

Pooria Namyar

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RESEARCH INTERESTS

Datacenter Networks, Network Availability and Reliability, Network Verification, Management & Control Plane Design

EDUCATION

- Doctor of Philosophy in Electrical and Computer Engineering** Aug 2019 – Present
University of Southern California Los Angeles, USA
Advisor: Prof. Ramesh Govindan
GPA: 4.0/4.0
- Master of Science in Computer Science** Aug 2019 – Present
University of Southern California Los Angeles, USA
GPA: 4.0/4.0
- Bachelor of Science in Electrical Engineering** Sep 2014 – July 2019
Sharif University of Technology Tehran, IRAN
GPA: 3.98/4.00 - 18.25/20.00

PUBLICATIONS

- Pooria Namyar**, Sucha Supittayapornpong, Mingyang Zhang, Minlan Yu, and Ramesh Govindan. "A Throughput-Centric View of the Performance of Datacenter Topologies". ACM SIGCOMM 2021
- Sucha Supittayapornpong, **Pooria Namyar**, Mingyang Zhang, Minlan Yu, and Ramesh Govindan. "Optimal Oblivious Routing for Structured Networks". Under Submission, IEEE INFOCOM 2022
- Pooria Namyar***, Mingyang Zhang*, Chao Wang, and Ramesh Govindan. "Towards Correct-by-Design Scalable Control Planes". Under Preparation 2021

RESEARCH EXPERIENCE

- Microsoft Research** Redmond, WA
Research Intern June 2021 – Present
– Mentors: Behnaz Arzani, Dan Crankshaw, Srikanth Kandula
- Networked Systems Laboratory** University of Southern California
Graduate Research Assistant Aug 2019 – Present
– **Reliable Control Plane Design and Verification** [*paper under preparation*]
Design and develop a highly-available control plane with provably correct and consistent behavior under complex failure scenarios by leveraging high-level languages to specify system components.
- **Throughput view of Datacenter Topologies**
Derived a theoretical upper bound on throughput of datacenter topologies and proposed it as a tool for measuring actual throughput by showing its tightness and scalability.
- **Routing complexity in Datacenter Topologies** [*paper under submission*]
Collaborated on development of an optimal scalable low-complexity routing scheme.
- Cloud-native Telecommunication Networks Laboratory** Sharif University of Technology
Undergraduate Research Assistant Sep 2017 – May 2019
– **E2E Cloud-based 5G Network Platform.**
Designed and developed a novel real-time Telecommunication Cloud platform supporting highly heterogeneous network services using Network Function Virtualization (NFV) and Software-defined Networking (SDN).
Tools: OpenBaton, OpenStack Ansible, OpenDayLight, Zabbix

- **IP Multimedia Subsystem (IMS) auto scaling on the Telco-cloud platform.**
Built a framework for automated implementation and scaling of network services, and evaluated on OpenIMS core.
Tools: OpenIMS, SIPp (traffic generator for sip protocol)
- **E2E Software-Defined Telco networks used for Cloud Communications.**
Built a modern software-based transport network emulator by applying arbitrary topologies and different link budgets for individual links while being backward compatible with legacy networks. **Tools:** OpenDayLight, Mininet, GNS3

Optical Networks Research Laboratory

Undergraduate Research Assistant

Sharif University of Technology

Jul 2018 – Nov 2018

- **Implementation of a Software Defined Optical Networks Platform.**

SKILLS

Programming: Python, C, C++, Java, Shell Scripts, Android, SQL

Network Related: Mininet, GNS3, Wireshark, Packet-Tracer, NS3, OPNET, NS2

Others: TLA+, PlusCal, Dafny, Z3, Gurobi, MATLAB, Git

TEACHING EXPERIENCE

Teaching Assistant, Data Networks, Fall 2018, Sharif University of Technology

Teaching Assistant, Introduction to Machine Learning, Fall 2018, Sharif University of Technology

HONORS & AWARDS

- **4Y Annenberg Graduate Student Fellowship**, *University of Southern California* 2019 – 2023
- **Top 10% of my class in the EE department**, *Sharif University of Technology* 2019
- **Top 1% of my class in the University**, *Sharif University of Technology* 2019
- **Iran's National Elites Foundation Fellowship**, *Tehran, IRAN* 2014 – 2019
- **Top 0.1% (ranked 69th) in Iranian Nation-wide University Entrance Exam for B.Sc.** 2014

CERTIFICATIONS

ICT Professional Foundation Program 2017, *Ericsson* 2017 – 2018

SELECTED COURSES

During M.Sc. & Ph.D.: Advanced Computer Networking, Computer-Aided Verification, Advanced Analysis of Algorithms, Operating Systems, Data Networks: Design and Analysis, Probability for Electrical and Computer Engineers

During B.Sc.: Data Networks (Grad level), Mobile & Wireless Communications (Grad level), Network Coding & Information Theory (Grad level), Theoretical Machine Learning (Grad level), Machine Learning (Grad level), Database Design, Theory of Language & Automata, Digital Communications, Communication Systems, Data Structure

SELECTED COURSE PROJECTS

- **Implementation of a compact version of TCP called cTCP**
Advanced Computer Networking, University of Southern California
- **Implementation and Analysis of "BBR: Congestion-Based Congestion Control" on cTCP**
Advanced Computer Networking, University of Southern California
- **Implementation of Process Management, VFS, and Virtual Memory in Weenix**
Operating Systems, University of Southern California
- **Survey on Private Information Retrieval(PIR)**
Network Coding & Information Theory, Sharif University of Technology
- **Survey on Usage of Gossip Algorithms in Distributed Estimation**
Theoretical Machine Learning, Sharif University of Technology
- **Site survey and Wifi signal propagation modeling**
Mobile & Wireless Communications, Sharif University of Technology
Built and analyzed a dataset for developing Wifi signal propagation and attenuation model.

EXTRACURRICULAR ACTIVITIES

2nd Conference on Modern Wireless Telecommunication Systems(5G), Student Committee

Mar 2016 – Mar 2017

REFERENCES

Ramesh Govindan

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Minlan Yu

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