Anton Xue

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Interests Convex optimization, formal methods, machine learning, programming languages

Education

Ph.D. Computer and Information Science 08/2019 – Present
University of Pennsylvania

B.S. Mathematics (Intensive) and Computer Science 08/2015 – 05/2019
Yale University

Work Experience

Research Intern 05/2022 – 08/2022
SRI International

Research Intern 06/2019 – 08/2019
Nokia Bell Labs

Research Assistant 09/2015 – 05/2019
Yale University Department of Computer Science

Research Intern 05/2018 – 08/2018
Harvard John A. Paulson School of Engineering and Applied Sciences

Research Intern 05/2017 – 08/2017
Max Planck Institute for Software Systems

Software Engineering Intern 05/2014 – 08/2015
Harvard Medical School

Awards and Honors

University of Pennsylvania ENIAC Fellowship 08/2019

Yale Computer Science Award 05/2019

National Science Foundation Graduate Research Fellowship 04/2019

Yale College Freshman Summer Research Fellowship 04/2016

Publications

Data-Driven System Level Synthesis 12/2020
Learning for Decision and Control, 2021

A Self-Certifying Compilation Framework for WebAssembly 01/2021
Verification, Model Checking, and Abstract Interpretation, 2021

G2Q: Haskell Constraint Solving 08/2019
Haskell Symposium, 2019

Lazy Counterfactual Symbolic Execution 06/2019
Programming Language Design and Implementation, 2019

Presentations

Towards a Self-Certifying Compiler for WebAssembly 12/2019
IBM Programming Language Day 2019

Towards a Self-Certifying Compiler for WebAssembly 10/2019
Formal Methods in Computer-Aided Design, Student Forum, 2019

Towards the Formalization and Analysis of R 11/2018
Formal Methods in Computer-Aided Design, Student Forum, 2018

Building a Symbolic Execution Engine for Haskell 11/2017
Formal Methods in Computer-Aided Design, Student Forum, 2017

Building a Symbolic Execution Engine for Haskell 08/2017
Tools for Automatic Program Analysis, 2017

A Symbolic Execution Framework for Haskell 01/2017
Principles of Programming Languages, Student Research Competition, 2017

Teaching

Teaching Assistant 05/2020 – 12/2020
CIS 515 Fundamentals of Linear Algebra and Optimization, Fall/2020, Spring/2021
CIS 160 Mathematical Foundations of Computer Science, Summer/2020
University of Pennsylvania

Teaching Assistant 09/2016 – 05/2019
MATH 305 Real Analysis (Course Grader), Spring/2019
CPSC 202 Mathematical Tools for Computer Science, Fall/2016, Fall/2017, Fall/2018
CPSC 366 Intensive Algorithms, Spring/2018
CPSC 365 Design and Analysis of Algorithms, Spring/2017
Yale University

Community

Student Volunteer 01/2022
Principles of Programming Languages, 2022

Artifact Evaluation Committee 06/2021
Static Analysis Symposium, 2021

Reviewer 03/2021
IEEE Control Systems Letters, 2021

Artifact Evaluation Committee 03/2021
Programming Language Design and Implementation, 2021

Artifact Evaluation Committee 03/2020
Programming Language Design and Implementation, 2020

Head Student Volunteer 07/2019
Computer Aided Verification, 2019

Student Volunteer 06/2019
Programming Language Design and Implementation, 2019

Department Student Advisory Committee 08/2017 – 05/2018
Yale University Computer Science Department

Student Volunteer 07/2017
Computer Aided Verification, 2017

Software

Self-Certified Optimizer for WebAssembly
`https://github.com/nokia/web-assembly-self-certifying-compilation-framework`

G2 Symbolic Execution Engine for Haskell
`https://github.com/BillHallahan/G2`

Simple-R Symbolic Execution Engine for R
`https://github.com/AntonXue/simple-r`

Multi-Terminal Interval Decision Diagrams
`https://github.com/dzufferey/mtidd`

Technical

Programming Languages
Julia, Haskell, C, Python, Java, R, Scala, C++, SMTLIB, LaTeX