Max S. New — Curriculum Vitae

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Employment

- ◇ University of Michigan (Ann Arbor, MI, USA) — *Aug. 2021* – Present
  Assistant Professor
  Computer Science & Engineering

- ◇ Wesleyan University (Middeltown, CT, USA) — *Dec. 2020 – Aug. 2021*
  Postdoctoral Researcher

Education

Northeastern University, Boston, MA — *2012 – 2018*
PhD in Computer Science, *Dec, 2020*
Thesis: *A Semantic Foundation for Gradual Typing*
Advisor: Amal Ahmed
Committee: Matthias Felleisen, Ronald Garcia, Daniel R. Licata, Peter Thiemann, Mitchell Wand

Northwestern University, Evanston, IL — *2009 – 2014*
MS in Computer Science, *June 2014*
BA in Computer Science and Mathematics, *June 2013*

Research interests

Programming language design, semantics and implementation; gradually typed programming languages; compiler intermediate languages; type theory; category theory

University Service

University of Michigan Hosting Committee — *Fall 2022-Winter 2023*
Graduate Committee — *Fall 2021-Winter 2022*

Professional Activies and Service

Program Co-chair with Jeremy Gibbons *April 2022*
Ninth Workshop on Mathematically Structured Functional Programming (MSFP 2022)

Program Co-chair with Sam Lindley *April 2020*
Eighth Workshop on Mathematically Structured Functional Programming (MSFP 2020)

Invited Participant
Shonan Meeting No. 146: Programming and Reasoning with Algebraic Effects and Effect Handlers *March 2019*
Dagstuhl Seminar 18201: Secure Compilation *May 2018*

Panelist NSF Proposal Reviewer, 2022

Panelist *January 2019*
Programming Languages Mentoring Workshop at POPL 2019
Panel: Grad School and Beyond

Co-chair with Gabriel Scherer *October 2016*
New England Programming Languages and Systems Symposium
(Selection Committee May 2016, June 2017, August 2018)

Program Committee Member (Conference)

- 38th International Conference on Mathematical Foundations of Programming Semantics (MFPS) 2022
- ACM SIGPLAN International Conference on Functional Programming (ICFP) 2019

Program Committee Member (Workshop)

- Human Aspects of Types and Reasoning Assistants (HATRA) 2021
- Human Aspects of Types and Reasoning Assistants (HATRA) 2020

External Review Committee/Artifact Evaluation Committee
OOPSLA 2023

Journal Reviewing for: ACM Transactions on Programming Languages and Systems (TOPLAS), Journal of Functional Programming (JFP), Logical Methods in Computer Science (LMCS)

Conference Reviewing POPL, ICFP, LICS, FoSSaCs, LNCS, TOPLAS

PUBLICATIONS (JOURNAL)

Call-by-name Gradual Type Theory *LMCS Vol 16, Issue 1, 2020*
Max S. New, Daniel R. Licata
Journal of Functional Programming

How to evaluate the performance of gradual type systems *JFP Vol 29, 2019*
Ben Greenman, Asumu Takikawa, Max S. New, Daniel Feltey, Robert Bruce Findler, Jan Vitek, Matthias Felleisen
Journal of Functional Programming

Fair Enumeration Combinators *JFP Vol 27, 2017*
Max S. New, Burke Fetscher, Robert Bruce Findler, Jay McCarthy
Journal of Functional Programming

PUBLICATIONS (CONFERENCE)

A Formal Logic for Formal Category Theory *FoSSaCs 2023*
Max S. New, Daniel R. Licata
International Conference on Foundations of Software Science and Computation Structures

Graduality and Parametricity: Together Again for the First Time *POPL 2020*
Max S. New, Dustin Jamner, Amal Ahmed
ACM SIGPLAN Symposium on Principles of Programming Languages

Gradual Type Theory *POPL 2019*
Max S. New, Daniel R. Licata, Amal Ahmed
ACM SIGPLAN Symposium on Principles of Programming Languages

Graduality from Embedding-projection Pairs *ICFP 2018*
Max S. New, Amal Ahmed
ACM SIGPLAN International Conference on Functional Programming

Call-by-name Gradual Type Theory *FSCD 2018*
Max S. New, Daniel R. Licata
International Conference on Formal Structures for Computation and Deduction

FabULous Interoperability for ML and a Linear Language *FoSSaCS 2018*
Gabriel Scherer, Max S. New, Nick Rioux and Amal Ahmed
International Conference on Foundations of Software Science and Computation Structures

Fully Abstract Compilation via Universal Embedding *ICFP 2017*
Max S. New, William J. Bowman, and Amal Ahmed
ACM SIGPLAN International Conference on Functional Programming

Oh Lord, Please Don't Let Contracts be Misunderstood (Functional Pearl) *ICFP 2016*
Christos Dimoulas, Max S. New, Robert Bruce Findler, Matthias Felleisen
ACM SIGPLAN International Conference on Functional Programming

A Coq Library For Internal Verification of Running-Times *FLOPS 2016*
Jay McCarthy, Burke Fetscher, Max New, Daniel Feltey, Robert Bruce Findler
International Symposium on Functional and Logic Programming

Is Sound Gradual Typing Dead? *POPL 2016*
Asumu Takikawa, Daniel Feltey, Ben Greenman, Max S. New, Jan Vitek, Matthias Felleisen
ACM SIGPLAN Symposium on Principles of Programming Languages

Workshop Talks

Relative Monads in Call-by-push-value as an Abstraction of Stack-Based Effects *HOPE 2022*
Max S. New
Higher-order Programming with Effects

From Call-by-push-value to Stack-based TAL? *LOLA 2019*
Max S. New
Syntax and Semantics of Low-Level Languages

Every Program in Your Redex Model, in Order *September 2013*
RacketCon 2013

Teaching

University of Michigan

- ◇ EECS 483, *Compiler Construction* *Fall 2021, Fall 2022*
  Upper-level undergraduate compilers course
- ◇ EECS 598, *Category Theory for Computer Scientists* *Winter 2022, Winter 2023*
  Graduate-level course on category theory and programming language semantics

Invited Talks

A Type theory for Formal Category Theory *October 2022*
LIX Proofs and Algorithms Seminar

Type Theoretic Gradual Typing *June 2019*
UPenn PL Club

A Type Theoretic Approach to Gradual Typing *October 2018*
CMU Principles of Programming Seminar

Semantic Foundations for Gradual Typing *June 2018*
Invited Talk, MFPS 2018

Call-by-name Gradual Type Theory *April 2018*
Northeastern PL Seminar

Retractions and Blame *December 2016*
Northeastern PL Seminar