

# Amal Ahmed

Northeastern University  
Khoury College of Computer Sciences  
328 West Village H  
440 Huntington Avenue  
Boston, MA 02115

Email: [amal@ccs.neu.edu](mailto:amal@ccs.neu.edu)  
Web: <http://khoury.northeastern.edu/home/amal>  
Office: +1 (617) 373-2076  
Mobile: +1 (609) 933-5576

## EDUCATION

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### Princeton University

- Ph.D. Computer Science, 2004
- Dissertation title: Semantics of Types for Mutable State
- George Van Ness Lothrop Fellow, 2002 – 2003

### Stanford University

- M.S. Computer Science, emphasis in Databases, 1995

### Brown University

- A.B. Computer Science and Economics, 1993

## EMPLOYMENT

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### Northeastern University, Khoury College of Computer Sciences, Boston, MA

- Professor, July 2022 – present
- Associate Dean of Graduate Programs, July 2021 – June 2024 and July 2025 – present
- *Sy and Laurie Sternberg Interdisciplinary Associate Professor*, July 2019 – June 2022
- *Associate Professor*, July 2017 – June 2022
- *Assistant Professor*, Sept 2011 – June 2017

### Inria Paris, Prosecco research team, Paris, France

- *Visiting Professor*, 2017 – 2018

### Indiana University, School of Informatics and Computing, Bloomington, IN

- *Assistant Professor*, 2009 – 2011

### Microsoft Research, Cambridge, UK

- *Visiting Researcher*, July – August 2010

### Toyota Technological Institute at Chicago, Chicago, IL

- *Research Assistant Professor*, 2006 – 2009

### Harvard University, Division of Engineering and Applied Sciences, Cambridge, MA

- *Postdoctoral Fellow in Computer Science*, worked with Greg Morrisett, 2004 – 2006

### Cornell University, Department of Computer Science, Ithaca, NY

- *Postdoctoral Research Associate*, 2003 – 2004

### Princeton University, Department of Computer Science, Princeton, NJ

- *Assistant in Instruction and Research Assistant*, 1998 – 2003

### AT&T Labs, Middletown, NJ

- *Member of Technical Staff*, 1995 – 1998

## RESEARCH INTERESTS

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**Correct and secure compilation across the software-hardware stack and safe language interoperability**, including design of sound foreign-function interfaces (FFIs) and richly typed compiler intermediate

languages to support safe mixing. More generally: semantics and type systems for reasoning about imperative code, multi-language systems, security, compiler transformations, probabilistic programming.

## HONORS / AWARDS

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- NSF CAREER Award, 2015
- Google Faculty Research Award, 2014
- George Van Ness Lothrop Fellowship in Engineering (University Honorific Fellowship), Princeton University, 2002 – 2003

## FUNDING

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- DARPA TRACTOR: *PROCTOR: Compositional Certified Translation of Concurrent C to Idiomatic Rust*. Prime: Yale (PI Zhong Shao); Northeastern PI: Amal Ahmed. \$1m.
- Fastly, Inc., *WebAssembly Correctness and Performance*. \$50k. Jun 2024.
- NSF FMITF: *Track I: Principles for Modular Probabilistic Programming and Inference*, CCF-2220408. PI: Steven Holtzen, Co-PI: Amal Ahmed. \$750k. Oct 2022-Sep 2026.
- DARPA V-SPELLS: *POLYMORPH: Promotion to Optimal Languages Yielding Modular Operator-Driven Replacements and Programmatic Hooks*. Prime: GALOIS; Northeastern PI: Amal Ahmed. \$514k. Apr 2021-Mar 2025.
- Fastly, Inc., *WebAssembly Component Model*. \$52k. Sep 2023.
- CRA Computing Innovation Fellows (CIFellows) Postdoc award for Zoe Paraskevopoulou. \$254k. Jan 2021-Dec 2022.
- NSF SHF: *Semantic Foundations for Gradual Typing*, CCF-1910522. PI: Amal Ahmed, Co-PI: Daniel Licata (Wesleyan). \$500k. Oct 2019-Sep 2022.
- IARPA HECTOR: *ACHILLES: Assured CryptographiC Integration of muLtiPle Languages for Encrypted Systems*. PI: abhi shelat, Co-PIs: Amal Ahmed, Daniel Wichs, Vinod Vaikuntanathan, Adam Chlipala, Ran Canetti, Azer Bestavros, Andrei Lapets, Alley Stoughton, Muthu Venkitasubramaniam. \$12m. Jun 2019-May 2024.
- NSF SHF: *Principled Compiling and Linking for Multi-Language Software*, CCF-1816837. PI: Amal Ahmed. \$450k. Oct 2018-Sep 2021. (REU Supplements 2019-2020: \$16k)
- NSF SHF: *Small: Foundations of Just-in-Time Compilation*, CCF-1618732. PI: Jan Vitek, Co-PI: Amal Ahmed. \$450k. Sep 2016-Aug 2019.
- NSF CAREER: *Verified Compilers for a Multi-Language World*, CCF-1453796. PI: Amal Ahmed. \$508k. May 2015-Apr 2020. (REU Supplements, 2017-2019: \$32k)
- NSF SHF: *Small: Secure Compilation of Advanced Languages*, CCF-1422133. PI: Amal Ahmed. \$500k. Aug 2014-Jul 2017. (REU Supplement, 2017: \$8k)
- Google Faculty Research Award, *Verified Compilers for a Multi-Language World*. \$60k. Feb 2014.
- NSF SHF: *Small: Effectful Software Contracts*, CCF-1203008. PI: Amal Ahmed, Co-PI: Amr Sabry (Indiana University). \$440k. Aug 2011-Jul 2014.

