

Nadia Polikarpova

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Research positions

Associate Professor University of California, San Diego (La Jolla, CA)	July 2023–present
Assistant Professor University of California, San Diego (La Jolla, CA)	Sep 2017–July 2023
Postdoctoral Associate Massachusetts Institute of Technology (Cambridge, MA)	Dec 2014–Aug 2017
Research Intern Microsoft Research (Redmond, WA)	May–Aug 2011

Education

PhD, Computer Science ETH Zurich (Switzerland)	Sept 2008–Jul 2014
MSc, Applied Mathematics and Informatics SPbSU ITMO (Saint-Petersburg, Russia)	Sept 2006–May 2008
BSc, Applied Mathematics and Informatics SPbSU ITMO (Saint-Petersburg, Russia)	Sept 2002–May 2006

Awards

Amazon Research Award (2025), Sloan Fellowship (2020), Intel Rising Stars Award (2020), NSF CAREER Award (2020), Rising Stars in EECS (2016).

Distinguished Paper Awards: OOPSLA 2023, PLDI 2021, ICFP 2020, POPL 2019, Formal Methods 2015, Formal Methods 2011.

Selected Publications

- P17. E. Anaya Gonzalez, R. Rothkopf, S. Lerner, N. Polikarpova *HILDE: Intentional Code Generation via Human-in-the-Loop Decoding Visual Languages and Human-Centric Computing (VL/HCC)*, 2025
- P16. K. Park, J. Wang, T. Berg-Kirkpatrick, N. Polikarpova, L. D’Antoni *Grammar-Aligned Decoding*, Neural Information Processing Systems (**NeurIPS**), 2024
- P15. S. Barke, E. Anaya Gonzalez, S. R. Kasibatla, T. Berg-Kirkpatrick, N. Polikarpova *HYSYNTH: Context-Free LLM Approximation for Guiding Program Synthesis*, Neural Information Processing Systems (**NeurIPS**), 2024
- P14. K. Ferdowsifard, R. Huang, M. B. James, N. Polikarpova, S. Lerner *Validating AI-Generated Code with Live Programming*, ACM CHI Conference on Human Factors in Computing Systems (**CHI**), 2024
- P13. J. Fiala, S. Itzhaky, P. Müller, N. Polikarpova, I. Sergey *Leveraging Rust Types for Program Synthesis*, ACM SIGPLAN Conference on Programming Language Design and Implementation (**PLDI**), 2023, **distinguished artifact award**

- P12. S. Barke, M. B. James, N. Polikarpova *Grounded Copilot: How Programmers Interact with Code-Generating Models*, ACM SIGPLAN Conference on Object-Oriented Programming, Systems, Languages, and Applications (**OOPSLA**), 2023, **distinguished paper award**
- P11. Z. Guo, D. Cao, D. Tjong, J. Yang, C. Schlesinger, N. Polikarpova *Type-Directed Program Synthesis for RESTful APIs*, ACM SIGPLAN Conference on Programming Language Design and Implementation (**PLDI**), 2022
- P10. N. Lehmann, R. Kunkel, J. Brown, J. Yang, N. Vazou, N. Polikarpova, D. Stefan, R. Jhala *STORM: Refinement Types for Secure Web Applications*, USENIX Symposium on Operating Systems Design and Implementation (**OSDI**), 2021
- P9. S. Itzhaky, H. Peleg, N. Polikarpova, R. Rowe, I. Sergey *Cyclic Program Synthesis*, ACM SIGPLAN Conference on Programming Language Design and Implementation (**PLDI**), 2021, **distinguished paper award**
- P8. S. Barke, H. Peleg, N. Polikarpova *Just-in-Time Learning for Bottom-Up Enumerative Synthesis*, ACM SIGPLAN conference on Systems, Programming, Languages, and Applications: Software for Humanity (**SPLASH/OOPSLA**), 2020
- P7. K. Ferdowsifard, A. Ordookhanians, H. Peleg, S. Lerner, N. Polikarpova *Small-Step Live Programming by Example*, ACM Symposium on User Interface Software and Technology (**UIST**), 2020
- P6. N. Polikarpova, D. Stefan, J. Yang, S. Itzhaky, T. Hance, A. Solar-Lezama *Liquid Information Flow Control*. ACM SIGPLAN International Conference on Functional Programming (**ICFP**), 2020, **distinguished paper award**
- P5. Z. Guo, M. B. James, D. Justo, J. Zhou, Z. Wang, R. Jhala, N. Polikarpova *Program Synthesis by Type-Guided Abstraction Refinement*. ACM SIGPLAN Symposium on Principles of Programming Languages (**POPL**), 2020
- P4. S. Barke, R. Kunkel, E. Meinhardt, N. Polikarpova, Eric Baković, L. Bergen. *Constraint-based learning of phonological processes*. Empirical Methods in Natural Language Processing (**EMNLP**), 2019
- P3. N. Polikarpova, I. Sergey. *Structuring the Synthesis of Heap-Manipulating Programs*. ACM SIGPLAN Symposium on Principles of Programming Languages (**POPL**), 2019, **distinguished paper award**
- P2. N. Polikarpova, I. Kuraj, and A. Solar-Lezama. *Program synthesis from polymorphic refinement types*. ACM SIGPLAN Conference on Programming Language Design and Implementation (**PLDI**), 2016
- P1. N. Polikarpova, J. Tschannen, and C. A. Furia. *A Fully Verified Container Library*. International Symposium on Formal Methods (**FM**), 2015, **best paper award**

Teaching

Programming Languages (UCSD, undergraduate)

Sp'18, Wi'19, Fa'19, Sp'20,
Fa'20, Sp'21, Fa'21, Sp'22, Sp'23
Fa'23, Sp'24, Sp'25

Programming Languages (UCSD, graduate)

Fa'22

Program Synthesis (UCSD, graduate)

Fa'17, Fa'18, Wi'20, Wi'21, Wi'22, Wi'23, Wi'24

Secure Communication in Adversarial Environments
(UCSD, graduate seminar)

Sp'25

Professional Membership and Service

Vice Chair for Graduate Affairs, UCSD CSE (Jul 2025–present)

Chair of SIGPLAN-M, the ACM SIGPLAN Long-Term Mentoring Committee (Dec 2022–Dec 2024)

Program (co-)Chair: Haskell'22, VSTTE'20, iFM'17

Area Chair: POPL'25

Program Committee Member: PLDI'24, OOPSLA'23, POPL'23, PLDI'22, ASL'22, EGRAPHS'22, OOPSLA'21, POPL'21, ICFP'20, VMCAI'20, ADSL'20, PLDI'19, SecDev'19, HCVS'19, iFM'19, Haskell'19, OOPSLA'18, POPL'18, SYNT'18, CAV'17, APLAS'16, FTfJP'16, SYNT'16, VSTTE'16, TAP'16, iFM'16, FESCA'16, VMCAI'16, PSI'15, FTfJP'15, FESCA'15, RV'14, FESCA'14

Co-Organizer: PLDI'22-23 (Workshops and Tutorials co-chair); Programming Languages Mentoring Workshop at PLDI'21, PLDI'20, and POPL'18; ESEC/FSE'13 (deputy general chair)

Keynote Speaker: PLDI'24, LICS/ITP'21, APLAS'20