Shahrooz Pouryousef

San Jose, CA | +1-413-404-2650 | shahrooz@cs.umass.edu | github.com/pooryousefshahrooz | Google Scholar
Work authorization: U.S. Permanent Resident (Green Card)

Summary

Data Center Networking researcher with a Ph.D. in Computer Science (UMass Amherst). Research + systems engineering across **congestion control**, **scheduling/orchestration**, and **reproducible DCN evaluation**. Built **event-driven simulators** (ns-3/OMNeT++/SimPy/Python), ran measurement-driven studies, and collaborated at Cisco on **data-center-scale scheduling for quantum workloads**. Strong Python engineering, experiment design.

Core Skills

- **DCN Topics:** Congestion control (TCP variants incl. CUBIC/DCTCP concepts), load balancing (ECMP/flowlets), queueing/ECN/AQM basics, Clos/leaf–spine topology, failure handling & path diversity.
- **Experimentation & Telemetry:** ns-3, OMNeT++/OMNeTPyPy, SimPy/asyncio;
- **Programming & Tools:** Python (advanced); NetworkX, pandas/NumPy; Git/Linux;
- **Adjacencies:** RL for traffic engineering & scheduling; compiler/scheduler co-design; distributed systems.

Experience

Research Scientist — Cisco (Quantum Data Centers) *San Jose, CA* 2025–Present

- Designed **DAG-based scheduling/orchestration** for distributed workloads across modular compute units; built **event-driven Python simulators** and experiment harnesses to study throughput/latency/utilization under switch delays and resource constraints.
- Prototyped **learning-augmented (RL) policies** for contention-aware orchestration;

Researcher — ACQUIRE Lab, University of Massachusetts Amherst *Amherst, MA* 2021–2025

- Applied **reinforcement learning & graph optimization** to routing/scheduling problems; developed analysis tooling and visualizations to evaluate policy quality and stability.
- Investigated robustness/noise in networked systems; authored papers

Researcher — Advanced Networked Systems Lab, University of Massachusetts Amherst *Amherst, MA* 2017–2021

- Explored **RL for traffic engineering** and centralized routing prototypes; conducted measurement-driven studies and analysis scripting.

Selected Projects (DCN-Relevant)

- **TCP Congestion-Control Simulation (OMNeTPyPy/ns-3):** Event-driven setup (linear/multi-hop) logging **CWND, throughput, per-flow rate, queue behavior, latency**
- **Topology Generator & Scheduling Experiments: Layered/Clos topology generator** with per-switch capacity limits; experiments on path diversity vs. blocking under varying loads.

Publications (selected)

Peer-reviewed publications in *IEEE QCE*, *TQE*, *QCNC*, and SIGCOMM-adjacent venues. Full list on Google Scholar: link.

Education

Ph.D., Computer Science — University of Massachusetts Amherst 2025

Dissertation: *Resource Allocation in Quantum Networks* (scheduling/orchestration and evaluation under probabilistic constraints)

Advisor: Prof. Don Towsley

M.S., Computer Science — University of Massachusetts Amherst 2020

M.S., Computer Engineering — Sharif University of Technology 2015

B.S., Information Technology — University of Tabriz 2013

Service & Teaching

Instructor for two undergraduate CS courses; mentored six undergraduates across networking/ML projects. Reviewer: IEEE TQE/ToN conferences/journals; student travel grants at major networking venues.