Serhat Arslan

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EDUCATION

Stanford University, School of Engineering   Stanford, California

- ✓ *Ph.D. in Electrical Engineering, Advised by Prof. Nick McKeown, and Prof. Sachin Katti*   2020 – 2024
- ✓ *M.S. in Electrical Engineering GPA: 3.94 / 4.00*   2018 – 2020
- ✓ *Research Area: Next Generation Energy Aware Software Defined Networks and Systems*

Koç University, College of Engineering   İstanbul, Türkiye

- ✓ *B.S. in Electrical and Electronics Engineering GPA: 4.17 / 4.00*   2012 – 2016
- ✓ ***Top*** *ranking student among the engineering school,* ***Salutatorian*** *among the university*

PUBLICATIONS & RESEARCH

Serhat Arslan, Sundararajan Renganathan, Bruce Spang **"Green With Envy: Unfair Congestion Control Algorithms Can Be More Energy Efficient"** *In Proceedings of the 22nd ACM Workshop on Hot Topics in Networks (HotNets '23)*

Serhat Arslan, Yuliang Li, Gautam Kumar, Nandita Dukkipati **"Bolt: Sub-RTT Congestion Control for Ultra-Low Latency"** *In Proceedings of 20th USENIX Symposium on Networked Systems Design and Implementation (NSDI '23)*

Serhat Arslan, Ali Abedi, Sachin Katti **"d-Cellular Trust-Free Connectivity in Decentralized Cellular Networks"** (**Best Paper**) *In Proceedings of IEEE Future Networks World Forum (FNWF '23)*

S.V.R. Anand, Serhat Arslan, Rajat Chopra, Sachin Katti, Milind Kumar Vaddiraju, Ranvir Rana, Peiyao Sheng, Himanshu Tyagi, Pramod Viswanath **"Trust-free Service Measurement and Payments for Decentralized Cellular Networks"** *In Proceedings of the 21st ACM Workshop on Hot Topics in Networks (HotNets '22)*

Serhat Arslan, Stephen Ibanez, Alex Mallery, Changhoon Kim, Nick McKeown **"NanoTransport: A Low-Latency, Programmable Transport Layer for NICs"** *In Proceedings of the Symposium on SDN Research (SOSR '21). ACM*

Stephen Ibanez, Alex Mallery, Serhat Arslan, Theo Jepsen, Muhammad Shahbaz, Changhoon Kim, Nick McKeown **"The nanoPU: A Nanosecond Network Stack for Datacenters"** *15th USENIX Symposium on Operating Systems Design and Implementation (OSDI 21)*

Bruce Spang, Serhat Arslan, Nick McKeown **"Updating the Theory of Buffer Sizing"** *IFIP Performance Conference 2021. Journal of Performance Evaluation (PEVA) 151:102232, 2021*

Serhat Arslan, Nick McKeown **"Switches Know the Exact Amount of Congestion"** *In Proceedings of Buffer Sizing Workshop (BS '19). ACM, December 2019*

Serhat Arslan, Mo Tiwari, Chris Piech **"Using Google Search Trends to Estimate Global Patterns in Learning"** *In Proceedings of the Seventh (2020) ACM Conference on Learning @ Scale (L@S '20)*

PROFESSIONAL EXPERIENCE

Google LLC – **Core Systems Infrastructure, Software Engineering Intern**   Virtual, 2021 – 2022

- ✓ *Designed Bolt, a data center congestion control algorithm (see the publication above)*
  - o *Utilized* ***P4 language*** *and* ***C++*** *to develop and test the algorithm on programmable switches.*

Google LLC – **Cloud Network Analytics, Software Engineering Intern**   Sunnyvale, California, 2020 – Summer

- ✓ *Worked on network performance estimation project.*
  - o *Designed measurement techniques and* ***Machine Learning Models*** *to estimate current network state.*

Vodafone – **IP CPN (Converged Packet Network) L2 Senior Specialist**   İstanbul, Türkiye, 2017 – 2018

