

## Prof. ELİF UYSAL

### Personal Information

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### International Researcher IDs

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### Education Information

Doctorate, Stanford University, Elektrik Muh Bil, United States Of America 1999 - 2003

### Foreign Languages

English, C1 Advanced

### Dissertations

Doctorate, Energy Efficient Wireless Communication, Stanford University, Elektrik Muh Bil, 2003

### Research Areas

Electrical and Electronics Engineering

### Academic Titles / Tasks

Professor, Middle East Technical University, Faculty of Engineering, Department of Electrical and Electronics Engineering, 2006 - Continues

### Academic and Administrative Experience

Deputy Director of the Center, Middle East Technical University, 2021 - Continues

### Advising Theses

Uysal E., Conceptual Design Of a Tunneling Relay For Low Power Wide Area Networks, Postgraduate, Ö.GENÇAY(Student), 2024

Uysal E., Age of information based flow control in communication networks, Doctorate, S.BAGHAEE(Student), 2023

Uysal E., Resource allocation in the finite blocklength regime in 5G, Postgraduate, Ö.TUĞBERK(Student), 2023

Ceran Arslan E. T., Uysal E., QUERY AGE OF INCORRECT INFORMATION IN MULTI-USER LINKS, Postgraduate, M.AYIK(Student), 2023

UYSAL E., Optimizing information freshness in random access channels, Postgraduate, O.TAHİR(Student), 2022

UYSAL E., Query age of information in communication networks, Postgraduate, M.EMRULLAH(Student), 2022

UYSAL E., Implementation and evaluation of age-aware downlink scheduling policies in communication networks, Postgraduate, T.KEREM(Student), 2021

UYSAL E., Timely communication for energy-efficiency, data freshness and tracking, Doctorate, B.TAN(Student), 2021

UYSAL E., Age-aware scheduling in communication networks, Postgraduate, H.Burhan(Student), 2020

UYSAL E., Improving data freshness in random access channels, Postgraduate, D.Can(Student), 2019

UYSAL BIYIKOĞLU E., Design and optimization of a rate adaptation algorithm for energy harvesting transmitters /, Postgraduate, C.EMRE(Student), 2014

UYSAL BIYIKOĞLU E., Dynamic allocation of renewable energy through a stochastic knapsack problem formulation for an access point on the move /, Postgraduate, E.TUĞÇE(Student), 2014

UYSAL BIYIKOĞLU E., Duty cycle optimization in energy harvesting sensor networks with application to bluetooth low energy /, Postgraduate, B.AKGÜN(Student), 2014

UYSAL BIYIKOĞLU E., Optimizing the service policy of a mobile service provider through competitive online solutions to the 0/1 knapsack problem with dynamic capacity /, Postgraduate, T.ERKILIÇ(Student), 2014

UYSAL BIYIKOĞLU E., Optimal transmission scheduling for energy harvesting systems and implementation of energy efficient scheduling algorithms on software defined radio /, Postgraduate, G.UÇTU(Student), 2014

UYSAL BIYIKOĞLU E., A low-complexity, near-optimal scheduling policy for solving a restless multi-armed bandit problem occurring in a single-hop wireless network, Postgraduate, Ö.MELİH(Student), 2014

UYSAL BIYIKOĞLU E., Optimization of feedback in a multiuser mimo communication downlink with energy harvesting users /, Postgraduate, M.SHAKIBA(Student), 2014

UYSAL BIYIKOĞLU E., Implementation of the HEED clustering protocol with sleep scheduling in TinyOS 2 on a wireless sensor network testbed, Postgraduate, C.ÖZKAN(Student), 2013

UYSAL BIYIKOĞLU E., Optimal and implementable transmission schemes for energy harvesting networks, Postgraduate, F.MEHMET(Student), 2012

UYSAL BIYIKOĞLU E., Efficient resource allocation in energy harvesting wireless networks, Doctorate, N.TEKBIYIK(Student), 2012

UYSAL BIYIKOĞLU E., Identification and localization on a wireless magnetic sensor network, Postgraduate, S.BAGHAEE(Student), 2012

UYSAL BIYIKOĞLU E., Optimization of energy harvesting wireless communication systems, Postgraduate, H.ERKAL(Student), 2011

UYSAL BIYIKOĞLU E., SWIM: A new multicast routing algorithm for wireless networks, Postgraduate, A.SİNAN(Student), 2011

