David Darais

University of Vermont
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Appointments

Tenure-track Assistant Professor in Computer Science. University of Vermont. 2018.

Research Interests

Programming Languages, Program Analysis, Program Verification, Type Systems, Abstract Interpretation, Certified Programming, Computer Security, Oblivious Algorithms, Data Privacy, Differential Privacy, Functional Programming, Functional Language Implementation, Parsing.

Education

PhD, Computer Science, University of Maryland, 2017
PhD Thesis: "Mechanizing Abstract Interpretation"
Advisor: David Van Horn

MS, Computer Science, Harvard University, 2015
PhD Qualifying Exam: "Abstract Control in Program Analysis"
Advisor: Greg Morrisett

BS, Computer Science, University of Utah, 2011
BS Thesis: "Extracting the Essence of Type Classes"
Advisors: Matthew Flatt & Matthew Might

Publications

David Darais, Nicholas Labich, Phúc C. Nguyễn, David Van Horn. Abstracting Definitional Interpreters. *International Conference on Functional Programming (ICFP).* ACM Press, 2017.

David Darais and David Van Horn. Constructive Galois Connections: Taming the Galois Connection Framework for Mechanized Metatheory. *International Conference on Functional Programming (ICFP).* ACM Press, 2016.
» *Invited to Appear in Journal of Functional Programming (JFP) Special Issue.*

David Darais, Matthew Might, and David Van Horn. Galois Transformers and Modular Abstract Interpreters: Reusable Metatheory for Program Analysis. *Object-Oriented Programming, Systems, Languages, and Applications (OOPSLA).* ACM Press, 2015.

Ilya Sergey, Dominique Devriese, Matthew Might, Jan Midtgaard, David Darais, Dave Clarke, and Frank Piessens. Monadic Abstract Interpreters. *Programming Language Design and Implementation (PLDI).* ACM Press, 2013.

Matthew Flatt, Ryan Culpepper, David Darais, and Robert Bruce Findler. Macros that Work Together: Compile-time Bindings, Partial Expansion, and Definition Contexts. *Journal of Functional Programming (JFP).* Cambridge University Press, 2012.

Matthew Might, David Darais, and Daniel Spiewak. Parsing with Derivatives: A Functional Pearl. *International Conference on Functional Programming (ICFP).* ACM Press, 2011.

Teaching

Spring 2018 / UVM CS 225: Programming Languages
Fall 2018 / UVM CS 295A: Software Verification

Professional Activities

(upcoming) TyDe 2019: Organizing Co-Chair
(upcoming) OOPSLA 2019: Student Research Competition (SRC) Co-chair
ICFP 2018: Extended Review Committee (ERC)
TyDe 2018: Program Committee (PC)

IFL 2018: Program Committee (PC)
OOPSLA 2017: Video Co-chair
ECOOP 2017: Doctoral Symposium Co-chair, Video Chair
PLDI 2017: Video Chair
POPL 2017: Video Chair
ECOOP 2016: Video Chair
PLDI 2016: Video Co-chair
POPL 2016: Artifact Evaluation Committee (AEC), Student Volunteer
ICFP 2013: Logo Designer, Student Volunteer Chair, Video Chair

Institutional Activities

Harvard Computer Science Graduate Council
Founding Chair, 2013–2015
Advocated for graduate students and fostered community within the department

Harvard School of Engineering and Applied Science Graduate Council
Founding Co-president (w/Christine Zgrabik), 2012–2013
Advocated for graduate students and fostered community within the school

Awards

Lin Fellowship, Harvard University, 2012
GSAS Graduate Fellowship, Harvard University, 2011
Magna Cum Laude Graduation Honors (3.97 GPA), University of Utah, 2011
College of Engineering Scholarships, University of Utah, 2007, 2008, 2009