

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	<i>PLDI 2026</i>
Program Committee Member	<i>OOPSLA 2026</i>
Program Committee Member	<i>POPL 2026</i>
Program Committee Member	<i>CoqPL 2025</i>
Artifact Evaluation Committee Member	<i>ICFP 2024</i>
External Reviewer	<i>CPP 2022</i>
Artifact Evaluation Committee Member	<i>ICFP 2022</i>
Artifact Evaluation Committee Member	<i>POPL 2020</i>

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