

## Serkan Sarıtaş

---

### CONTACT INFORMATION

Assistant Professor  
Department of Electrical and Electronics Engineering  
Middle East Technical University  
06800 Ankara Turkey

*E-mail:* [ssaritas@metu.edu.tr](mailto:ssaritas@metu.edu.tr)  
*WWW:*  
<http://users.metu.edu.tr/ssaritas/>

### RESEARCH INTERESTS

Information security, networked control, systems and control, game theory, communication theory, information theory, detection and estimation theory, signal processing, cryptography

### ACADEMIC EXPERIENCE

**Middle East Technical University**, Ankara, Turkey

Assistant Professor, Department of Electrical and Electronics Engineering, September 2021 to present

**KTH Royal Institute of Technology**, Stockholm, Sweden

Post-Doctoral Researcher, Division of Information Science and Engineering, School of Electrical Engineering and Computer Science, January 2020 to August 2021

Advisors: Prof. Ragnar Thobaben, Prof. Tobias Oechtering, Prof. Mikael Skoglund

Post-Doctoral Researcher, Division of Network and Systems Engineering, School of Electrical Engineering and Computer Science, May 2019 to December 2019

Advisor: Prof. György Dán

Post-Doctoral Researcher, Division of Decision and Control Systems, School of Electrical Engineering and Computer Science, September 2018 to April 2019

Advisor: Prof. Henrik Sandberg

### EDUCATION

**Bilkent University**, Ankara, Turkey

Ph.D., Department of Electrical and Electronics Engineering, September 2013 to August 2018

- Thesis Topic: *Signaling Games in Networked System*
- Advisors: Prof. Dr. Sinan Gezici, Prof. Dr. Serdar Yüksel
- Area of Study: Control and Game Theory
- CGPA: 3.91/4.00

M.Sc., Department of Computer Engineering, September 2010 to May 2013

- Thesis Topic: *Analysis of Android Random Number Generator*
- Advisor: Prof. Dr. Ali Aydın Selçuk
- Area of Study: Cryptography
- CGPA: 3.49/4.00

B.Sc., Department of Electrical and Electronics Engineering, September 2005 to June 2010

- CGPA: 3.77/4.00

**Queen's University**, Kingston, Ontario, Canada

Visiting Research Student, Department of Mathematics and Statistics, January 2015 to May 2015

### CHAPTERS IN EDITED VOLUMES

[Ch1] **S. Sarıtaş**, E. Shereen, H. Sandberg, and G. Dán, Continuous authentication security games. In C. A. Kamhoua, C. D. Kiekintveld, F. Fang, Q. Zhu, Eds., *Game Theory and Machine Learning for Cyber Security*, Wiley-IEEE Press, pp. 180-203, 2021.

[doi:10.1002/9781119723950.ch11](https://doi.org/10.1002/9781119723950.ch11)

- [J1] E. Kazıklı, **S. Sarıtaş**, S. Gezici, and S. Yüksel, Quadratic signaling with prior mismatch at an encoder and decoder: Equilibria, continuity and robustness properties. *IEEE Transactions on Automatic Control*, vol. xx, no. x, pp. xxx-xxx, xxx xxxx. doi:10.1109/TAC.2022.3142121
- [J2] E. Kazıklı, **S. Sarıtaş**, S. Gezici, T. Linder, and S. Yüksel, Signaling games for log-concave distributions: Number of bins and properties of equilibria. *IEEE Transactions on Information Theory*, vol. 68, no. 3, pp. 1731-1757, March 2022. doi:10.1109/TIT.2021.3130672
- [J3] **S. Sarıtaş**, S. Yüksel, and S. Gezici, Dynamic signaling games with quadratic criteria under Nash and Stackelberg equilibria. *Automatica*, vol. 115, art. no 108883, May 2020. doi:10.1016/j.automatica.2020.108883
- [J4] **S. Sarıtaş**, S. Gezici, and S. Yüksel, Hypothesis testing under subjective priors and costs as a signaling game. *IEEE Transactions on Signal Processing*, vol. 67, no. 19, pp. 5169-5183, October 2019. doi:10.1109/TSP.2019.2935908
- [J5] **S. Sarıtaş**, B. Dülek, A. D. Sezer, S. Gezici, and S. Yüksel, Optimal power allocation for average detection probability criterion over flat fading channels. *IEEE Transactions on Signal Processing*, vol. 65, no. 6, pp. 1383-1398, March 2017. doi:10.1109/TSP.2016.2634552
- [J6] **S. Sarıtaş**, S. Yüksel, and S. Gezici, Quadratic multi-dimensional signaling games and affine equilibria. *IEEE Transactions on Automatic Control*, vol. 62, no. 2, pp. 605-619, February 2017. doi:10.1109/TAC.2016.2578843