- ✓ *Migrated services from gateways to new edge routers for consolidation and cost reduction in the network.*
- ✓ *Reduced operational workload from hours to minutes via the Data Center Device Status Monitoring Tool*
  - o *Developed a* ***Python*** *program that collects current information from devices and produce report.*
- ✓ *Integrated and operated Carrier Grade NAT Devices.*

Vodafone – Discover Young Talent Program Attendee   İstanbul, Türkiye, 2016 – 2017

Rotation 1: @ PS (Packet Switch) Core Network 2nd Level Operations Management

- ✓ *Installed and documented the location based policy application via DPI infrastructure.*
- ✓ *Installed and documented the audit logging on all devices of PS Core Network's portfolio.*
  - o ***Shell Scripts*** *to regularly collect logging files to a central location.*
- ✓ *Tested new protocol pack releases of DPI Vendor for approval on live migration.*

Rotation 2: @ Data Services Department

- ✓ *Conducted market research for NFV-SDN technology opportunities for the business.*
- ✓ *Tested new home gateway firmware releases of Vendors.*

TEACHING

- ✓ **Stanford University, Advanced Topics in Networking (CS 244),** *Teaching Assistant*   2021 Spring
- ✓ **Stanford University, Introduction to Computer Networking (CS 144),** *Teaching Assistant*   2020 Autumn
- ✓ **CS Bridge (csbridge.stanford.edu)**, *Section Leader*   2016 and 2019 Summer
  - *International program that offers an intensive summer course on **Java** for high school students.*

ACTIVITIES

- ✓ **TheNetworkingChannel Panel (**How to give an interesting talk for a SIGCOMM/NSDI or similar audience?**)**, *Moderator,* 2023
- ✓ **EuroSys Conference**, *Shadow PC,* 2021
- ✓ **Association for Evaluation and Accreditation of Engineering Programs (MUDEK),** *Student Evaluator*, 2016
- ✓ **Yeniköy Rotaract Club**, *Founding President*, 2014 – 2015, *Member*, 2015 - 2018
- ✓ **World Dance Sports Federation**, *Licensed Dancer*, 2012 – 2015

COMPUTER LITERACY

Python	★★★★★
C/C++	★★★★★
P4	★★★★★
MATLAB	★★★★★
Shell Scripting	★★★★
Java	★★★

AWARDS & ACHIEVMENTS

- ✓ Koç University; President's Award   2016
- ✓ Koç University; Dean of Students Special Award   2016
- ✓ Koç University; Vehbi Koç Scholar   2012-2016
- ✓ Hisar Schools; Mehpare Taki Edin Social Services Award   2012
- ✓ Hisar Schools; Ayfer Yeniçağ Honor Award   2012

ADDITIONAL INFORMATION

Selected Courses:

- ✓ *Topics in Computer Networks (Build Your Own Router), Stanford University CS344, 2021 Spring*
- ✓ *Advanced Topics in Networking, Stanford University CS244, 2019 Spring*
- ✓ *Deep Learning, Stanford University CS230, 2019 Autumn*
- ✓ *Signal Processing for ML, Stanford University EE269, 2019 Autumn*
- ✓ *Convex Optimization, Stanford University EE364-A, 2019 Winter*
- ✓ *Statistical Signal Processing, Stanford University EE278, 2018 Autumn*
- ✓ *Linear Dynamical Systems, Stanford University EE263, 2018 Autumn*

Professional Training:

- ✓ *CCNA – Custom (Cisco Certified Network Associate),*
- ✓ *CCNP-SP – Custom (Cisco Certified Network Professional)*
- ✓ *Cisco ACI (Application Centric Infrastructure)*

Languages: *Turkish (Native), English (Fluent), German (A2 Certified)*

Hobbies: *Private pilot, Social dancing (Ballroom, Swing, Latin), Playing guitar, ukulele, and baglama*