Zhe Zhou

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Education

Purdue University 2018.8 – Present
PhD of Computer Science. Advisor: Prof. Suresh Jagannathan *West Lafayette, IN, USA*

Pecking University 2013.9 – 2017.7
Bachelor of Computer Science. Advisor: Prof. Guangyu Sun *Beijing, China*

Courses & GPA

Programming Languages, Reasoning about Programs, Compiling and Programming Systems
Operating Systems, Pattern Recognition and Decision-Making Processes GPA: 4.0

Skills & Languages

Mostly used: Ocaml, Coq, Z3
Familiar with: SML, C, C++, Java, Python, Scala, Haskell, Dafny

Research Interest

Formal verification, automated verification, type system, property-based testing, specification inference, program synthesis.

Research Projects

Data-driven abductive inference of library specifications OOPSLA'21
Design a data-driven inference procedure which is guided by counterexamples to infer specifications of multiple the blackbox library APIs that are consistent with the given whitebox client code.

Type-based Verification of Test Input Generators In progress
Design a refinement type system that verifies the coverage property of the random test generator.

Synthesizing Test Generators via Perturbation Learning In progress
Use a MCMC-based generative model to synthesize a specified test generator for the given blackbox buggy program, that efficiently derives set of buggy inputs from a single initial buggy input.

Proof Scripts Learning In progress
For the given proof goals, use the MCMC-based approach and transformer neural network to learn valid proof scripts that consist of sequence of rewrite rules.

Awards & Honors

Distinguished Artifacts OOPSLA'21
OOPSLA2021 Artifact: Data-Driven Abductive Inference of Library Specifications

Other Experience

Full Time C++ Software Engineer 2017.7 – 2018.7
Megvii *Beijing, China*