## ADVISING

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### Former Post-doctoral Advisees

- Ryan Doenges, Sep 2023 – Aug 2025. *Khoury Distinguished Postdoctoral Fellow*.
- Zoe Paraskevopoulou, Oct 2020 – Dec 2022. *CRA Computing Innovation Fellow*, 2020.  
*First position*: Formal Verification Research Engineer, Ethereum Foundation.
- Gabriel Scherer. Jan 2016 – Jul 2017.  
*First position*: Permanent Researcher, Inria.

### Graduated Ph.D. Students

- Daniel Patterson, PhD 2022. Thesis: Interoperability Through Realizability: Expressing High-level Abstractions using Low-level Code  
*First position*: Assistant Teaching Professor, Northeastern University.
- Max S. New, PhD 2020. Thesis: A Semantic Foundation for Gradual Typing  
*First position*: Assistant Professor, University of Michigan, Ann Arbor.
- William Bowman, PhD 2018. Thesis: Compiling with Dependent Types.  
*First position*: Assistant Professor, University of British Columbia (UBC).

### Current Ph.D. Students

- Olek Gierczak, since Aug 2019
- Andrew Wagner, since Jun 2020
- John Li, since Sep 2021 (co-advised with Steven Holtzen)
- Michelle Thalakkottur, since Sep 2021 (co-advised with Frank Tip)
- Brianna Marshall, since Sep 2023
- Conrad Zimmerman, since Sep 2024
- Elan Semenova, since Sep 2025

### Graduated M.S. Students

- Aaron Weiss, graduated May 2022  
Topic: Oxide: A Formal Semantics of Core Rust
- Hyeyoung Shin, graduated May 2019
- Phillip Mates, graduated Dec 2014  
Topic: Verified Compositional Closure Conversion with Mutable State Under Control
- James T. Perconti, graduated Apr 2014  
Topic: Verifying an Open Compiler using Multi-Language Semantics

### Ph.D. Dissertation Committees

- Sam Stites, 2026 (anticipated)
- Cameron Moy, 2026 (anticipated)
- Jacco Krijnen, Universiteit Utrecht, 2026 (anticipated)
- Michael Ballantyne, 2025
- Xiaojia Rao, Imperial College London, 2025
- Mickaël Laurent, Université Paris Cité, Jun 2024
- Carlos Tomé Cortiñas, Chalmers University of Technology, Mar 2024
- Akram El-Korashy, Max Planck Institute for Software Systems, 2023 (anticipated)
- Julia Belyakova, 2023
- Oli Fluckiger, 2022

- Ben Greenman, 2020
- Zoe Paraskevopoulou, Princeton University, 2020
- Justin Slepak, 2020
- Raimil Cruz, University of Chile, 2019
- Jonathan Schuster, 2019
- Mitesh Jain, Mar 2018
- Ezgi Cicek, Max Planck Institute for Software Systems, Jan 2018
- Nada Amin, EPFL, Aug 2016
- Paul Stansifer, Apr 2016
- Stephen Chang, May 2014
- Aaron Turon, Feb 2013 (won 2014 ACM SIGPLAN John C. Reynolds Doctoral Dissertation Award)
- Christos Dimoulas, Dec 2012
- Roshan James, Indiana University, 2012
- Michael Adams, Indiana University, 2011