UYSAL BIYIKOĞLU E., A study on certain theoretical and practical problems in wireless networks, Postgraduate, M.AKİF(Student), 2010

UYSAL BIYIKOĞLU E., Optimal resource allocation algorithms for efficient operation of wireless networks, Postgraduate, Ö.ÖZEL(Student), 2009

UYSAL BIYIKOĞLU E., YILMAZ A. Ö., Subcarrier allocation in OFDMA systems with time varying channel and packet arrivals, Postgraduate, E.TOKTAŞ(Student), 2008

UYSAL BIYIKOĞLU E., Energy-efficient routing to maximize network lifetime in wireless sensor networks, Postgraduate, A.ZENGİN(Student), 2007

## Jury Memberships

## Published journal articles indexed by SCI, SSCI, and AHCI

- I. **MiSTA: An Age-Optimized Slotted ALOHA Protocol**  
Ahmetoglu M., Yavascan O. T., Uysal E.  
IEEE INTERNET OF THINGS JOURNAL, vol.9, no.17, pp.15484-15496, 2022 (SCI-Expanded)
- II. **Semantic Communications in Networked Systems: A Data Significance Perspective**  
UYSAL E., KAYA O., Ephremides A., Gross J., Codreanu M., Popovski P., Assaad M., Liva G., Munari A., Soret B., et al.  
IEEE NETWORK, vol.36, no.4, pp.233-240, 2022 (SCI-Expanded)
- III. **Implementation and Evaluation of Age-Aware Downlink Scheduling Policies in Push-Based and Pull-Based Communication**  
Oğuz T. K., Ceran Arslan E. T., Uysal E., Girici T.  
Entropy, vol.24, no.5, 2022 (SCI-Expanded)
- IV. **Analysis of Slotted ALOHA With an Age Threshold**  
Yavascan O. T., UYSAL E.  
IEEE JOURNAL ON SELECTED AREAS IN COMMUNICATIONS, vol.39, no.5, pp.1456-1470, 2021 (SCI-Expanded)
- V. **Sampling of the Wiener Process for Remote Estimation Over a Channel With Random Delay**  
Sun Y., Polyanskiy Y., UYSAL E.  
IEEE TRANSACTIONS ON INFORMATION THEORY, vol.66, no.2, pp.1118-1135, 2020 (SCI-Expanded)
- VI. **Optimal Status Updating with a Finite-Battery Energy Harvesting Source**  
Bacinoglu B. T., Sun Y., UYSAL E., Mutlu V.  
JOURNAL OF COMMUNICATIONS AND NETWORKS, vol.21, no.3, pp.280-294, 2019 (SCI-Expanded)
- VII. **Implementation of Energy-Neutral Operation on Vibration Energy Harvesting WSN**  
Chamanian S., Baghaee S., Ulsan H., Zorlu O., UYSAL BIYIKOĞLU E., KÜLAH H.  
IEEE SENSORS JOURNAL, vol.19, no.8, pp.3092-3099, 2019 (SCI-Expanded)
- VIII. **Reliable Transmission of Short Packets Through Queues and Noisy Channels Under Latency and Peak-Age Violation Guarantees**  
Devassy R., Durisi G., Ferrante G. C., Simeone O., UYSAL BIYIKOĞLU E.  
IEEE JOURNAL ON SELECTED AREAS IN COMMUNICATIONS, vol.37, no.4, pp.721-734, 2019 (SCI-Expanded)
- IX. **Scheduling Policies for Minimizing Age of Information in Broadcast Wireless Networks**  
Kadota I., Sinha A., UYSAL BIYIKOĞLU E., Singh R., Modiano E.  
IEEE-ACM TRANSACTIONS ON NETWORKING, vol.26, no.6, pp.2637-2650, 2018 (SCI-Expanded)
- X. **Update or Wait: How to Keep Your Data Fresh**  
Sun Y., UYSAL BIYIKOĞLU E., Yates R. D., Koksall C. E., Shroff N. B.  
IEEE TRANSACTIONS ON INFORMATION THEORY, vol.63, no.11, pp.7492-7508, 2017 (SCI-Expanded)
- XI. **Finite-Horizon Energy-Efficient Scheduling With Energy Harvesting Transmitters Over Fading Channels**  
BACINOĞLU B. T., UYSAL BIYIKOĞLU E., Koksall C. E.  
IEEE TRANSACTIONS ON WIRELESS COMMUNICATIONS, vol.16, no.9, pp.6105-6118, 2017 (SCI-Expanded)
- XII. **Optimal energy allocation policies for a high altitude flying wireless access point**  
Ceran E. T., Erkilic T., UYSAL BIYIKOĞLU E., GİRİCİ T., Leblebicioglu K.  
TRANSACTIONS ON EMERGING TELECOMMUNICATIONS TECHNOLOGIES, vol.28, no.4, 2017 (SCI-Expanded)
- XIII. **Wearable battery-less wireless sensor network with electromagnetic energy harvesting system**  
Chamanian S., Ulsan H., Zorlu O., Baghaee S., UYSAL BIYIKOĞLU E., KÜLAH H.  
SENSORS AND ACTUATORS A-PHYSICAL, vol.249, pp.77-84, 2016 (SCI-Expanded)
- XIV. **Implementation of an Enhanced Target Localization and Identification Algorithm on a Magnetic WSN**  
Baghaee S., GÜRBÜZ S. Z., UYSAL BIYIKOĞLU E.  
IEICE TRANSACTIONS ON COMMUNICATIONS, no.10, pp.2022-2032, 2015 (SCI-Expanded)
- XV. **Powering-up Wireless Sensor Nodes Utilizing Rechargeable Batteries and an Electromagnetic**

