

# Andrew Blinn

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Toronto / Canada • English + French (basic)

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

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## Work @ [TodaQ Toronto](#)

**Software Engineering in Clojure** • *May 2019 - Current*

Implementing a novel distributed digital asset management protocol & ancillary web services

## Work @ [University of Toronto](#)

**Software & Documentation Development** • *Summer 2018*

Wrote code & exegesis for professor David Liu's programming language theory course

Designed & built an [educational language](#) with pattern matching & algebraic data types

**Teaching assistance for Principles of Programming Languages** • *5 semesters, 2017 – 2019*

Led tutorials, managed fora & coached with a focus on testing/TDD & code review

Built an [algebraic code stepper](#) to illustrate continuations in Scheme

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## School @ [University of Toronto](#)

**H.B.Sc in Mathematics & Computer Science** • *2014 - 2019*

Graduate-level coursework in abstract algebra, compilers, graphics & languages

Built a Racket-based x86/C com/transpiler for a  $\lambda$ -calculus-based language with macro system

Coursework in algorithms, concurrency, differential geometry, operating systems & topology

**Research in Variational Data Structures with Marsha Chechik** • *2018 - Current*

Built & profiled Haskell data structures supporting variational analysis of large software product lines

Designed & built [SpyShare](#), a Graphviz-based tool to visually inspect data sharing

**Research in Structured Editing in Racket with Gary Baumgartner** • *Summer 2017*

Self-initiated study of existing refactoring, live programming & direct manipulation tooling

Designed & began implementation of [Fructose](#), a Racket-based polyglot structure editor

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## Personal Projects

[Fructose](#) is a prototype editor focused on composable refactoring, to be featured at [RacketCon 2019](#)

[Containment Patterns](#) extend Racket pattern matching to capture contexts in deeply-nested data structures

[Depthop](#) is an OpenMP-parallelized C++ raymarcher for constructive solid geometry

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## Technical Skills

**Functional Programming** - Type/Test-Driven-Development in Racket, Scheme, Clojure & Haskell

Property-based testing with QuickCheck. DSL development with Racket/Redex

**UI & Graphics** - CSS/HTML. Design mock-up in Adobe Photoshop/Illustrator/After-Effects

Raytracing, rasterization, kinematics & geometry processing in C++ & GLSL

**Profiling & Parallelism/Concurrency** - C, C++ with OpenMP & MPI. CUDA. core.async

Etc -  $\text{\LaTeX}$ , Python, Java, Git, Bash, GNU/Emacs/Linux/Windows/macOS

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## Conferences & Workshop Attendance

**ICFP - International Conference on Functional Programming** • *St. Louis, 2018*

Attended fully-funded on PLMW Scholarship

**OPLSS - Oregon Programming Languages Summer School** • *Eugene, 2018*

A three-week program of lectures, workshops & rock-climbing with leading PL researchers

**Etc - Clojure North 2019, Strange Loop 2018, RacketCon 2018** • *2018 - 2019*

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*Off-screen interests include bouldering, running, camping, taking pictures & bike-commuting year-round*

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