### **M.S. Thesis Committees**

- Fabian Muehlboeck, Apr 2013

### **Undergraduate Research Advising**

- Owen Duckham, May 2025 – present
- Ari Prakash, May 2025 – present
- Zack Eisbach, Jan 2024 – present
- Noble Mushtak, Oct 2020 – Jun 2023
- Michael Fitzgibbons, Jan 2020 – May 2022
- Dustin Jamner, Jan 2016 – May 2020. Now Ph.D. student at MIT
- Lucy Menon (UCSD), Jul – Sep 2019. Now Ph.D. student at Northeastern
- Jay Kruer (Reed College), Jan – Jun 2019
- Nick Rioux, Sep 2013 – Aug 2018. Now Ph.D. student at U.Penn.
- Matthew Kolosick, Sep 2013 – Aug 2018. Now Ph.D. student at UCSD
- Durward Benham, Sep 2013 – Sep 2014

### **Awards Won by my PhD Students**

- Aaron Weiss, 1<sup>st</sup> Place Winner, Graduate Category, Student Research Competition at POPL 2019  
Submission: *Oxide: The Essence of Rust*
- Daniel Patterson, *NSF Graduate Research Fellowship – Honorable Mention*, Apr 2018
- William J. Bowman, 1<sup>st</sup> Place Winner, Graduate Category, Student Research Competition at POPL 2017  
Submission: *Towards Type-Preserving Compilation of Coq*
- Max S. New, 3<sup>rd</sup> Place Winner, Graduate Category, Student Research Competition at POPL 2017  
Submission: *Gradual Type Precision as Retraction*

### **Awards Won by my Undergraduate Students**

- Michael Fitzgibbons, 1<sup>st</sup> Place, Undergraduate Category, Student Research Competition, POPL 2022
- Noble Mushtak, 3<sup>rd</sup> Place, Undergraduate Category, Student Research Competition, POPL 2022
- Dustin Jamner, *NSF Graduate Research Fellowship*, Apr 2020
- Dustin Jamner, Summer Scholars Independent Research Fellowship, Northeastern Univ, 2019 (\$4700)

- Nick Rioux, *NSF Graduate Research Fellowship*, Apr 2018
- Nick Rioux, *CRA Undergraduate Research Award – Honorable Mention*, Feb 2018
- Nick Rioux, 3<sup>rd</sup> Place, Undergraduate Category, Student Research Competition, POPL 2017  
Submission: *Naturality Despite Nontermination: A Logical Relation for Linear Types and Polymorphism*
- Dustin Jamner, Provost’s Undergraduate Research Award, Northeastern University, 2016 (\$2100)
- Durward Benham, Scholars Independent Research Fellowship, Northeastern University, 2014 (\$4000)
- Nick Rioux, Scholars Independent Research Fellowship, Northeastern University, 2014 (\$4000)

## TEACHING

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### Northeastern University

- CS 7470: Seminar in Programming Languages: Logical Relations. Spring 2025
- CS 2500: Fundamentals of CS: Intro to Programming and Computing (Accelerated).  
Fall 2018, Fall 2019, Fall 2020, Fall 2021.
- CS 2500: Fundamentals of CS: Intro to Programming and Computing.  
Fall 2011, Fall 2012, Fall 2013, Spring 2014, Fall 2014, Fall 2016, Fall 2020
- CS 7480: Special Topics in Programming Languages: Gradual Typing and Principled Language  
Interoperability. Spring 2019
- CS 7480: Special Topics in Programming Languages: Types, Contracts, Gradual Typing, and Compiler  
Correctness. Fall 2015
- CS 7400: Intensive Principles of Programming Languages. Spring 2015, Spring 2016, Spring 2017,  
Spring 2020.
- CS 4410/6410: Compilers. Spring 2013
- CS 7480: Special Topics in Programming Languages: Type Systems. Spring 2012

### Indiana University

- CSCI B629: Integrating Static and Dynamic Typing. Fall 2010
- CSCI B629: Language-Based Approaches to Security. Spring 2010
- CSCI B522: Programming Language Foundations. Fall 2009

### University of Chicago

- CMCS 336: Type Systems for Programming Languages (co-taught with Umut Acar). Winter 2008

## UNIVERSITY SERVICE

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### Northeastern University

- Associate Dean for Graduate Programs, Khoury College of Computer Sciences, Jul 2021 – Jun 2024 and  
Jul 2025 – present
- Faculty Mentoring Committee (Chair), Khoury College of Computer Sciences, 2019 – 2022
- Faculty Hiring Committee, Khoury College of Computer Sciences, 2018 – 2019
- Undergraduate Committee, College of Computer & Information Science, 2016 – 2017
- Faculty Hiring Committee, College of Computer & Information Science, 2013 – 2016
- Ph.D. Committee, College of Computer & Information Science, 2011 – 2013
- Ph.D. Open House Co-organizer, CCIS, Spring 2012, Spring 2013, Spring 2017

### Indiana University

- Graduate Program Committee, Computer Science Program, Fall 2010
- Faculty Affairs Committee, Division B, School of Informatics and Computing, 2010

**Princeton University**

- Computer Science Graduate Committee, 1998 – 2003.
- Computer Science Representative to the Graduate Engineering Council, School of Engineering and Applied Sciences (SEAS), 2001 – 2002.

