




Serhat Arslan

Ph.D. Student in Electrical Engineering, admitted Autumn 2018

 Resume available Online

Bio

EDUCATION AND CERTIFICATIONS

- MS, Stanford University , Electrical Engineering (2020)
- BS, Koç University , Electrical and Electronics Engineering (2016)

SERVICE, VOLUNTEER, AND COMMUNITY WORK

- Panel Moderator (March 1, 2023)
- Shadow PC
- Section Leader (June 24, 2019 - July 4, 2019)

PATENTS

- Serhat Arslan, Yuliang Li, Gautam Kumar, Nandita Dukkipati. "United States Patent 18136551 Network Congestion Control In Sub-Round Trip Time", Google LLC, Oct 19, 2023

LINKS

- <http://web.stanford.edu/~sarlsan/>: <http://web.stanford.edu/~sarlsan/>

Research & Scholarship

CURRENT RESEARCH AND SCHOLARLY INTERESTS

Network intelligence

There are 2 main aspects of network management:

Sensing

- Collecting useful and enough amount of information from the network is essential for modern, data-centric decision processes to work well.

Frameworks such as In-band Network Telemetry could be utilized to collect precise information on every single packet in the network.

Control

- Modern data science methodologies allow engineers to infer about the state of the network.

Naturally, the next step is to design tailored control algorithms that would utilize available resources the best.

Potential methods include, but not limited to, machine learning algorithms and control theory.

Professional

WORK EXPERIENCE

- Student Researcher - Google LLC (June 14, 2021 - March 27, 2022)
- Software Engineering Intern - Google LLC (June 15, 2020 - 9/27/2020)
- Network Engineer - Vodafone (2016 - 2018)

Publications

PUBLICATIONS

- **SFC: Near-Source Congestion Signaling and Flow Control**
Le, Y., Lee, J., Blending, J., Chen, J., Nikolaidis, G., Pan, R., Soule, R., Akella, A., Segura, P. Y., Singhvi, A., Li, Y., Meng, Q., Kim, et al
Arxiv.
2023 18
- **Green With Envy: Unfair Congestion Control Algorithms Can Be More Energy Efficient**
Arslan, S., Renganathan, S., Spang, B., ACM
ASSOC COMPUTING MACHINERY.2023: 220-228
- **Bolt: Sub-RTT Congestion Control for Ultra-Low Latency**
Arslan, S., Li, Y., Kumar, G., Dukkipati, N., USENIX Association
USENIX ASSOC.2023: 219-236
- **Trust-free service measurement and payments for decentralized cellular networks** *HotNets '22*
Anand, S., Arslan, S., Chopra, R., Katti, S., Vaddiraju, M. K., Rana, R., Sheng, P., Tyagi, H., Viswanath, P.
2022: 8
- **Enabling the Reflex Plane with the nanoPU**
Ibanez, S., Mallery, A., Arslan, S., Jepsen, T., Shahbaz, M., Kim, C., McKeown, N.
Arxiv.
2022 14
- **Updating the theory of buffer sizing** *PERFORMANCE EVALUATION*
Spang, B., Arslan, S., McKeown, N.
2021; 151
- **NanoTransport: A Low-Latency, Programmable Transport Layer for NICs** *SOSR '21*
Arslan, S., Ibanez, S., Mallery, A., Kim, C., McKeown, N.
2021: 14
- **The nanoPU: A Nanosecond Network Stack for Datacenters**
Ibanez, S., Mallery, A., Arslan, S., Jepsen, T., Shahbaz, M., Kim, C., McKeown, N., USENIX ASSOC
USENIX ASSOC.2021: 239-256
- **Using Google Search Trends to Estimate Global Patterns in Learning** *L@S '20*
Arslan, S., Tiwari, M., Piech, C.
2020: 11
- **Switches Know the Exact Amount of Congestion**
Arslan, S., McKeown, N., ACM
ASSOC COMPUTING MACHINERY.2019

PRESENTATIONS

- Introduction to NS3 (Network Simulator 3) - Stanford University (April 2021)