

Elias Mulhall

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Education

Grinnell College

Grinnell, Iowa

Bachelor of Arts in Computer Science, 3.7 Major GPA

2012 - 2016

- Dean's List, Fall 2015
- PLMW at ICFP Travel Scholarship, Aug. 2015

Technical Skills

Languages

Proficient: Ruby, OCaml, Scheme

Intermediate: C, Java, Go, Bash, PHP, Python, Coq, Javascript

Frameworks

Sinatra, Ruby on Rails, Node.js, Unity, Cucumber

Dev Methods

Scrum Agile development, Test-driven and Acceptance test-driven development

Tools

Linux, Git, Vim, PostgreSQL, SQLite, \LaTeX , JSON, HTML/CSS

Experience

Software Development Intern, eHealth Data Solutions

Yellow Springs, OH

Developed and tested web-based analytical applications for the post-acute healthcare industry.

Summer 2014, Summer & Winter 2013

- Used PHP, test driven development with PHPUnit, and acceptance test-driven development with Cucumber and Ruby.
- Participated in weekly Scrum sprint planning and managed user stories with JIRA.
- Updated legacy codebase to follow company best practice Cucumber/Ruby integration testing.

Research Assistant, University of Massachusetts Amherst

Amherst, MA

Researched domain specific languages for declarative control of network routing with Prof. Arjun Guha.

Summer 2015

- Implemented a new compiler algorithm for the NetKAT software driven networking language, utilizing the OpenFlow 3 network standard to produce more compact and flexible compiled network switch instructions.
- Simulated and tested OpenFlow compatible smart switch networks using virtualization tools such as Mininet and Vagrant.
- Leveraged the OpenFlow 3 compiler to develop high-level language abstractions for configuring load balancing and fault tolerant networks.

MIST Educational Web Environment Independent Study, Grinnell College

Grinnell, IA

Developed a toolset for learning functional programming through art with Prof. Samuel Rebelsky.

Spring 2015

- Worked in existing Node.js code base for the Mathematical Image Synthesis Toolkit (MIST), a domain specific language and integrated web environment for creating visual art by means of simple function composition.
- Designed and implemented the MIST web API, in order to meet the interfacing needs of the MIST mobile app development team.

Software Foundations Guided Reading, Grinnell College

Grinnell, IA

Studied formal software verification and programming language theory with Prof. Peter-Michael Osera.

Spring 2016

- Read and discussed *Software Foundations* by Pierce et al. and worked through exercises using the Coq proof assistant.
- Used Coq to verify Theorems 2.1.1 and 2.1.2 of Peter-Michael Osera's dissertation *Programming Synthesis with Types*.

Teaching Assistant, Grinnell College

Grinnell, IA

Aided the Grinnell Computer Science introductory class "Imperative Problem Solving and Data Structures."

Spring 2014

- Graded and provided feedback on student assignments, many of which featured controlling robots programmatically with C.

Technology Consultant, Grinnell College

Grinnell, IA

Provided friendly and accessible network, hardware, and software services for Grinnell faculty and students.

Spring & Fall 2013

- Completed semester-long training process focused on customer service, communication, and troubleshooting.