**PROFESSIONAL ACTIVITIES & SERVICE**

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- Editorial Board, Journal of the ACM (JACM), Aug 2023 – present
- Editorial Board, ACM Trans. on Programming Languages and Systems (TOPLAS), Jul 2023 – present
- Editorial Board, Logical Methods in Computer Science (LMCS), Aug 2021 – present
- Editorial Board, Journal of Functional Programming (JFP), Jan 2017 – present
- Editorial Board, Mathematical Structures in Computer Science (MSCS), Jan 2016 – Dec 2020
  
- Member, IFIP WG 2.8, Working Group on Functional Programming, Aug 2014 – present
  
- Steering Committee Chair: SIGPLAN Programming Languages Mentoring Workshop (PLMW) Jan 2019 – Jan 2020. Past Chair, Jan 2020 – Jan 2021.
- Deputy Steering Committee Chair: SIGPLAN PL Mentoring Workshop(PLMW), Jan 2018 – Jan 2019
  
- Co-organizer: SIGPLAN Workshop on Red-Hot Topics in Faculty Mentoring (RTFM)
  - RTFM @ POPL 2026 (with Derek Dreyer and Ilya Sergey), Jan 2026
  - RTFM @ PLDI 2024 (with Derek Dreyer and Ilya Sergey), Jun 2024
- Local Organizer: IFIP Working Group on Functional Programming (WG 2.8), York Harbor, Maine, May 2025
- Co-organizer: SIGPLAN Programming Languages Mentoring Workshop (PLMW)
  - PLMW @ ICFP 2016 (with Robby Findler and Atsushi Igarashi), Sep 2016
  - PLMW @ POPL 2014 (with Benjamin Pierce and Alan Schmitt), Jan 2014
- Co-organizer: Oregon Programming Languages Summer School (OPLSS)
  - OPLSS 2017 (with Dan Licata)
  - OPLSS 2014 (with Greg Morrisett)
  - OPLSS 2013 (with Benjamin Pierce, Frank Pfenning, and Bob Constable)
  
- Invited Speaker: ECOOP Summer School: *Compiler Verification for a Multi-Language World*, 2017 & 2018
- Invited Speaker/Panelist: MIT Path of Professorship Workshop 2016
- Invited Career Awardee talk, NSF CISE CAREER Workshop 2016
- Invited Lecturer: Oregon Programming Languages Summer School, 2011, 2012, 2013, 2015, 2016, 2017, 2019, 2023.
- Invited as Visiting Researcher: Institut Henri Poincare (IHP) thematic trimester on Semantics of Proofs and Certified Mathematics, Paris, France, May – Jul 2014
- Invited Lecturer: Ph.D. School preceding the IHP trimester on Semantics of Proofs and Certified Mathematics, held at Centre International de Recontres Mathematiques (CIRM), Marseilles, France, Apr 2014

