

RESEARCH INTERESTS

I am broadly interested in interactive proof assistants, type theory and programming languages, program verification and synthesis, and language-based security. My research agenda revolves around developing language-based techniques to make it easier to write programs that require strong mathematical guarantees of correctness and security.

EMPLOYMENT

- University at Buffalo, SUNY
Assistant Professor, Department of Computer Science and Engineering 2024 – present
- TP-Link Technologies Co., Ltd.
Software Engineer 2013 – 2017

EDUCATION

- Purdue University
Ph.D. in Computer Science, advised by Benjamin Delaware 2017 – 2024
- Sichuan University
B.S. in Computer Science 2009 – 2013

PUBLICATIONS

Note: In recent years, the programming languages research community has been developing an additional review process for software artifacts that accompany a paper. This optional process typically awards the following badges:

- A indicates the artifact is available on a publicly accessible archival repository,
- F indicates the artifact was documented, consistent, complete, and exercisable with respect to the claims in the paper,
- R indicates the artifact was of particularly high quality, such that reuse and repurposing is facilitated, and
- V indicates the artifact can be used to replicate the main results of the paper.

- Taypsi: Static Enforcement of Privacy Policies for Policy-Agnostic Oblivious Computation
Qianchuan Ye and Benjamin Delaware
Proceedings of the ACM on Programming Languages, Volume 8 (OOPSLA1), 2024
<https://doi.org/10.1145/3649861> ARV
- A HAT Trick: Automatically Verifying Representation Invariants Using Symbolic Finite Automata
Zhe Zhou, **Qianchuan Ye**, Benjamin Delaware, and Suresh Jagannathan
Proceedings of the ACM on Programming Languages, Volume 8 (PLDI), 2024
<https://doi.org/10.1145/3656433> AR
- Taype: A Policy-Agnostic Language for Oblivious Computation
Qianchuan Ye and Benjamin Delaware
Proceedings of the ACM on Programming Languages, Volume 7 (PLDI), 2023
<https://doi.org/10.1145/3591261> AR
- RHLE: Modular Deductive Verification of Relational $\forall\exists$ Properties
Robert Dickerson, **Qianchuan Ye**, Michael K. Zhang, and Benjamin Delaware
Programming Languages and Systems, Lecture Notes in Computer Science (APLAS), 2022
https://doi.org/10.1007/978-3-031-21037-2_4 AFR
- Oblivious Algebraic Data Types
Qianchuan Ye and Benjamin Delaware
Proceedings of the ACM on Programming Languages, Volume 6 (POPL), 2022
<https://doi.org/10.1145/3498713> AR

- HACCLE: Metaprogramming for Secure Multi-Party Computation

Yuyan Bao, Kirshanthan Sundararajah, Raghav Malik, **Qianchuan Ye**, Christopher Wagner, Fei Wang, Mohammad Hassan Ameri, Donghang Lu, Alexander Seto, Benjamin Delaware, Roopsha Samanta, Aniket Kate, Christina Garman, Jeremiah Blocki, Pierre-David Letourneau, Benoit Meister, Jonathan Springer, Tiark Rompf, and Milind Kulkarni

Proceedings of the 20th ACM SIGPLAN International Conference on Generative Programming: Concepts and Experiences (GPCE) , 2021

<https://doi.org/10.1145/3486609.3487205>

- Narcissus: Correct-by-Construction Derivation of Decoders and Encoders from Binary Formats

Benjamin Delaware, Sorawit Suriyakarn, Clément Pit-Claudel, **Qianchuan Ye**, and Adam Chlipala

Proceedings of the ACM on Programming Languages, Volume 3 (ICFP) , 2019

<https://doi.org/10.1145/3341686> AF

- A Verified Protocol Buffer Compiler

Qianchuan Ye and Benjamin Delaware

Proceedings of the 8th ACM SIGPLAN International Conference on Certified Programs and Proofs (CPP) , 2019

<https://doi.org/10.1145/3293880.3294105>

WORKSHOPS

- Scrap your boilerplate definitions in 10 lines of Ltac!

Qianchuan Ye and Benjamin Delaware

The Eighth International Workshop on Coq for Programming Languages (CoqPL) , 2022

<https://github.com/ccyip/coq-idt>

DISSERTATIONS

- Language-Based Techniques for Policy-Agnostic Oblivious Computation

Qianchuan Ye

PhD Dissertation, Purdue University, April 2024

<https://doi.org/10.25394/pgs.25676727.v1>

TEACHING

- CSE305: Introduction to Programming Languages @University at Buffalo

Instructor

Fall 2025 and Spring 2025

- CSE199: Internet, Computing, and Society @University at Buffalo

Co-Instructor

Fall 2024

- CS565: Programming Languages @Purdue University

Teaching Assistant

Fall 2020 and Fall 2018

- CS182: Foundation of Computer Science @Purdue University

Teaching Assistant

Spring 2021, Spring 2018, and Fall 2017

ACADEMIC SERVICE

Program Committee Member

PLDI 2026

Program Committee Member

OOPSLA 2026

Program Committee Member

POPL 2026

Program Committee Member

CoqPL 2025

Artifact Evaluation Committee Member

ICFP 2024

External Reviewer

CPP 2022

Artifact Evaluation Committee Member

ICFP 2022

Artifact Evaluation Committee Member

POPL 2020

AWARDS AND HONORS

Phi Kappa Phi	2024
Bilsland Dissertation Fellowship	2023 – 2024
ACM SIGPLAN PAC Grant	2022
Purdue Graduate School Summer Research Grant	2021
China National Scholarship	2012
Third Prize, China National Mathematics Olympiad	2008