Pi Songkuntham

Education

Princeton University, NJ, United States
M.A. Computer Science (exited PhD program), 2019 - 2021

Wesleyan University, CT, United States
B.A. Computer Science, 2015 - 2019, *Phi Beta Kappa*

Employment

Google

Software Engineer June 2021 - Present
Will work on core infrastructure.

Part-Time Student Researcher August 2020 - January 2021
(Core) Supported various aspects of distributed runtime of the new TensorFlow including API design and implementation of variable-length AllGather collective, an implementation and benchmarking of send and receive kernels, and distributed runtime performance indicator.

Software Engineering Intern (Ph.D.) May - August 2020
(Google Brain) Worked on design and implementation of collective operations (e.g. allreduce, broadcast, allpermute) for distributed TFRT and TensorFlow2.

Software Engineering Intern (Ph.D.) July - September 2019
(Dart language infrastructure team) Launched a Chrome extension enabling remote debugging for Dart applications. Improved Dart debug workflow for Google Ads, Google Assistant, and Flutter engineers both inside and outside of Google. All contributions are public on the Dart GitHub repository.

Software Engineering Intern June - August 2018
(Google Ads product team) Launched the full stack of quick response feature for internal Gmail using Dart, Angular, and Java.

Publications

MultiFlow: Cross-Connection Decoy Routing using TLS 1.3 Session Resumption
Victoria Manfredi, **Pi Songkuntham**
In Proc. of *8th USENIX Workshop on Free and Open Communications on the Internet (FOCI)*, 2018, 8 pages

Academic Experience

Department of Computer Science, Princeton University

Teaching Assistant September 2020 - May 2021
Taught precepts (small lectures & group discussions), advised undergraduates on projects, held office hours, and graded for the following courses.

- Introduction to Programming Systems, Christopher Moretti (Fall 2020)
- Advanced Programming Techniques, Robert Dondero (Spring 2021)

Department of Computer Science, Wesleyan University

Research Assistant May 2017 - June 2018
Designed protocols for Internet anti-censorship that can authenticate across multiple user connections. Tested design feasibility in TLS 1.3 in UNIX/Linux environment using OpenSSL.

Research Assistant May 2016 - July 2016
Studied lambda calculus and cost analysis of program source code.

Course Assistant
Graded homework, held weekly office hours and lab involving debugging others' code, explaining complex concepts in the following courses.

- Functional Programming, Daniel Licata (Spring 2017)
- Algorithms and Complexity, Daniel Licata (Fall 2018)
- Information Security, Sebastian Zimmeck (Fall 2018)
- Programming Language Implementation, Norman Danner (Spring 2019)

Awards

Michael Rice Prize
Award for excellence in computer science to a senior — 2019

Freeman Scholarship
Merit-based full-tuition scholarship to attend Wesleyan — 2015-2019

Projects

What Make COVID-19 Worse In Some Countries but Not Others
Applied supervised and unsupervised ML methods on COVID-19 data to better understand the pandemic.

Egalitarian Paxos in Pure Rust
Implemented Egalitarian Paxos in Rust, evaluated on AWS EC2. See Implementation and evaluation.

Distributed Hash Table
A Python implementation of distributed key-value datastore using a distributed hash table with a simplified version of Paxos used as the consensus algorithm.

Reliable Data Transfer
Java implementations of application-level Stop-and-Wait, Go-Back-N, Selective Repeat over UDP.

Cardinal Course [on GitHub]
Course review site for students to post ratings and share course reviews.

Word Challenge [on GitHub]
Anagram game and anagram solver in pure JavaScript.

Wasiddhi Run [on GitHub]
Endless running game using Phaser JavaScript library.

Activities

Google GHC Scholar 2020
Scholarship awarded by Google to attend the celebration of women in computing.

Oregon Programming Languages Summer School 2019
Received a grant from OPLSS sponsors to attend a conference on programming languages at the University of Oregon.

Cornell, Maryland, Max Planck Pre-doctoral Research School Scholar 2018
Scholarship awarded by Max Planck Society to attend the summer school at MPI-SWS. Learned about emerging trends in computer science research, interacted with leading scientists and research students.

Oracle Scholar 2018
Scholarship awarded by Oracle Academy to attend OurCS, research-focused workshop in computer science at Indiana University. Worked on mobile device location estimation based on RSSI of Bluetooth beacons.

Grace Hopper Celebration Scholar 2018
Scholarship awarded by AnitaB.org to attend the celebration of women in computing.

Visiting Student at the University of Edinburgh 2017-2018
Took courses at the School of Informatics.

Wesleyan Women in Science Steering Committee
Led and participated in events that seek to promote access to resources, build supportive community for women in STEM.