- Invited Speaker: Programming Languages Mentoring Workshop (PLMW)
  - PLMW @ PLDI 2023: *Compiler Verification: A Look Back, A Look Forward*, Jun 2023
  - PLMW @ SPLASH 2022: *Managing Your Research, Your Advisor, Your PhD*, Dec 2022
  - PLMW @ ICFP 2021: *Managing Your Research, Your Advisor, Your PhD*, Aug 2021
  - PLMW @ SPLASH 2020: *Ask Me Anything*, Oct 2020
  - PLMW @ ICFP 2020: *Managing Your Research, Your Advisor, Your PhD*, Aug 2020
  - PLMW @ PLDI 2020: *Compositional Compiler Correctness*, Jun 2020
  - PLMW @ ICFP 2019: *Managing Your Research, Your Advisor, Your PhD*, Aug 2019
  - PLMW @ ICFP 2017: *Compositional Compiler Correctness*, Sep 2017
  - PLMW 2013: *Logical Relations: A Powerful Hammer for your Research Toolbox*, Jan 2013
  - PLMW 2012 (with Steve Zdancewic): *Work-Life Balance for Computer Scientists*, Jan 2012
- Workshop organizer:
  - Dagstuhl Seminar 25241: *Utilising and Scaling the WebAssembly Semantics*, Jun 2025
  - Dagstuhl Seminar 21292: *Scalable Handling of Effects*, Jul 2021
  - Dagstuhl Seminar 18201: *Secure Compilation*, May 2018
  - Dagstuhl Seminar 10351: *Modeling, Controlling and Reasoning About State*, Sep 2010
  - Dagstuhl Seminar 08061: *Types, Logics and Semantics for State*, Feb 2008
- Invited Participant:
  - Dagstuhl Seminar 26071: *Behavioral Types for Resilience*, Feb 2026
  - Dagstuhl Seminar 24051: *Next Generation Protocols for Heterogeneous Systems*, Jan 2024
  - Dagstuhl Seminar 23101: *Foundations of WebAssembly*, Mar 2023
  - IFIP Working Group (WG) 2.8, *Functional Programming*, observer, 2007, 2012, 2013, 2014
  - Dagstuhl Seminar 18172: *Algebraic Effect Handlers Go Mainstream*, Apr 2018
  - Dagstuhl Seminar 16131: *Language-Based Verification Tools for Functional Programs*, Mar 2016
  - Dagstuhl Seminar 12011: *Foundations for Scripting Languages*, Jan 2012
- NSF Proposal Review Panelist, 2011, 2012, 2015, 2017, 2019, 2022, 2024.
- ETAPS Doctoral Dissertation Award Committee, 2020.
- Journal reviewing: *Journal of the ACM (JACM)*, *ACM Transactions on Programming Languages and Systems (TOPLAS)*, *Journal of Functional Programming (JFP)*, *ACM Computing Surveys*, *Logical Methods in Computer Science (LMCS)*, *Theoretical Computer Science (TCS)*, *Information and Computation (I&C)*, *Higher-Order and Symbolic Computation (HOSC)*.
- Conference and workshop reviewing: *POPL*, *PLDI*, *OOPSLA*, *LICS*, *ICFP*, *ESOP*, *ECOOP*, *ISMM*, *PPDP*, *TLDI*, *APLAS*, *FOSSACS*, *MFPS*, *FOOL*, *IFL*, *FLOPS*, *LPAR*.

### **Program Chair (conference)**

- ACM SIGPLAN Symposium on Principles of Programming Languages (POPL) 2023, PC Chair
- ACM SIGPLAN Conf. on Object-Oriented Programming, Systems, Languages & Applications (OOPSLA) 2022, Review Committee Co-Chair
- 27<sup>th</sup> European Symposium on Programming (ESOP) 2018, PC Chair

**Program Chair (workshop)**

- Secure Compilation Meeting (SCM), co-located with POPL, 2017
- 1<sup>st</sup> ACM SIGPLAN Workshop on Higher-Order Programming with Effects (HOPE) 2012
- 3<sup>rd</sup> Workshop on Syntax and Semantics of Low-Level Languages (LOLA) 2012
- ACM Workshop on Types in Language Design and Implementation (TLDI) 2009

**Program Committee Member (conference)**

- ACM/IEEE Symposium on Logic in Computer Science (LICS) 2025
- Conference on Mathematical Foundations of Programming Semantics (MFPS) 2024
- Intl. Conference on Formal Structures for Computation and Deduction (FSCD) 2022
- ACM Symposium on Principles of Programming Languages (POPL) 2022
- ACM Conference on Object-Oriented Programming, Systems, Languages, & Applications, 2020
- ACM Conference on Programming Language Design and Implementation (PLDI), External PC, 2020
- ACM Conference on Programming Language Design and Implementation (PLDI) 2019
- Intl. Conference on Types for Proofs and Programs (TYPES) 2018
- ACM/IEEE Symposium on Logic in Computer Science (LICS) 2016
- ACM International Conference on Functional Programming (ICFP) 2015
- ACM Symposium on Principles of Programming Languages (POPL) 2015
- ACM/IEEE Symposium on Logic in Computer Science (LICS) 2013
- Asian Symposium on Programming Languages and Systems (APLAS) 2012
- ACM SIGPLAN Haskell Symposium, 2012
- Conference on Mathematical Foundations of Programming Semantics (MFPS) 2011
- Foundations of Software Science and Computation Structures (FOSSACS) 2011
- European Symposium on Programming (ESOP) 2010
- ACM International Conference on Functional Programming (ICFP) 2009
- ACM Symposium on Principles of Programming Languages (POPL) 2008

