Paul Krogmeier

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https://paulkrog.github.io

EDUCATION

University of Illinois Urbana-Champaign   2018–Present
Ph.D. in Computer Science (advisor: Madhusudan Parthasarathy).
Ph.D. Thesis: Theory and Algorithms for Symbolic Learning.

Purdue University
M.S. in Computer Engineering (advisor: Benjamin Delaware).   2016–2018
M.S. Thesis: A Core Calculus for Data Refinement.
B.S. in Computer Engineering.   2012–2016

RESEARCH INTERESTS

My interests are in the foundations of machine **learning and reasoning**, with a focus on **learning logical concepts** from highly **structured data**. This encompasses **program synthesis** from examples as well as the emerging problem of **learning logical classifiers from structures**. This work has recently pushed me into the fascinating problem of **specifying and synthesizing domain-specific languages**.

AWARDS

Distinguished Paper Award at POPL	2022
Wing Kai Cheng Fellowship	2018
Ross Fellowship	2016

REFEREED CONFERENCE PUBLICATIONS

Paul Krogmeier and P. Madhusudan.
Languages with Decidable Learning: a Meta-theorem.
OOPSLA 2023.

Paul Krogmeier*, Zhengyao Lin*, Adithya Murali*, and P. Madhusudan.
Synthesizing Axiomatizations using Logic Learning.
OOPSLA 2022.

Adithya Murali, Atharva Sehgal, Paul Krogmeier, and P. Madhusudan.
Composing Neural Learning and Symbolic Reasoning with an Application to Visual Discrimination.
IJCAI 2022.

Paul Krogmeier and P. Madhusudan.
Learning Formulas in Finite Variable Logics.
Distinguished paper, POPL 2022.

Gilles Barthe, Rohit Chadha, Paul Krogmeier, Aravinda Sistla, Mahesh Viswanathan.
Deciding Accuracy of Differential Privacy Schemes.
POPL 2021.

Paul Krogmeier, P. Madhusudan, Umang Mathur, Adithya Murali, Mahesh Viswanathan.
Decidable Synthesis of Programs with Uninterpreted Functions.
CAV 2020.

Umang Mathur, Adithya Murali, Paul Krogmeier, P. Madhusudan, and Mahesh Viswanathan.
Deciding Memory Safety for Single-pass Heap-manipulating Programs.
POPL 2019.

WORKSHOP PUBLICATIONS

Paul Krogmeier, Steven Kidd, Benjamin Delaware.
Towards Context-Aware Data Refinement.
CoqPL 2018

INVITED TALKS

Languages with Decidable Learning: a Meta-theorem.
Boston University, Mar 2023.

Learning Formulas in Finite-Variable Logics.
Department of Software Engineering, St. Petersburg State University, Mar 2022.

TEACHING

CS 421: Programming Languages and Compilers	**University of Illinois** Fall 2020, Fall 2021, Spring 2022, Fall 2022, Spring 2023, Fall 2023
ECE 369: Discrete Mathematics for Computer Engineering	**Purdue University** Fall 2017

SERVICE

ICALP 2023 external reviewer
LICS 2022 external reviewer

INVITED WORKSHOPS

Dagstuhl seminar   Fall 2019
Logic and Learning