

Pardis Pashakhanloo

pardisp@seas.upenn.edu, pardisp.github.io

Education

Ph.D. in Computer and Information Science *Aug. 2017 – present*

University of Pennsylvania; advised by Mayur Naik and Boon Thau Loo.

Select Coursework: Software Analysis and Testing, Software Foundations, Machine Learning,
Advanced Databases, Theory of Computation

B.Sc. in Software Engineering *Aug. 2012 – Feb. 2017*

Sharif University of Technology

Select Coursework: Programming Language Design, Compiler Design, System Analysis and Design,
Object-oriented Programming and Design, Software Engineering

Research

CodeTrek: Flexible Modeling of Code using an Extensible Relational Representation

Pardis Pashakhanloo, Aaditya Naik, Yuepeng Wang, Hanjun Dai, Petros Maniatis, Mayur Naik
International Conference on Learning Representations (ICLR'22)

PacMan: Securing Dependencies Continuously via Package-Oriented Debloating

Pardis Pashakhanloo, Aravind Machiry, Hyonyoung Choi, Anthony Canino, Kihong Heo, Insup Lee,
Mayur Naik

ACM ASIA Conference on Computer and Communications Security (AsiaCCS'22)

Effective Program Debloating via Reinforcement Learning

Kihong Heo, Woosuk Lee, **Pardis Pashakhanloo**, and Mayur Naik

ACM Conference on Computer and Communications Security (CCS'18)

Making Break-ups Less Painful: Source-level Support for Transforming Legacy Software into a Network of Tasks

Nik Sultana, Achala Rao, Zihao Jin, **Pardis Pashakhanloo**, Henry Zhu, Ke Zhong, and Boon Thau Loo
Workshop on Forming an Ecosystem Around Software Transformation (FEAST@CCS'18)

Hashtray: Turning the tables on Scalable Client Classification

Nik Sultana, **Pardis Pashakhanloo**, Zihao Jin, Achala Rao, and Boon Thau Loo

IFIP/IEEE Symposium on Integrated Network and Service Management (IM'19)

Trace-based Behaviour Analysis of Network Servers

Nik Sultana, Achala Rao, Zihao Jin, **Pardis Pashakhanloo**, Henry Zhu, Vinod Yegneswaran, and Boon Thau Loo

15th International Conference on Network and Service Management (CNSM'19)

Internships

Research Internship at Microsoft (Summer'19)

I extended the CheckedC compiler to verify bounds declarations using static analysis.

Mentor: David Tarditi

Research Internship at Microsoft (Summer'20)

I investigated false positives in concurrency bug detection as a part of Torch Project.

Mentors: Suman Nath, Shuvendu Lahiri

Teaching Experience

Course Development Assistant at University of Pennsylvania (Summer'20)

Supervisor: Mayur Naik

I assisted in developing lab assignments and lectures for CIS-547 (Program Analysis)

POPL'20 Tutorial: Building Program Reasoning Tools using LLVM and Z3 (Spring'20)

I introduced LLVM and Z3's architecture and conducted hands-on exercises in this tutorial.

Teaching Assistant

Software Analysis (Fall'19 – Spring'21), Software Engineering Lab (Spring'17),

Numerical Methods (Spring'15, '16), Compiler Design (Fall'15, Spring'16),

Fundamentals of Programming (Fall'13, '14)

Select Projects

CodeTrek (July'20 – Dec'21)

Deep learning approach which represents codebases as relational databases and robustly embeds programs using guided walks.

PacMan (July'19 – July'20)

Package-oriented debloating framework for adaptive and security-aware management of an application's dependent packages.

Chisel (July'18 – March'19)

Automated tool for debloating and customization of C programs on top of LLVM; powered by reinforcement learning.

DoStbin (Aug'17 – Jan'18)

Data model for describing experiments involving denial-of-service attacks.

Tech Skills

Languages: C/C++, Java, Python, and SQL; familiar with Coq, CodeQL, MATLAB, and JavaScript.

Technologies: Apache Beam, Google Cloud framework; LLVM/Clang, PyTorch; git, unix-based OS; familiar with Apache server and NGINX; familiar with MLPack, Django, and NodeJS.

Awards

Computing Research Association Woman Graduate Cohort **Scholarship**

Jan. 2018, 2020

National Elites Foundation Scholarship for Outstanding Academic Success

Feb. 2014