**Program Committee Member (workshop)**

- SPLASH Doctoral Symposium, 2025
- ACM Workshop on Principles of Secure Compilation (PriSC), 2021
- ACM SIGSAC Workshop on Programming Languages and Analysis for Security (PLAS) 2020
- Workshop on Gradual Typing (WGT) 2020
- Workshop on Syntax and Semantics of Low-Level Languages (LOLA) 2019
- Interconnecting Code Workshop (ICW) 2019
- Workshop on Speculative Side-Channel Analysis (WoSSCA) 2018
- Principles of Secure Compilation (PriSC) 2018
- Symposium on Trends in Functional Programming (TFP) 2016
- Workshop on Script to Program Evolution (STOP) 2015
- Workshop on Dependently Typed Programming (DTP) 2014
- Workshop on Syntax and Semantics of Low-Level Languages (LOLA) 2014
- IEEE Workshop on Theory and Practice of Provenance (TaPP) 2013
- ACM SIGPLAN Workshop on Programming Languages meets Program Verification (PLPV) 2012
- ACM SIGPLAN Workshop on ML, 2011
- Workshop on Script to Program Evolution (STOP) 2011

- Theory Workshop of Verified Software: Theories, Tools and Experiments (VSTTE) 2010
- Workshop on Syntax and Semantics of Low-Level Languages (LOLA) 2010
- ACM Workshop on Programming Languages and Analysis for Security (PLAS) 2006
- Workshop on Semantics, Program Analysis, and Computing Environments for Memory Management (SPACE) 2006

#### **External Review Committee Member (conference/symposium)**

- ACM Conference on Programming Language Design and Implementation, EPC, (PLDI) 2020
- ACM International Conference on Functional Programming (ICFP) 2018
- ACM International Conference on Functional Programming (ICFP) 2016
- ACM Conference on Programming Language Design and Implementation (PLDI) 2013
- ACM Conference on Programming Language Design and Implementation (PLDI) 2011

#### **Steering Committee Member**

- POPL (ACM SIGPLAN Symposium on Principles of Programming Languages), 2022 – present
- SPLASH (ACM SIGPLAN Conf. on Systems, Programming, Languages, and Applications: Software for Humanity), 2021 – present
- ESOP (European Symposium on Programming), 2016 – 2022
- ETAPS (European Joint Conferences on Theory and Practice of Software), 2017 – 2019
- ICFP (ACM International Conf. on Functional Programming), Member at large, 2008 – 2012
- TLDI (ACM Workshop on Types in Language Design and Implementation), 2009 – 2012

### **KEYNOTES & INVITED TALKS**

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- *RichWasm Realizability: Facilitating Formal Specification of ABIs for the WebAssembly Platform*  
IFIP Working Group 2.8 (Functional Programming), York Harbor, Maine, May 2025.
- *Prose No More: Formally Specifying ABIs Using Realistic Realizability*  
**Keynote**, European Symposium on Programming (**ESOP**), ETAPS 2025, Hamilton, Canada, May 2025.
- *Formally Specifying ABIs Using Realistic Realizability*  
Imperial College London, London, UK, Mar 2025.
- *RichWasm Realizability: Facilitating Specification of ABIs for the WebAssembly Platform*  
WebAssembly Research Day, San Francisco, California, Feb 2025.
- *Formally Specifying ABIs Using Realistic Realizability*  
Dept. of Computer Science, Aarhus University, Nov 2024.
- *Formally Specifying ABIs Using Realistic Realizability*  
Invited Talk, Big Specification: Specification, Proof, and Testing at Scale, Isaac Newton Institute (INI), Oct 2024.
- *New Techniques for Sound Language Interoperability*  
Invited Talk, Women in Logic, co-located with LICS, Jul 2024.
- *Realistic Realizability: Specifying ABIs You Can Count On*  
IFIP Working Group 2.8 (Functional Programming), Utrecht, Netherlands, April 2024.
- *Semantic Intermediate Representations for Sound Language Interoperability*  
Chalmers University of Technology, Gothenburg, Sweden, Mar 2024.
- *All the Languages Together*  
University of British Columbia (UBC), Vancouver, Canada, Mar 2024.

