

Vincent St-Amour

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- WORK EXPERIENCE
- ◇ **Research Associate** – Northwestern University, Evanston, IL – June 2015 – Present
with Robby Findler
 - ◇ **Research Intern** – Mozilla Corporation, San Francisco, CA – May 2014 – August 2014
with Shu-yu Guo
Research and development work on optimization coaching for the SpiderMonkey JavaScript engine.
 - ◇ **Developer** – Insum Solutions, Montréal – May 2006 – August 2006
Developed enterprise and association management software using Oracle APEX.
- EDUCATION
- ◇ **Northeastern University**, Boston, MA.
Ph.D. in Computer Science
September 2009 – April 2015
Thesis: *How to Generate Actionable Advice about Performance Problems*
Under the direction of Matthias Felleisen and Sam Tobin-Hochstadt
 - ◇ **Université de Montréal**, Montréal, Québec.
B. Sc. with honors in Computer Science
August 2006 – April 2009
Dean's List, School of Arts and Sciences
 - ◇ **Collège Jean-de-Brébeuf**, Montréal, Québec.
Diploma of College Studies – Pure and Applied Sciences
August 2004 – May 2006
- SCHOLARSHIPS
- ◇ SIGPLAN Professional Activities Committee Grant (Fall 2012)
 - ◇ NSERC Graduate Scholarship (Fall 2009 – Spring 2013)
 - ◇ NSERC Undergraduate Student Research Awards (Summer 2007, 2008 and 2009)
 - ◇ CAE-Fraser Elliott Fund Excellence Scholarship (Winter 2008)
- RESEARCH INTERESTS
- Programming tools, compilers, language and library design, extensible languages, functional programming, type systems.
- FREE SOFTWARE DEVELOPMENT
- ◇ **Racket (core developer)**
April 2010 – present
Work on performance tools, optimization and benchmarking.
Typed Racket development and maintenance.
Work on Racket's generic interfaces library.
General standard library development and maintenance.
 - ◇ **Firefox**
May 2014 – August 2014
Prototype optimization coach for SpiderMonkey.
Miscellaneous small patches to SpiderMonkey.
- LANGUAGES
- ◇ Fluent spoken and written English and French

- RESEARCH PROJECTS
- ◇ **Feature-specific profiling**
with Leif Andersen and Matthias Felleisen
December 2013 – present
 - ◇ **Optimization coaching**
with Sam Tobin-Hochstadt, Matthias Felleisen, and Shu-yu Guo
April 2011 – present
 - ◇ **Typed Racket: A statically typed dialect of Racket**
with Sam Tobin-Hochstadt, Asumu Takikawa, Eric Dobson and Matthias Felleisen
April 2010 – present
Research on type-driven optimization, numeric type systems and usability.
 - ◇ **PICOBIT: A compact Scheme system for small embedded systems**
with Marc Feeley
June 2008 – August 2009
 - ◇ **DiCoInfo: The fundamental dictionary of computers and Internet**
with Guy Lapalme and Marie-Claude l’Homme
April 2007 – December 2007
Work on dictionary data storage and transformation.
- BIBLIOGRAPHY
- ◇ **Optimization Coaching for JavaScript**
with Shu-yu Guo
Proc. European Conf. on Object-Oriented Programming 2015
 - ◇ **Profile-Guided Meta-Programming**
with William J. Bowman, Swaha Miller and R. Kent Dybvig
Proc. Conf. on Programming Language Design and Implementation 2015
 - ◇ **Feature-Specific Profiling**
with Leif Andersen and Matthias Felleisen
Proc. Conf. Compiler Construction 2015
 - ◇ **Experience Report: Applying Random Testing to a Base Type Environment**
with Neil Toronto
Proc. International Conf. Functional Programming 2013
 - ◇ **Optimization Coaching: Optimizers Learn to Communicate with Programmers**
with Sam Tobin-Hochstadt and Matthias Felleisen
Proc. Conf. Object-Oriented Programming Systems, Languages, and Applications 2012
 - ◇ **Seeing the Futures: Profiling Shared-Memory Parallel Racket**
with James Swaine, Burke Fetscher, Robby Findler and Matthew Flatt
Proc. Works. on Functional High-Performance Computing 2012
 - ◇ **Typing the Numeric Tower**
with Sam Tobin-Hochstadt, Matthew Flatt and Matthias Felleisen
Proc. International Symp. on Practical Aspects of Declarative Languages 2012
 - ◇ **Languages as Libraries**
with Sam Tobin-Hochstadt, Ryan Culpepper, Matthew Flatt and Matthias Felleisen
Proc. Conf. on Programming Language Design and Implementation 2011
 - ◇ **PICOBIT: A Compact Scheme System for Microcontrollers**
with Marc Feeley
Proc. Proc. Symp. on Implementation and Application of Functional Languages 2009
Recipient of the Peter J. Landin Award for the best IFL 2009 paper
 - ◇ **Small Scheme Stack: A Scheme TCP/IP Stack Targeting Small Embedded Applications**
with Lysiane Bouchard and Marc Feeley
Proc. Scheme and Functional Programming Workshop 2008

