

# Mina Tahmasbi Arashloo

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RESEARCH INTERESTS   ◇ **Networked Systems**; with an emphasis on *Software Defined Networks (SDNs)*

EDUCATION   ◇ **Princeton University (2014–present)**.

- PhD in Computer Science (GPA: 4.0/4.0)
- Advisor: Professor Jennifer Rexford

◇ **Sharif University of Technology (2010–2014)**.

- B.Sc. in Computer Engineering (GPA: 19.50/20.00)
- Thesis: A Distance-Vector Routing Protocol for Named Data Networks
- Thesis Supervisor: Professor Ali Movaghar

PUBLICATIONS   ◇ **SNAP: Stateful Network-wide Abstractions for Packet Processing, SIGCOMM'16**  
Mina Tahmasbi Arashloo, Yaron Koral, Michael Greenberg, Jennifer Rexford, David Walker.

SNAP is a high-level network programming language that can express a wide range of *stateful* network-wide packet processing functions. Users program their packet processing functions on top of one big switch connecting the edges of the network, and rely on the SNAP compiler to translate them to data plane configurations for each network device. The program state is handled locally on the switches as opposed to the controller, and the compiler decides state placement and forwarding paths in a way to minimize congestion. We employ various data-structures (e.g., stateful extensions to binary decision diagrams) and tools (e.g., Gurobi optimizer) for efficient compilation.

◇ **Compiling Path Queries, NSDI'16**

Srinivas Narayana, Mina Tahmasbi Arashloo, Jennifer Rexford, David Walker.

Path queries is a new query system that enables efficient path-based traffic monitoring. Users specify queries in terms of regular expressions over predicates on packet locations and header values. A run-time system compiles the queries into a distributed finite automaton, which is used to collect only and only those packets that satisfy user queries. We employ various data-structures (e.g., extensions to binary decision diagrams) and tools (e.g., Ragel state machine compiler) to significantly improve query compilation time.

WORK EXPERIENCE   ◇ **Microsoft Azure**

Research Intern, working on ExpressRoute and SONiC (Fall 2016)  
Manager: Lihua Yuan

◇ **Princeton University**

Teaching Assistant  
Courses: Computer Networks (Spring 2016), Functional Programming (Fall 2015)

◇ **Sharif University of Technology**

Teaching Assistant

Courses: Computer Networks (Spring 2014, Fall 2013), Theory of Machine Languages and Automata (Fall 2012 - Fall 2013), Artificial Intelligence (Spring 2014, Fall 2013, Head-TA), Design and Analysis of Algorithms (Fall 2012)

HONORS AND AWARDS

- ◇ **Ranked 1<sup>st</sup>** in terms of cumulative GPA among students of Computer Engineering, 2010 beginners, Sharif University of Technology (2014).
- ◇ **Iranian National Elites Foundation** grant for undergraduate studies, for outstanding academic success (2010–2014).
- ◇ **Ranked 2<sup>nd</sup>** in Iran’s national entrance exam for M.Sc in computer engineering (June 2014).
- ◇ **Ranked 33<sup>rd</sup>** in Iran’s university entrance exam among over 400,000 participants (June 2010).
- ◇ **National Organization for Development of Exceptional Talents (NODET)** member (2003–2010).

COURSEWORK

- ◇ **Princeton University:** Advanced Computer Networks (Fall 2014), Reasoning about Networks (Spring 2014), Programming Languages (Spring 2014), Advanced Computer Systems (Fall 2015), Automated Reasoning about Software (Fall 2015), Fundamentals of Machine Learning (Spring 2016).
- ◇ **Sharif University of Technology:** Computer Networks (Spring 2012), Operating Systems (Spring 2012), Approximation Algorithms (Spring 2013, Graduate Course) Advance Topics in Theory of Computability, Complexity and Logic (Spring 2013), Database Design (Spring 2013).

ACTIVITIES

- ◇ **Vice President** of the **Student Scientific Chapter (SSC)**, Sharif University of Technology (2012, 2013).
- ◇ **Technical Staff** in **Asia Regional ACM International Collegiate Programming Contest (ICPC)**, Tehran, Iran (2012, 2013).
- ◇ **Scientific Committee** member in **Java Challenge**, Tehran, Iran (2012, 2013).  
Java Challenge is a nationwide artificial intelligence programming contest held by the department’s student chapter. The scientific committee is in charge of designing the game-plan and providing the contest backend.

SKILLS

- ◇ Programming: Java, Python, C, C++, SWIProlog, MySQL
- ◇ Tools: Mininet, P4 Software Switch, Pyretic, Gurobi, Mosek, Wireshark