### **Vibration Energy Harvesting System**

Chamanian S., Baghaee S., Ulsan H., Zorlu O., KÜLAH H., UYSAL BIYIKOĞLU E.  
ENERGIES, vol.7, no.10, pp.6323-6339, 2014 (SCI-Expanded)

- XVI. **Finite-Horizon Online Transmission Scheduling on an Energy Harvesting Communication Link with a Discrete Set of Rates**  
BACINOĞLU B. T., UYSAL BIYIKOĞLU E.  
JOURNAL OF COMMUNICATIONS AND NETWORKS, vol.16, no.3, pp.293-300, 2014 (SCI-Expanded)
- XVII. **Network-wide energy efficiency in wireless networks with multiple access points**  
Ozel O., UYSAL BIYIKOĞLU E.  
TRANSACTIONS ON EMERGING TELECOMMUNICATIONS TECHNOLOGIES, vol.24, no.6, pp.568-581, 2013 (SCI-Expanded)
- XVIII. **Optimal offline broadcast scheduling with an energy harvesting transmitter**  
Erkal H., Ozcelik F. M., UYSAL BIYIKOĞLU E.  
EURASIP JOURNAL ON WIRELESS COMMUNICATIONS AND NETWORKING, 2013 (SCI-Expanded)
- XIX. **Proportional Fair Resource Allocation on an Energy Harvesting Downlink**  
Tekbiyik N., GİRİCİ T., UYSAL BIYIKOĞLU E., Leblebicioglu K.  
IEEE TRANSACTIONS ON WIRELESS COMMUNICATIONS, vol.12, no.4, pp.1699-1711, 2013 (SCI-Expanded)
- XX. **Minimization of Transmission Duration of Data Packets over an Energy Harvesting Fading Channel**  
Ozcelik F. M., Uctu G., UYSAL BIYIKOĞLU E.  
IEEE COMMUNICATIONS LETTERS, vol.16, no.12, pp.1968-1971, 2012 (SCI-Expanded)
- XXI. **A Greedy Link Scheduler for Wireless Networks With Gaussian Multiple-Access and Broadcast Channels**  
Sridharan A., Koksall C. E., UYSAL BIYIKOĞLU E.  
IEEE-ACM TRANSACTIONS ON NETWORKING, vol.20, no.1, pp.100-113, 2012 (SCI-Expanded)
- XXII. **Energy efficient wireless unicast routing alternatives for machine-to-machine networks**  
Tekbiyik N., UYSAL BIYIKOĞLU E.  
JOURNAL OF NETWORK AND COMPUTER APPLICATIONS, vol.34, no.5, pp.1587-1614, 2011 (SCI-Expanded)
- XXIII. **Optimal Packet Scheduling on an Energy Harvesting Broadcast Link**  
Antepli M. A., UYSAL BIYIKOĞLU E., Erkal H.  
IEEE JOURNAL ON SELECTED AREAS IN COMMUNICATIONS, vol.29, no.8, pp.1721-1731, 2011 (SCI-Expanded)
- XXIV. **A Depth-optimal Low-complexity Distributed Wireless Multicast Algorithm**  
Akyurek A. S., UYSAL BIYIKOĞLU E.  
COMPUTER JOURNAL, vol.54, no.6, pp.988-1003, 2011 (SCI-Expanded)