- *RichWasm: Bringing Safe, Fine-Grained, Shared-Memory Interoperability to WebAssembly*  
Invited Talk, WebAssembly Workshop (WAW), co-located with POPL, London, UK, Jan 2024.
- *All the Languages Together*  
**Keynote**, ACM SIGPLAN Conf. on Object-Oriented Programming, Systems, Languages & Applications (**OOPSLA**), Cascais, Portugal, Oct 2023.
- *Formal Semantics for Multi-Language Programs*  
Invited Talk, Papers We Love Conf, St. Louis, Missouri, Sep 2023.
- *FireSide Chat: Amal Ahmed Hosts Felix Klock and Greg Morrisett*  
ACM SIGPLAN Conf. on Functional Programming (ICFP), Seattle, Washington, Sep 2023.
- *RichWasm: Bringing Type-Safe, Shared-Memory Interoperability to WebAssembly*  
IFIP Working Group 2.8 (Functional Programming), Cambridge, UK, April 2023.
- *Semantic Intermediate Representations for Sound Language Interoperability*  
**Keynote**, ACM Workshop on Principles of Secure Compilation (**PriSC**), Boston, Mass, Jan 2023.
- *Gradual Typing: Semantics, Soundness, Vigilance*  
Invited Speaker, Workshop on New Challenges in Programming Language Semantics, Lorentz Center, Leiden, The Netherlands, Nov 2022.
- *RichWasm: Bringing Type-Safe Shared-Memory Interoperability to WebAssembly*  
WebAssembly Research Day, San Francisco, California, Oct 2022.
- *Semantic Intermediate Representations for the Working Metatheoretician*  
**Keynote**, IEEE Conf. on Logic in Computer Science (**LICS**), Haifa, Israel, Aug 2022.
- *Semantic Soundness for Language Interoperability*  
Invited Speaker, Workshop on Expressiveness in Concurrency and Structural Operational Semantics EXPRESS/SOS, August 2021.
- *Semantic Soundness for Language Interoperability*  
IFIP Working Group 2.8 (Functional Programming), New York, New York, May 2022.
- *Verifying Soundness of Foreign-Function Interfaces*  
Invited Speaker, Verified Software: Theory to Applications. Newton Institute Workshop, May 2021.
- *Secure Compilation: Challenges for the Next Decade*  
**Keynote**, Symposium on Computer Security Foundations (**CSF**), Boston, Massachusetts, June 2020.
- *Semantic Foundations for Gradual Typing*  
**Keynote**, Intl. Symposium on Principles and Practice of Declarative Programming (**PPDP**), Porto, Portugal, October 2019.
- *Compiler Verification: The Next Generation*  
Invited Speaker, PURPL Fest, Purdue Center for Programming Principles and Software Systems, West Lafayette, Indiana, September 2019.
- *Compositional Compiler Verification for a Multi-Language World*  
**Keynote**, Thirty-Fifth Conference on the Mathematical Foundations of Programming Semantics (**MFPS**), London, UK, June 2019.
- *Compositional Compiler Correctness for a Multi-Language World*  
**Keynote**, Asian Symposium on Programming Languages (**APLAS**), Wellington, New Zealand, December 2018.
- *All the Languages Together*  
**Keynote**, Strange Loop, St. Louis, Missouri, September 2018.
- *Formal Approaches to Secure Compilation*  
Journées Nationales 2018, Pré-GDR Sécurité Informatique, Paris, France, May 2018.

- *Compositional Compiler Verification for a Multi-Language World*
  - Logic & Semantics Seminar, Univ. of Cambridge Computer Laboratory, Cambridge, UK, June 2018
  - PPLV Seminar, University College London, London, UK, June 2018
  - Seminar, Department of Computing, Imperial College London, London, UK, June 2018
  - Computer Science Departmental Seminar, Oxford University, Oxford, UK, June 2018
  - Institute Colloquium, Max Planck Institute for Software Systems (MPI-SWS), Saarbrücken, Germany, January 2018
  - LFCS Seminar, University of Edinburgh, Edinburgh, Scotland, October 2017
  - Gallium and Prosecco Seminar, Inria Paris, Paris, France, September 2017
- *Compositional Compiler Correctness*  
Invited speaker, Programming Languages Mentoring Workshop (PLMW @ICFP), Oxford, UK, September 2017.
- *Compiler Verification for a Multi-Language World*  
Invited speaker, European Conference on Object-Oriented Programming (ECOOP) Summer School, Barcelona, Spain, June 2017.
- *Fully Abstract Compilation via Universal Embedding*  
IFIP Working Group 2.8 (Functional Programming), Lake Placid, New York, July 2016.
- *Correct and Secure Compilation for a Multi-Language World*  
Secure Compilation Meeting, Paris, France, August 2016.
- *Compositional Compiler Verification for a Multi-Language World*  
**Keynote**, International Conference on Formal Structures for Computation and Deduction (FSCD), Porto, Portugal, June 2016.
- NSF CISE CAREER Workshop, Invited Speaker (Career Awardee talk), Arlington, Virginia, April 2016
- *CPS Translation of Dependent Types*  
IFIP Working Group 2.8 (Functional Programming), Kefalonia, Greece, May 2015.
- *Compositional Compiler Verification for a Multi-Language World*  
POPL'15 PC Workshop, Princeton, NJ, September 2014.
- *Fully Abstract Closure Conversion in the Presence of State and Effects*  
IFIP Working Group 2.8 (Functional Programming), Estes Park, Colorado, August 2014.
- *Compositional Compiler Verification for a Multi-Language World*  
Workshop on Certification of High-level and Low-level Programs, Institut Henri Poincare (IHP) thematic trimester on Semantics of Proofs and Certified Mathematics, July 2014.
- *Verifying Compilers using Multi-language Semantics*  
IFIP Working Group 2.8 (Functional Programming), Aussois, France, October 2013.
- *Verifying an Open Compiler from System F to Assembly*  
IFIP Working Group 2.8 (Functional Programming), Annapolis, Maryland, November 2012.
- *Logical Relations: A Powerful Hammer for your Research Toolbox*  
Invited Speaker, Programming Languages Mentoring Workshop (PLMW), January 2013.
- *Work-Life Balance for Computer Scientists*  
Programming Languages Mentoring Workshop (PLMW), January 2012.
- *Stepping into the Future: Logical Relations Beyond Toy Languages*  
**Plenary Address**, Twenty-Sixth Conference on the Mathematical Foundations of Programming Semantics (MFPS), Ottawa, Canada, May 2010.
- *Logical Relations: A Step Towards More Secure and Reliable Software*
  - Computer Science Colloquium, Indiana University, Bloomington, Indiana, May 2009

