

Saliha BÜYÜKÇORAK EDİBALI, PhD

Assistant Professor, GTU

CONTACT INFORMATION

Address Departments of Electronics Engineering, Gebze Technical University, 41400, Gebze,
Kocaeli, Turkey

Phone +90 262 605 32 99

Mail sbuyukcorak@gtu.edu.tr / salihabuyukcorak@gmail.com

EXPERIENCE

Assistant Professor (2020–To Present)
Gebze Technical University
Departments of Electronics Engineering

Postdoctoral Researcher (Feb.–June 2019)
Istanbul Medipol University
Communications, Signal Processing, and Networking Center
Supervisor: Prof. Dr. Hüseyin Arslan

Research Assistant (2013–2019)
Gebze Technical University
Electronics Engineering Department, Telecommunications Engineering

Researcher (2010–2020)
Istanbul Technical University
Wireless Communication Research Laboratory

Visiting Researcher (June–July 2018)
University of Ottawa
School of Information Technology and Eng., Communication and Signal Processing Lab.
Supervisor: Prof. Dr. Abbas Yongaçoğlu
Research Scope: Localization, Heterogeneous Networks and Aerial Systems

Visiting Researcher (June–Aug. 2013 & Sep.–Oct. 2017)
University of Ottawa
School of Information Technology and Eng., Communication and Signal Processing Lab.
Supervisor: Prof. Dr. Abbas Yongaçoğlu
Research Scope: Received Signal Strength Based Localization

EDUCATION

Doctor of Philosophy (2019)
Istanbul Technical University
Faculty of Electrical and Electronics Eng., Telecommunications Eng. (3.83 / 4.00)
"A Generalized Localization Framework for Terrestrial and Aerial Systems"

Master of Science (2014)
Istanbul Technical University
Faculty of Electrical and Electronics Eng., Telecommunications Eng. (3.75 / 4.00)
"A Probabilistic Framework for Estimating Call Holding Time Distributions"
Supervisor: Prof. Dr. Güneş Karabulut Kurt

Bachelor of Science (2011)
Istanbul Technical University
Faculty of Electrical and Electronics Eng., Telecommunications Eng. (3.62 / 4.00)
"Channel Modeling with Ray Tracing in Multiple Antenna Systems"
Supervisor: Prof. Dr. Güneş Karabulut Kurt

PUBLICATIONS

Journals

1. Serdar Özyurt, Ahmet Faruk Coşkun, Saliha Büyükçorak, Güneş Karabulut Kurt and Oğuz Kucur, "A Survey on Multiuser SWIPT Communications for 5G+," in *IEEE Access*, vol. 10, pp. 109814-109849, 2022.
2. Caner Goztepe, Saliha Büyükçorak, Güneş Karabulut Kurt and Halim Yanikomeroglu, "Localization Threats in Next-Generation Wireless Networks," in *IEEE Communications Magazine*, vol. 59, no. 9, pp. 51-57, Sep. 2021.
3. Saliha Büyükçorak, Ozan Alp Topal, Onur Ferhanoğlu, Güneş Karabulut Kurt, "Mixture model and its experimental validation for visible light communications", in *Electronics Letters*, vol. 56, no. 11, pp. 559-562, 2020.
4. Saliha Büyükçorak, Güneş Karabulut Kurt, Abbas Yongaçoğlu, "Inter-network Localization Frameworks for Heterogeneous Networks with Multi-Connectivity", in *IEEE Transactions on Vehicular Technology*, vol. 68, no. 2, pp. 1839-1851, Feb. 2019.
5. Saliha Büyükçorak, Güneş Karabulut Kurt, "A Bayesian Perspective on RSS Based Localization for Visible Light Communication with Heterogeneous Networks Extension", in *IEEE Access*, vol. 5, pp. 17487-17500, 2017.
6. Saliha Büyükçorak, Güven Toprakkıran, Güneş Karabulut Kurt, "User Behavior Modeling of Voice Communications: An Empirical Study", in *Wireless Communications and Mobile Computing*, vol. 16, no. 16, pp. 29-46, Jun. 2016.
7. Özge Cepheli, Saliha Büyükçorak, Güneş Karabulut Kurt, "Hybrid Intrusion Detection System for DDoS Attacks", in *Journal of Electrical and Computer Engineering*, 2016.
8. Saliha Büyükçorak, Metin Vural, Güneş Karabulut Kurt, "Lognormal Mixture Shadowing", in *IEEE Transactions on Vehicular Technology*, vol. 64, no. 10, pp. 4386-4398, Oct. 2015.
9. Saliha Büyükçorak, Güneş Karabulut Kurt, Okan Cengaver, "A Probabilistic Framework for Estimating Call Holding Time Distributions", in *IEEE Transactions on Vehicular Technology*,