### **Articles Published in Other Journals**

- I. **Pull or Wait: How to Optimize Query Age of Information**  
Ildiz M. E., Yavascan O. T., UYSAL E., Kartal O. T.  
IEEE Journal on Selected Areas in Information Theory, vol.4, pp.794-807, 2023 (Scopus)
- II. **Welcome Message from the WiOpt'21 TPC Chairs**  
Ghaderi J., Uysal E., Xue G.  
2021 19th International Symposium on Modeling and Optimization in Mobile, Ad Hoc, and Wireless Networks, WiOpt 2021, 2021 (Scopus)

### **Books & Book Chapters**

- I. **Age of Information in Practice**  
UYSAL E., KAYA O., Baghaee S., Beytur H. B.  
in: Age of Information Foundations and Applications, Pappas Nikolaos, Abd-Elmagid Mohamed A., Zhou Bo, Saad

## Refereed Congress / Symposium Publications in Proceedings

- I. **A3L-FEC-FSFB: Age-Aware Application Layer Forward Error Correction with Fixed Sampling Rate and Fixed Block-length**  
Baghaee S., UYSAL E.  
32nd IEEE Conference on Signal Processing and Communications Applications, SIU 2024, Mersin, Turkey, 15 - 18 May 2024
- II. **Goal-Oriented Communications for Remote Inference under Two-Way Delay with Memory**  
Ari C., Shisher M. K. C., UYSAL E., Sun Y.  
2024 IEEE International Symposium on Information Theory, ISIT 2024, Athens, Greece, 7 - 12 July 2024, pp.1179-1184
- III. **Implementation of an AoI-Aware Wi-Fi Network Bilgi Yaşına Duyarlı Wi-Fi Ağı Gerçekleşmesi**  
Balci A., Saatçi B., Atak E., UYSAL E.  
32nd IEEE Conference on Signal Processing and Communications Applications, SIU 2024, Mersin, Turkey, 15 - 18 May 2024
- IV. **Ensuring a Semantically Effective IoT Network Through Blockchain with Delayed Feedback**  
Gencay O., Balci A., CERAN ARSLAN E. T., UYSAL E.  
2024 International Conference on Computing, Networking and Communications, ICNC 2024, Hawaii, United States Of America, 19 - 22 February 2024, pp.88-92
- V. **DCCTA: Age of Information in Slotted ALOHA Under Duty Cycle Constraints**  
Yavascan O. T., Ahmetoglu M., UYSAL E., Gurbuz U., Gencay O., Balci A.  
2024 International Conference on Computing, Networking and Communications, ICNC 2024, Hawaii, United States Of America, 19 - 22 February 2024, pp.371-375
- VI. **MuMiSTA: An Age-Aware Reservation-Based Random Access Policy**  
Yavaşcan O. T., Ahmetoğlu M., UYSAL E.  
2023 21st International Symposium on Modeling and Optimization in Mobile, Ad Hoc, and Wireless Networks (WiOpt), Singapore, 24 August 2023
- VII. **Resource Allocation in the Finite Blocklength Regime Under PAoI and Delay Violation Constraints**  
Kartal Ö. T., KAYA O., UYSAL E.  
2023 21st International Symposium on Modeling and Optimization in Mobile, Ad Hoc, and Wireless Networks (WiOpt), Singapore, 24 August 2023
- VIII. **Optimization of AoII and QAOII in Multi-User Links**  
Ayik M., CERAN ARSLAN E. T., Uysal E.  
2023 IEEE INFOCOM Conference on Computer Communications Workshops, INFOCOM WKSHPS 2023, New Jersey, United States Of America, 20 May 2023
- IX. **Query Age of Information: Optimizing AoI at the Right Time**  
Ildiz M. E., Yavascan O. T., UYSAL E., Kartal O. T.  
2022 IEEE International Symposium on Information Theory, ISIT 2022, Espoo, Finland, 26 June - 01 July 2022, vol.2022-June, pp.144-149
- X. **Analysis of Threshold ALOHA in a Packet Erasure Channel Paket Silme Kanalında Yaş Eşikli ALOHA Analizi**  
Yavascan O. T., UYSAL E.  
30th Signal Processing and Communications Applications Conference, SIU 2022, Safranbolu, Turkey, 15 - 18 May 2022
- XI. **An Inequality for Query Age of Information and Age of Information Sorgu Ani Bilgi Yaşı (QAOI) ve Ortalama Bilgi Yaşı (AOI) Arasında bir Eşitsizlik**  
Ildiz M. E., Avsar S., UYSAL E.  
30th Signal Processing and Communications Applications Conference, SIU 2022, Safranbolu, Turkey, 15 - 18 May