- Colloquium, IMDEA Software, Madrid, Spain, April 2009
- Computer Science Colloquium, Cornell University, Ithaca, New York, April 2009
- MIT EECS Special Seminar, Massachusetts Institute of Technology, Cambridge, Massachusetts, March 2009
- Institute Colloquium, Max Planck Institute for Software Systems (MPI-SWS), Saarbrücken, Germany, March 2009
- *Gradual Typing with Polymorphism and Blame*  
Harvard University, Cambridge, Massachusetts, October 2008.
- *All for Nothing: Gradual Typing with Polymorphism and Blame*  
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Princeton University, Princeton, New Jersey, October 2008.
- *Step-Indexed Logical Relations*  
Dagstuhl Seminar 08061: Types, Semantics and Logics for State, Wadern, Germany, February 2008.
- *Equivalence-Preserving Compilation*  
IFIP Working Group 2.8 (Functional Programming), Reykjavik, Iceland, July 2007.
- *Hoare Type Theory*  
Workshop on Proof-Carrying Code (PCC 2006), held in conjunction with IEEE Symposium on Logic in Computer Science (LICS), Seattle, Washington, August 2006.
- *Taming Mutable State*  
-- Toyota Technological Institute, Chicago, Illinois, April 2006.  
-- New York University, Department of Computer Science, New York, NY, April 2006
- *Program Equivalence using Step-Indexed Logical Relations*  
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Sun Labs, Burlington, Massachusetts, November 2005.
- *L<sup>3</sup>: A Linear Language with Locations*  
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## INVITED LECTURE SERIES

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- *Semantic Type Soundness and Language Interoperability* (5 lectures)  
22<sup>nd</sup> Annual Oregon Programming Languages Summer School (OPLSS), Boston, MA June 2024.
- *Logical Relations* (4 lectures)  
21<sup>st</sup> Annual Oregon Programming Languages Summer School (OPLSS), June 2023.

- *Secure Compilation* (4 lectures)  
18<sup>th</sup> Annual Oregon Programming Languages Summer School (OPLSS), June 2019.
- *Correct Correct and Secure Compilation for Multi-Language Software* (4 lectures)  
16<sup>th</sup> Annual Oregon Programming Languages Summer School (OPLSS), July 2017.
- *Logical Relations and Compiler Verification* (4 lectures)  
15<sup>th</sup> Annual Oregon Programming Languages Summer School (OPLSS), June 2016.
- *Logical Relations* (5 lectures)  
14<sup>th</sup> Annual Oregon Programming Languages Summer School (OPLSS), June 2015.
- *Syntax and Semantics of Low-Level Languages* (4 lectures)  
Ph.D. School at CIRM, summer school preceding the Institut Henri Poincare (IHP) trimester on Semantics of Proofs and Certified Mathematics, April 2014.
- *Logical Relations* (6 lectures)  
12<sup>th</sup> Annual Oregon Programming Languages Summer School (OPLSS), July-August 2013.
- *Logical Relations* (5 lectures)  
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