- [C1] P. A. Stavrou, **S. Sarıtaş**, and M. Skoglund, Privacy signaling games with binary alphabets. *European Control Conference (ECC)*, London, UK, July 12–15, 2022, to appear.
- [C2] **S. Sarıtaş**, P. A. Stavrou, R. Thobaben, and M. Skoglund, Quadratic signaling games with channel combining ratio. *IEEE International Symposium on Information Theory (ISIT)*, Melbourne, Australia, July 12–20, 2021, pp. 2690–2695. doi:10.1109/ISIT45174.2021.9500824
- [C3] **S. Sarıtaş**, H. Forssell, R. Thobaben, H. Sandberg, and G. Dán, Adversarial attacks on CFO-based continuous physical layer authentication: A game theoretic study. *IEEE International Conference on Communications (ICC)*, Montreal, Canada, June. 14–23, 2021. doi:10.1109/ICC42927.2021.9500824
- [C4] D. Umsonst, **S. Sarıtaş**, and H. Sandberg, A Nash equilibrium-based moving target defense against stealthy sensor attacks. *IEEE Conference on Decision and Control (CDC)*, Jeju Island, Republic of Korea, Dec. 8–11, 2020, pp. 3772–3778. doi:10.1109/CDC42340.2020.9304197
- [C5] H. Sasahara, **S. Sarıtaş**, and H. Sandberg, Asymptotic security of control systems by covert reaction: Repeated signaling game with undisclosed belief. *IEEE Conference on Decision and Control (CDC)*, Jeju Island, Republic of Korea, Dec. 8–11, 2020, pp. 3243–3248. doi:10.1109/CDC42340.2020.9304351
- [C6] **S. Sarıtaş**, G. Dán, and H. Sandberg, Passive fault-tolerant estimation under strategic adversarial bias. *IEEE American Control Conference (ACC)*, Denver, CO, July 1–3, 2020, pp. 4644–4651. doi:10.23919/ACC45564.2020.9147994
- [C7] **S. Sarıtaş**, E. Shereen, H. Sandberg, and G. Dán, Adversarial attacks on continuous authentication security: A dynamic game approach. *International Conference on Decision and Game Theory for Security (GameSec)*, on Lecture Notes in Computer Science, T. Alpcan, Y. Vorobeychik, J. S. Baras, and G. Dán, Eds., vol. 11836, Stockholm, Sweden, Oct. 30 – Nov. 1, 2019, pp. 439–458. doi:10.1007/978-3-030-32430-8\_26

- [C8] **S. Sarıtaş**, P. Furrer, T. Linder, S. Yüksel, and S. Gezici, On the number of bins in equilibria for signaling games. *IEEE International Symposium on Information Theory (ISIT)*, Paris, France, July 7–12, 2019, pp. 972–976. doi:10.1109/ISIT.2019.8849498
- [C9] **S. Sarıtaş**, S. Gezici, and S. Yüksel, Binary signaling under subjective priors and costs as a game. *IEEE Conference on Decision and Control (CDC)*, Miami Beach, FL, Dec. 17–19, 2018, pp. 1130–1135. doi:10.1109/CDC.2018.8619612
- [C10] **S. Sarıtaş**, S. Yüksel, and S. Gezici, Nash and Stackelberg equilibria for dynamic cheap talk and signaling games. *IEEE American Control Conference (ACC)*, Seattle, WA, May 24–26, 2017, pp. 3644–3649. doi:10.23919/ACC.2017.7963511
- [C11] **S. Sarıtaş**, S. Yüksel, and S. Gezici, Dynamic signaling games under Nash and Stackelberg equilibria. *IEEE International Symposium on Information Theory (ISIT)*, Barcelona, Spain, July 10–15, 2016, pp. 1631–1635. doi:10.1109/ISIT.2016.7541575
- [C12] **S. Sarıtaş**, S. Yüksel, and S. Gezici, On multi-dimensional and noisy quadratic signaling games and affine equilibria. *IEEE American Control Conference (ACC)*, Chicago, IL, July 1–3, 2015, pp. 5390–5395. doi:10.1109/ACC.2015.7172182
- [C13] Ö. Ergül, T. Malas, S. Kılınç, **S. Sarıtaş**, and L. Gürel, Analysis of photonic-crystal problems with MLFMA and approximate Schur preconditioners. *Computational Electromagnetics International Workshop (CEM)*, İzmir, Turkey, July, 20–23, 2009, pp. 82–86. doi:10.1109/CEM.2009.5228100

