

UFUK USUBUTUN

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EDUCATION

New York University Tandon School of Engineering, Brooklyn NY PhD in Electrical Engineering - Supervisor: Prof. Shivendra Panwar	<i>September 2020 - ongoing</i> CGPA: 3.81
Bilkent University, Ankara TR B.Sc. in Electrical and Electronics Engineering Minor Degree in Political Science	<i>August 2015 - January 2020</i> CGPA: 3.76 CGPA: 3.73
AGH University of Science and Techology, Cracow PL Exchange Student in Electrical Engineering	<i>February 2018 - July 2018</i>

EXPERIENCE

Marvell Semiconductors, Santa Clara CA USA <i>Switch Architect Engineer Intern</i> Upcoming Internship	June - August 2024
AT&T Labs, Bedminster NJ USA <i>Summer Research Intern</i> Worked on modeling 5G Radio Resource Control layer and adjusting states transitions by tuning inactivity timers to optimize for KPIs, with potential benefits for RAN optimization and Open-RAN implementations.	June - August 2023
Nokia Bell Labs, Murray Hill NJ USA <i>Networking Research Intern</i> Worked on efficiently solving traffic oblivious flow routing problems using machine learning methods with Murali Kodialam and Tv Lakshman of Bell Labs Core Research. (See publications & awards.)	June - August 2022
NYU Tandon School of Engineering, Brooklyn NY USA <i>Course Assistant</i> Teaching, grading, assignment preparation and administrative duties on graduate Internet Architectures & Protocols and Network Modeling & Analysis Classes taught by Prof. Shivendra Panwar.	Sept 2021 - ongoing
Darkblue Telecommunication Systems, Ankara TR <i>Project Engineer</i> Worked on positioning UAVs by tracking time shifts in Channel Reference Signals of multiple LTE base stations and processing them with an Extended Kalman Filter model. Collected samples using USRPs and implemented a proof of concept on MATLAB.	February - August 2020
Fraunhofer Institute for Integrated Circuits, Erlangen DE <i>Undergraduate Research Intern</i> Development of an OFDM based physical layer cooperative telecommunications simulator on Python for evaluation of proposed relaying schemes while using cyclic delay diversity at the transmitting antennas.	June - September 2019

PUBLICATIONS

Designing Reliable Virtualized Radio Access Networks <i>Ufuk Usubutun, Andre Gomes, Shankarayanan P. Narayanan, Matti Hiltunen, Shivendra Panwar</i>	In review for IEEE Globecom 2024
Oblivious Routing Using Learning Methods <i>Ufuk Usubutun, Murali Kodialam, T.V. Lakshman, Shivendra Panwar</i>	IEEE Globecom 2023
Do Switches Still Need to Deliver Packets in Sequence? <i>Ufuk Usubutun, Fraida Fund, Shivendra Panwar</i>	IEEE HPSR 2023 Best Paper Award

SKILLS

Related Course Work	Internet Arch. & Protocols, Network Modeling & Analysis, Probability, Cloud Computing & DCNs, Data Structures & Algorithms, Optimization, Wireless Comms., Machine Learning, Reinforcement Learning & Optimal Control, Network Optimization
Experience With	TCP Loss Detection Algorithms: particularly RFCs 8985 & 6675, GENI and Cloudlab Network Testbeds, Analysis of Packet Captures Queuing Theory and Markov Chain Modelling, Routing Optimization Problem Formulation and Descent Based Solutions System Availability Modeling, Machine Repair Problems 3GPP Cellular Protocol Stack, RRC Layer Protocols and Procedures
Programming Experience	<i>bash</i> scripting for large scale network experiments, linux kernel patching <i>pytorch</i> implementation of constrained routing optimization problems, <i>pandas</i> analysis of experimental data, Matlab LTE, 5G and Control System Toolbox experience, Java and Python OOP experience

ONGOING PROJECTS

On Packet Reordering and Time Based Loss Detection

Using our conclusions from HPSR 23', we are interested in (i) obtaining analytical bounds for tolerability of packet reordering under time based methods, (ii) discovering cases of wireless communications and multipath.

On 5G Radio Resource Control Layer State Space

In continuation of my summer internship work at AT&T Labs, I working to model and optimize the 5G RRC State Space. I am also considering a potential extension to Carrier Aggregation.

On Oblivious Routing

Using our method from Globecom 23', we are interested in (i) obtaining different ways of solving this problem, (ii) applying this idea to disaster recovery resource provisioning problems under limited network knowledge.

AWARDS AND RECOGNITIONS

2024 - The Dante Youla Award for Graduate Research Excellence	NYU Tandon ECE Dept.
2023 - Best Paper Award	IEEE HPSR 2023 Co-Chairs
2022 - Outstanding Innovation Award	Nokia Global Student Program

ACADEMIC ACHIEVEMENTS

Scored in the top 0.25% in the Turkey-wide University Entrance Exam with around 2 Million exam takers.

Awarded Academic Excellence Scholarships waiving tuition of undergraduate studies.

School of Engineering Fellow at NYU Tandon. Covers tuition, health insurance and stipend through PhD.

LANGUAGES

Turkish: Native
English: Fluent
French: Proficient

TOEFL Score: 109/120
Delf B2 Certificate

VOLUNTARY ACTIVITIES

Mentorship to High School Students within NYU Tandon ARISE High School Research Program.

Co-leading of high school FRC robotics team Anatolian Eaglebots 3390. Gave basic coding and electronics trainings for high school students and took part in design and strategy decisions for the team.

Executive Board Membership of Sociology Club for 2.5 years at Bilkent University. Organized conferences, discussion sessions and guided city walks with academics.

Participant and Executive Board Member of Theatre and Improvisation Club for 4 years at Bilkent University.
Acted in plays and improvisations. Directed an planned numerous improvisation sessions.

PERSONAL TRAITS

Passionate about history, foreign languages and jazz.