2022

- XII. **When to Pull Data for Minimum Age Penalty**  
Yavascan O. T., CERAN ARSLAN E. T., Cakir Z., UYSAL E., Kaya O.  
19th International Symposium on Modeling and Optimization in Mobile, Ad hoc, and Wireless Networks, WiOpt 2021, Pennsylvania, United States Of America, 18 - 21 October 2021
- XIII. **Information Freshness in Random Access Channels for IoT Systems**  
Munari A., UYSAL E.  
4th International Balkan Conference on Communications and Networking, BalkanCom 2021, Novi-Sad, Serbia, 20 - 22 September 2021, pp.112-116
- XIV. **Evaluation of Age Control Protocol (ACP) and ACP+ on ESP32**  
Guloglu U., Baghaee S., UYSAL E.  
17th International Symposium on Wireless Communication Systems, ISWCS 2021, Berlin, Germany, 6 - 09 September 2021, vol.2021-September
- XV. **Implementation and Evaluation of Age-Aware Downlink Scheduling Policies**  
Oğuz T. K., UYSAL E., GİRİCİ T.  
IEEE International Black Sea Conference on Communications and Networking (BlackSeaCom), Bükreş, Romania, 24 - 28 May 2021
- XVI. **MiSTA: Threshold-ALOHA with Mini Slots**  
Ahmetoğlu M., Yavaşcan O. T., UYSAL E.  
IEEE International Black Sea Conference on Communications and Networking (BlackSeaCom), Romania, 24 - 28 May 2021
- XVII. **On the Trackability of Stochastic Processes Based on Causal Information**  
Bacinoglu B. T., Sun Y., UYSAL E.  
2020 IEEE International Symposium on Information Theory, ISIT 2020, California, United States Of America, 21 - 26 July 2020, pp.2228-2233
- XVIII. **Towards AoI-aware Smart IoT Systems**  
Beytur H. B., Baghaee S., UYSAL E.  
2020 International Conference on Computing, Networking and Communications, ICNC 2020, Hawaii, United States Of America, 17 - 20 February 2020, pp.353-357
- XIX. **Improving Age of Information in Random Access Channels**  
Atabay D. C., Uysal E., Kaya O.  
IEEE Conference on Computer Communications (IEEE INFOCOM), ELECTR NETWORK, 6 - 09 July 2020, pp.912-917
- XX. **Analysis of Age-Aware Slotted ALOHA**  
Yavascan O. T., UYSAL E.  
IEEE Global Communications Conference (GLOBECOM) on Advanced Technology for 5G Plus, ELECTR NETWORK, 7 - 11 December 2020
- XXI. **Peak-Age Violation Guarantees for the Transmission of Short Packets over Fading Channels**  
Ostman J., Devassy R., Durisi G., UYSAL E.  
IEEE INFOCOM 2019 - IEEE Conference on Computer Communications Workshops (INFOCOM WKSHPS), Paris, France, 29 April - 02 May 2019
- XXII. **Age Minimization of Multiple Flows using Reinforcement Learning**  
beytur h. b., UYSAL E.  
2019 International Conference on Computing, Networking and Communications (ICNC), Honolulu, HI, USA, 18 - 21 February 2019, no.1
- XXIII. **Measuring age of information on real-life connections**  
Beytur H. B., Baghaee S., UYSAL E.  
27th Signal Processing and Communications Applications Conference, SIU 2019, Sivas, Turkey, 24 - 26 April 2019
- XXIV. **Age-Optimal Channel Coding Blocklength for an M/G/1 Queue with HARQ**  
Sac H., Bacinoglu T., Uysal-Biyikoglu E., Durisi G.  
19th IEEE International Workshop on Signal Processing Advances in Wireless Communications, SPAWC 2018, Kalamata, Greece, 25 - 28 June 2018