#### AWARDS

##### **IEEE Turkey Section**

- IEEE Turkey PhD Thesis Award, 2020

##### **National Entrance Exams - Student Selection and Placement Center (ÖSYM)**

- Ranked **1st** among **410000** candidates in Selection Exam for Academic Personnel and Graduate Studies (ALES, 2014 Spring)
- Ranked **2nd** among **1.5 million** candidates in the University Entrance Examination (ÖSS, 2005)

##### **The Scientific and Technological Research Council of Turkey (TÜBİTAK)**

- Scholarship for Ph.D. Degree, 2013–2017
- Scholarship for M.Sc. Degree, 2010–2012
- Bronze medalist in 12th National Mathematics Olympiad, 2004

##### **Bilkent University**

- Best Oral Presentation Award, IEEE Bilkent Graduate Research Conference 2017
- Ph.D. Scholarship, 2013
- M.Sc. Scholarship, 2010
- B.Sc. Scholarship, 2005

#### TEACHING EXPERIENCE

##### **Middle East Technical University**, Ankara, Turkey

- Introduction to Logic Design (EE348)
  - 2021–2022 Spring
- Data Structures (EE441)
  - 2021–2022 Fall
- Engineering Design I & II (EE493 & EE494)
  - 2021–2022 Fall & Spring

##### **Bilkent University**, Ankara, Turkey

- Industrial Design Project I & II (EEE 493 & EEE 494)
  - 2017–2018 Fall & Spring : Teaching Assistant & Coordinator
  - 2016–2017 Fall & Spring : Teaching Assistant & Coordinator
  - 2015–2016 Fall & Spring : Teaching Assistant

- Control and Optimization of Stochastic Systems (EEE 446 & EEE 546)
  - 2017–2018 Summer : Teaching Assistant
  - 2015–2016 Summer : Teaching Assistant
- Advanced Mathematics for Signals, Systems, Control and Communications (EEE 440 & EEE 540)
  - 2016–2017 Summer : Teaching Assistant
- Random Processes (EEE 533)
  - 2014–2015 Fall : Teaching Assistant
- Digital Communications Theory (EEE 530)
  - 2013–2014 Spring : Teaching Assistant
- Detection and Estimation Theory (EEE 539)
  - 2013–2014 Fall : Teaching Assistant

REFEREE  
SERVICE

- *IEEE Transactions on Automatic Control*
- *Automatica*
- *IEEE Transactions on Communications*
- *IEEE Wireless Communications Letters*
- *Journal of Communications and Networks*
- *Signal, Image and Video Processing*
- *IEEE Control Systems Letters (L-CSS)*
- *The B.E. Journal of Theoretical Economics (BEJTE)*
- *IEEE Conference on Decision and Control (CDC)*
- *American Control Conference (ACC)*
- *IEEE International Symposium on Information Theory (ISIT)*
- *IFAC Symposium on Robust Control Design (ROCOND)*
- *Conference on Decision and Game Theory for Security (GameSec)*
- *SIAM Conference on Control and Its Applications*
- *IFAC Workshop on Distributed Estimation and Control in Networked Systems (NecSys)*
- *IEEE International Conference on Acoustics, Speech and Signal Processing (ICASSP)*
- *International Conference on Cyber-Physical Systems (ICCPS)*
- *International Conference on Applied Cryptography and Network Security (ACNS)*
- *International Conference on Control, Decision and Information Technologies (CoDIT)*
- *Signal Processing and Communication Application Conference (SIU)*