell library enabling the development of blockchain apps interfacing with the Cosmos SDK
- Assumed a mixed-role encompassing backend, frontend, and dev-ops responsibilities supporting a small engineering team (< 4 software engineers) to meet operational needs

Droit Financial Tech., LLC **New York, NY**
Software Developer **Aug 2017-July 2019**

- Spearheaded the design and maintenance of a low-latency decision engine API used at some of the world's largest banks for financial regulation compliance
    - Consulted with clients and their engineers on integrating their software stack and tooling
    - The decision engine API remains the core of the primary product of the company to this day
- Designed and implemented an internal domain-specific language (DSL) based on Groovy
    - Resulted in an average 40% improvement in request latency over legacy API performance
    - Created tools for knowledge engineers for ease in internal testing and development

Associate Instructor - Advanced Functional Programming **Bloomington, IN**
Indiana University **June 2016-Dec 2016**

EDUCATION

The Recurse Center **New York, NY**
Hacker School **Feb 2017-June 2017**

- Designed and authored an online, interactive book for functional programming inspired by *Eloquent JavaScript*
- Self-taught various topics of interest, focusing on type-driven development and web development

Indiana University, Bloomington **Bloomington, IN**
Bachelor in Computer Science and English Literature **2012-2016**

- Instructed numerous graduate and undergraduate courses on programming language theory
- Contributed to *Essentials of Compilation: An Incremental Approach in Racket* by Jeremy G. Siek
- Conducted research with Daniel P. Friedman on dependent type theory and constructive proofs

ADDITIONAL INFORMATION

- Programming Languages: Haskell, PureScript, Clojure, Elm, Racket/Scheme, JavaScript
- Technologies: Docker, PostgreSQL, Redis, Kubernetes