International Conferences

1. Lütfullah Özkan, Büşra Demirkol, Saliha Büyükçorak, Oğuz Kucur and Güneş Karabulut Kurt, "OP Analysis of Alamouti/MRC NOMA System with SDR-Based Real-Time Implementation," 2024 IEEE Wireless Communications and Networking Conference (WCNC), Dubai, United Arab Emirates, 2024.
2. Mehmet Ali Aygül, Saliha Büyükçorak, Daniel Benevides da Costa, Hüseyin F. Ates, Huseyin Arslan, "Signal Relation-Based Physical Layer Authentication", *IEEE International Conference on Communications (ICC)*, Dublin, Ireland, 2020.
3. Ufuk Altun, Saliha Büyükçorak, Güneş Karabulut Kurt, "A Testbed Implementation of Localization in Wireless Heterogeneous Networks", *27th Telecommunications forum TELFOR 2019*, Belgrade, Serbia, Nov. 2019.
4. Saliha Büyükçorak, Güneş Karabulut Kurt, Abbas Yongaçoğlu, "UAV Assisted Ground User Localization", *IEEE International Conference on Wireless for Space and Extreme Environments (WiSEE) - Integrated Ground-Air-Space Borne Communications (IGASC)*, Ottawa, Canada, Oct. 2019.
5. Muhammad Sohaib Solaija, Seda Doğan, Saliha Büyükçorak, Hüseyin Arslan, "Hybrid Terrestrial-Aerial Network for Ultra-Reliable Low-Latency Communication", *IEEE International Symposium on Personal, Indoor and Mobile Radio Communications (PIMRC)*, Istanbul, Turkey, Sep. 2019.
6. Saliha Büyükçorak, Güneş Karabulut Kurt, Abbas Yongaçoğlu, "Inter-Network Cooperative Localization in Heterogeneous Networks with Unknown Transmit Power", *IEEE International Symposium on Personal, Indoor and Mobile Radio Communications (PIMRC)*, Montreal, Canada, Sep. 2017.
7. Saliha Büyükçorak, Güneş Karabulut Kurt, Abbas Yongaçoğlu, "RSS Based Localization by Using Lognormal Mixture Shadowing Model", *24th International Conference on Telecommunication (ICT)*, Limassol, Cyprus, May 2017.
8. Saliha Büyükçorak, Güneş Karabulut Kurt, Abbas Yongaçoğlu, "An Empirical Study on Gamma Shadow Fading Based Localization", *The 25th European Signal Processing Conference (EUSIPCO)*, Kos, Greece, 2017.
9. Saliha Büyükçorak, Güneş Karabulut Kurt, A. Yongacoglu, "Received Signal Strength Based Localization in Sectorized Cellular Networks", *23rd International Conference on Telecommunications (ICT)*, Thessaloniki, Greece, May 2016.
10. Saliha Büyükçorak, Güneş Karabulut Kurt, Abbas Yongaçoğlu, "Cramer-Rao Lower Bound for Lognormal Mixture Shadowing", *11th International Wireless Communications Mobile Computing Conference (IWCMC)*, Dubrovnik, Croatia, Aug. 2015.
11. Saliha Büyükçorak, Güneş Karabulut Kurt, Güven Toprakkıran, "An Empirical Study on Call Arrivals in Cellular Networks: Incoming and Outgoing Calls", *7th International Conference*

on *Signal Processing and Communication Systems (ICSPCS)*, Gold Coast, Australia, Dec. 2013.

12. Saliha Büyükçorak, Güneş Karabulut Kurt, "Spatial Correlation and MIMO Capacity at 2.4 GHz", *The 2012 Iberoamerican Conference on Electronics Engineering and Computer Science*, vol. 3, pp. 9- 17, May 2012 (invited paper).
13. Saliha Büyükçorak, Güneş Karabulut Kurt, "Simulation and Measurement of Spatial Correlation in MIMO Systems with Ray Tracing", *5th International Conference on Signal Processing and Communication Systems (ICSPCS)*, Honolulu, HI, Dec. 2011.

