

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 (*under review*)

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)

PLDI'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