- XXV. **Optimizing age of information on real-life TCP/IP connections through reinforcement learning**  
Sert E., Sonmez C., Baghaee S., Uysal-Biyikoglu E.  
26th IEEE Signal Processing and Communications Applications Conference, SIU 2018, İzmir, Turkey, 2 - 05 May 2018, pp.1-4
- XXVI. **Delay and Peak-Age Violation Probability in Short-Packet Transmissions**  
Devassy R., Durisi G., Ferrante G. C., Simeone O., UYSAL BIYIKOĞLU E.  
IEEE International Symposium on Information Theory (ISIT), Colorado, United States Of America, 17 - 22 June 2018, pp.2471-2475
- XXVII. **Achieving the Age-Energy Tradeoff with a Finite-Battery Energy Harvesting Source**  
BACINOĞLU B. T., Sun Y., UYSAL BIYIKOĞLU E., Mutlu V.  
IEEE International Symposium on Information Theory (ISIT), Colorado, United States Of America, 17 - 22 June 2018, pp.876-880
- XXVIII. **Minimizing Age of Information for Multiple Flows**  
Beytur H. B., UYSAL BIYIKOĞLU E.  
IEEE International Black Sea Conference on Communications and Networking (BlackSeaCom), Batumi, Georgia, 4 - 07 June 2018, pp.31-35
- XXIX. **Age-of-Information in Practice: Status Age Measured over TCP/IP Connections through WiFi, Ethernet and LTE**  
Sonmez C., Baghaee S., Ergisi A., UYSAL BIYIKOĞLU E.  
IEEE International Black Sea Conference on Communications and Networking (BlackSeaCom), Batumi, Georgia, 4 - 07 June 2018, pp.76-80
- XXX. **Age-Optimal Updates of Multiple Information Flows**  
Sun Y., UYSAL BIYIKOĞLU E., Kompella S.  
IEEE Conference on Computer Communications (IEEE INFOCOM), Hawaii, United States Of America, 15 - 19 April 2018, pp.136-141
- XXXI. **Energy Efficient Transmission Scheduling for Channel-adaptive Wireless Energy Transfer**  
BACINOĞLU B. T., Kaya O., UYSAL BIYIKOĞLU E.  
IEEE Wireless Communications and Networking Conference (WCNC), Barcelona, Spain, 15 - 18 April 2018
- XXXII. **Scheduling Status Updates from a Sensor to Minimize the Age of Information at the Destination**  
UYSAL BIYIKOĞLU E.  
Dagstuhl Workshop on Fundamentals of Wireless Networking, Saarbrücken, Germany, 2 - 07 July 2017
- XXXIII. **Scheduling Status Updates to Minimize Age of Information with an Energy Harvesting Sensor**  
BACINOĞLU B. T., UYSAL BIYIKOĞLU E.  
IEEE International Symposium on Information Theory (ISIT), Aachen, Germany, 25 - 30 June 2017, pp.1122-1126
- XXXIV. **Remote estimation of the Wiener process over a channel with random delay**  
Sun Y., Polyanskiy Y., UYSAL BIYIKOĞLU E.  
2017 IEEE International Symposium on Information Theory (ISIT), Aachen, Germany, Germany, 25 - 30 June 2017, pp.321-325
- XXXV. **Enerji hasatçı ve batarya kısıtlı bir sensör ile en taze veri güncellemelerinin gönderilmesi**  
BACINOĞLU B. T., UYSAL BIYIKOĞLU E.  
2017 25th Signal Processing and Communications Applications Conference (SIU), Antalya, Turkey, 15 - 18 May 2017
- XXXVI. **Age-Optimal Status Updating with an Energy Harvesting Sender**  
BACINOĞLU B. T., UYSAL BIYIKOĞLU E.  
Information Theory and Applications Workshop, San Diego, United States Of America, 11 - 15 February 2017
- XXXVII. **Minimizing the Age of Information in Broadcast Wireless Networks**  
Kadota I., UYSAL BIYIKOĞLU E., Singh R., Modiano E.  
54th Annual Allerton Conference on Communication, Control, and Computing (Allerton), Illinois, United States Of America, 27 - 30 September 2016, pp.844-851
- XXXVIII. **Age of information Controlling the freshness of status updates under energy constraints Keynote Talk**

UYSAL BIYIKOĞLU E.