National Conferences

1. Lütfullah Özkan, Saliha Büyükçorak, Eray Güven and Güneş Karabulut Kurt, "A Three-User 2x2 MIMO Alamouti/MRC NOMA System Implementation," *31st Signal Processing and Communications Applications Conference (SIU)*, Istanbul, Türkiye, 2023.
2. Lütfullah Özkan, Saliha Büyükçorak and Güneş Karabulut Kurt, "Real-Time RF Energy Harvesting System with Software Defined Radio," *31st Signal Processing and Communications Applications Conference (SIU)*, Istanbul, Türkiye, 2023.
3. Harun Çağiran, Oğuz Kucur and Saliha Büyükçorak, "OP Performance of UAV Assisted Multi-User MIMO NOMA SWIPT System," *31st Signal Processing and Communications Applications Conference (SIU)*, Istanbul, Türkiye, 2023.
4. Deniz Garip, Saliha Büyükçorak and Güneş Karabulut Kurt, "On the Impact of Channel Models for Indoor Localization," *National Conference on Electrical, Electronics and Biomedical Engineering (ELECO)*, Bursa, Turkey, Dec. 2016.
5. Saliha Büyükçorak, Tayfun Erbaş, Güneş Karabulut Kurt, Abbas Yongaçoğlu, "Indoor Localization Applications", *22nd Signal Processing and Communications Applications Conference (SIU)*, Trabzon, Turkey, Apr. 2014.
6. Özge Cepheli, Saliha Büyükçorak, Güneş Karabulut Kurt, "User Behavior Modeling Based DDoS Attack Detection", *22nd Signal Processing and Communications Applications Conference (SIU)*, Trabzon, Turkey, Apr. 2014.
7. Mehmet Özgün Demir, Barış Kurt, Saliha Büyükçorak, Güneş Karabulut Kurt, A. Taylan Cemgil, Engin Zeydan, "Comparison of Sampling Strategies for Flow Length Estimation", *22nd Signal Processing and Communications Applications Conference (SIU)*, Trabzon, Turkey, Apr. 2014.
8. Saliha Büyükçorak, Güven Toprakkıran, Güneş Karabulut Kurt, "Call Holding Time Analysis in Cellular Networks", *21st Signal Processing and Communications Applications Conference (SIU)*, Girne, KKTC, Apr. 2013.
9. Saliha Büyükçorak, Güneş Karabulut Kurt, "MIMO Channel Capacity Measurements", *20th Signal Processing and Communications Applications Conference (SIU)*, Fethiye, Turkey, Apr. 2012.

PROJECTS

SDR-Based Real-Time Implementation of Multi-User Communication Systems for 5G+ (Sep. 2023 – Aug. 2024)

Project Type: Collaboration of GTU TTO and TUBITAK BILGEM

Project Supporter: TUBITAK

Work as Manager

Working with Prof. Dr. Oğuz Kucur, Doç Dr. Serdar Özyurt

Multiuser Multi-antenna (MIMO) Simultaneous Wireless Information and Power Transfer (SWIPT) Communications for 5G+ (Apr. 2022 –)

Project Type: 1001 ARDEB

Project Supporter: TUBITAK

Work as Researcher

Working with Prof. Dr. Oğuz Kucur, Doç Dr. Serdar Özyurt, Prof Dr. Güneş Karabulut Kurt

Improving Localization Performance with WiFi Signals (Feb. 2018–Feb. 2020)

Project Type: 1505 TEYDEB

Project Supporter: TUBITAK & TURKCELL A. Ş.

Project Partners: Istanbul Technical University & TURKCELL A. Ş.

Work as Researcher until Feb. 2019, then work as Postdoctoral Researcher

Working with Prof. Dr. Güneş Karabulut Kurt

Localization Techniques with Mixture Models (Nov. 2016–Feb. 2019)

Project Type: Graduate Thesis Support Projects (PhD Level)

Project Supporter: Istanbul Technical University

Work as Researcher

Working with Prof. Dr. Güneş Karabulut Kurt

Attack Detection and Countermeasures Simulation (2012-2014)

Project Supporter: EU FP-7 ITEA 2 10030

Work as Researcher (determining and modeling of data usage characteristics in the network)

Working with Prof. Dr. Güneş Karabulut Kurt

User Behavior Modeling System in Mobile Devices (2012-2014)

Project Type: Graduate Thesis Support Projects (MSc Level)

Project Supporter: Istanbul Technical University

Work as Researcher

Working with Prof. Dr. Güneş Karabulut Kurt

Modeling Call Holding Time in Cellular Networks (2011–2012)

Project Supporter: TURKCELL A. Ş.

Work as Researcher

Working with Prof. Dr. Güneş Karabulut Kurt

AWARDS

1. One of the top finalists at 3MT contest of 26th European Signal Processing Conference (EUSIPCO 2018)
Thesis Title: A Generalized Localization Framework for Terrestrial and Aerial Systems
2. TUBITAK BİDEB 2211 Scholarship (2014-2018).

PATENTS

1. Saliha Büyükçorak, Güneş Karabulut Kurt, "Generalized Localization System based on Physical Layer Supported Spoofing Detection and Identification Verification",
 - a. Turkish Patent Institute, WO2020060522 March 2020.
 - b. Publication No: US-2022-005320-A1, Publication Date: 02/17/2022.

COURSES

Undergraduate Level

ELM 218 Probability and Randomness
ELM 264 Signals and Systems
ELM 361 Analog Communication Systems
ELM 464 Mobile Communication
ELM 460 Software Based Communication

Graduate Level

ELM 641 Localization Techniques
ELM 666 Wireless Communication

CITATIONS

Profile of Google Scholar

<https://scholar.google.com.tr/citations?hl=tr&user=e-iMgcMAAAAJ>

Number of Citation

300+ (Google Scholar)