- TEACHING
- ◇ **Teaching Assistant** – Northeastern University – September 2009 – April 2012
Introductory programming (How To Design Programs), Object-oriented design, Compilers
 - ◇ **Teaching Assistant** – Université de Montréal – January 2009 – April 2009
Operating systems
 - ◇ **Teaching Assistant** – Collège Jean-de-Brébeuf – September 2005 – December 2005
Information and communication technologies.
- TALKS
- ◇ **Optimization Coaching**
Northwestern University (February 2015)
 - ◇ **Optimization Coaching for JavaScript**
Mozilla (July 2014)
<https://air.mozilla.org/optimization-coaching-for-spidermonkey/>
 - ◇ **Optimization Coaching**
Samsung Research (July 2014)
 - ◇ **The Typed Racket Numeric Tower**
Boston Racket Salon (January 2014)
 - ◇ **Optimization Coaching**
Indiana University Programming Languages Fest (October 2013)
 - ◇ **Contract Profiling**
Racketcon 2013
 - ◇ **Applying Random Testing to a Base Type Environment**
International Conf. Functional Programming 2013
 - ◇ **Optimization Coaching**
Harvard Programming Languages seminar (October 2012)
 - ◇ **Optimization Coaching**
Conf. Object-Oriented Programming Systems, Languages, and Applications 2012
 - ◇ **Optimization Coaching in DrRacket**
Racketcon 2012
 - ◇ **Typing the Numeric Tower**
International Symp. on Practical Aspects of Declarative Languages 2012
 - ◇ **The Performance Report DrRacket Tool**
Racketcon 2011 (Lightning Talk)
 - ◇ **Where Are You Going with These Types?**
Symp. on Implementation and Application of Functional Languages 2010
 - ◇ **Type-Driven Optimization in Typed Racket**
Scheme and Functional Programming Workshop 2010 (Lightning Talk)
 - ◇ **PICOBIT: A Compact Scheme System for Microcontrollers**
Symp. on Implementation and Application of Functional Languages 2009
 - ◇ **Small Scheme Stack**
Scheme and Functional Programming Workshop 2008
 - ◇ **Small Scheme Stack**
Montreal Scheme and Lisp User Group (August 2008)
 - ◇ **DiCoInfo**
RALI-OLST Seminar (July 2007)

- AWARDS
- ◇ **Peter J. Landin Award 2009**, best paper at IFL 2009
 - ◇ **Computer Science Games 2009**, 1st place
 - ◇ **Computer Science Games 2008**, 3rd place
 - ◇ **Computer Science Games 2007**, 2nd place
- OTHER ACTIVITIES
- ◇ **Committees** OOPSLA 2013 Artifact Evaluation, PLDI 2014 Artifact Evaluation
 - ◇ **Reviewer** ICFP 2011, ICFP 2012, OOPSLA 2013, JFP (2013, 2014)
 - ◇ **Organizer / Program Chair** RacketCon 2014, RacketCon 2015
 - ◇ **Organizer** Programming languages seminars – Northeastern University
September 2012 – December 2014
 - ◇ **Organizer** Ph.D. seminars – Northeastern University
May 2011 – September 2011
 - ◇ **Organizer** Programming languages Jr. seminars – Northeastern University
January 2010 – December 2011
 - ◇ **President** Computer Science Student Association – Université de Montréal
June 2008 – June 2009
 - ◇ **Vice-President** Computer Science Student Association – Université de Montréal
January 2007 – February 2008
- REFERENCES ◇ **Available on request**