Andrew Blinn

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Toronto • Canada • Spoken Languages : English + French (basic)

Passionate about programming languages as user interfaces; keeps current with PL/FP/UI research & development

Work @ TodaQ, Toronto

Software Engineer; Clojure *May 2019 - Current*
Implementing a novel protocol for distributed digital asset management and its ancillary web services

Work @ University of Toronto

Course materials development *Summer 2018*
Developed code & documentation for professor David Liu's programming language theory course. Designed & implemented an educational language featuring pattern matching and algebraic data types

Teaching assistant *Sep 2017 – May 2019*
Principles of Programming Languages (5 semesters); Introduction to Computational Thinking (1 semester). Responsibilities include lecturing, individual tutoring with a focus on TDD, code reviews, & semi-automated testing. Built an algebraic code stepper to demonstrate continuations in Scheme

Education @ University of Toronto

H.BSc in Mathematics & Computer Science *2014 - 2019*
Led a student reading group on Category theory. Compilers coursework: Developed a λ-calculus-based language with a macro system compiling to x86 and transpiling to C. Coursework in abstract algebra including Galois Theory, differential geometry, topology, & logic

Research: Variational Data Structures with Marsha Chechik *Sep 2018 - Current*
Developing & profiling higher-order data structures in Haskell to underpin static analysis of software product lines. Developed SpyShare, a Graphviz-based tool to visually introspect data sharing

Research: Structured Editing in Racket with Gary Baumgartner *Summer 2017*
Self-initiated study of extant refactoring, live programming, and direct manipulation tooling, culminating in the design and implementation of a Racket-based polyglot structure editor; development ongoing

Skills

Functional Programming: Type- and Test-Driven-Development in Racket/Scheme, Clojure & Haskell. Property-based testing with QuickCheck. DSL development in Racket/Redex

UI Design & Graphics : CSS/HTML, mockups in Adobe CS incl. Photoshop, Illustrator, After Effects. Raytracing, raymarching, rasterization, & kinematics in C++ & GLSL

Performance Profiling & Parallelism/Concurrency : C, C++: OpenMP, MPI; CUDA; core.async

Other languages & tech : LaTeX, Emacs, Bash, Git, Java, Python, GNU/Linux/Windows/MacOS

Conferences & Workshop Attendance

Clojure North 2019, Strange Loop 2018 , RacketCon 2018 *Various*

ICFP 2018 (International Conference on Functional Programming) *2018, St.Louis*
Attended fully-funded on PLMW Scholarship

OPLSS 2018 (Oregon Programming Languages Summer School) *2018, Eugene*
An intensive three-week program of lectures and workshops with leading PL researchers

Personal Projects (see Github)

Projects: Fructure, a Racket-based structured editor focusing on composable refactoring, to be featured at RacketCon 2019. Depthmarch, A C++ raymarcher for constructive solid geometry, parallelized in OpenMP. Containment Patterns, custom pattern matchers enabling concise updates of deeply-nested data structures

Outside Interests

Year-round bike commuter. Running, bouldering, camping, photography