30th International Symposium on Computer and Information Sciences, Londrina, Brazil, 23 - 25 September 2015

XXXIX. **Age of Information under Energy Replenishment Constraints**

BACINOĞLU B. T., Ceran E. T., UYSAL BIYIKOĞLU E.

Information Theory and Applications Workshop (ITA), California, United States Of America, 1 - 06 February 2015, pp.25-31

XL. **Finite Horizon Online Lazy Scheduling with Energy Harvesting Transmitters over Fading Channels**

BACINOĞLU B. T., UYSAL BIYIKOĞLU E.

IEEE International Symposium on Information Theory (ISIT), Hawaii, United States Of America, 29 June - 04 July 2014, pp.1176-1180

XLI. **Achieving Nearly 100% Throughput without Feedback in Energy Harvesting Wireless Networks**

GÜL Ö. M., UYSAL BIYIKOĞLU E.

IEEE International Symposium on Information Theory (ISIT), Hawaii, United States Of America, 29 June - 04 July 2014, pp.1171-1175

XLII. **Demonstration of Energy-Neutral Operation on a WSN Testbed Using Vibration Energy Harvesting**

Baghaee S., Uluşan H., Chamanian S., Zorlu Ö., Uysal Biyikoğlu E., Kūlah H.

20th European Wireless Conference, Barcelona, Spain, 14 - 16 May 2014, pp.1-4

XLIII. **Advertisement Scheduling in Bluetooth Low Energy Devices**

BACINOĞLU B. T., Ozcelik F. M., UYSAL BIYIKOĞLU E.

22nd IEEE Signal Processing and Communications Applications Conference (SIU), Trabzon, Turkey, 23 - 25 April 2014, pp.1575-1578

XLIV. **A Randomized Scheduling Algorithm for Energy Harvesting Wireless Sensor Networks Achieving Nearly 100% Throughput**

GÜL Ö. M., UYSAL BIYIKOĞLU E.

IEEE Wireless Communications and Networking Conference (WCNC), İstanbul, Turkey, 6 - 09 April 2014, pp.2456-2461

XLV. **Routing with Mutual Information Accumulation in Energy-Limited Wireless Networks**

Shakiba-Herfeh M., GİRİCİ T., UYSAL BIYIKOĞLU E.

24th Tyrrhenian International Workshop on Digital Communications - Green ICT (TIWDC), Genoa, Italy, 23 - 25 September 2013

XLVI. **Finite Horizon Online Packet Scheduling with Energy and Delay Constraints**

BACINOĞLU B. T., UYSAL BIYIKOĞLU E.

1st International Black Sea Conference on Communications and Networking (BlackSeaCom), Batumi, Georgia, 3 - 05 July 2013, pp.191-195

XLVII. **Application and Modeling of a Magnetic WSN for Target Localization**

Baghaee S., GÜRBÜZ S. Z., UYSAL BIYIKOĞLU E.

UKSim-AMSS 15th International Conference on Computer Modelling and Simulation (UKSim), Cambridge, Canada, 10 - 12 April 2013, pp.687-692

XLVIII. **Kalman Prediction Based Proportional Fair Resource Allocation for a Solar Powered Base Station**

Tekbiyik-Ersoy N., Uysal-Biyikoglu E., Leblebicioglu K., Girici T.

21st Signal Processing and Communications Applications Conference (SIU), CYPRUS, 24 - 26 April 2013

XLIX. **Optimal Offline Packet Scheduling on an Energy Harvesting Broadcast Link**

Ozcelik F. M., Erkal H., UYSAL BIYIKOĞLU E.

IEEE International Symposium on Information Theory (ISIT), St Petersburg, Russia, 31 July - 05 August 2011, pp.2886-2890

L. **Ferromagnetic Target Detection and Localization with a Wireless Sensor Network**

Antepli M. A., Gurbuz S. Z., UYSAL BIYIKOĞLU E.

MILCOM Military Communications Conference, San-Jose, Costa Rica, 31 October - 03 November 2010, pp.1068-1073

LI. **Buffer Sharing on an OFDMA Downlink**

GİRİCİ T., Ozel O., UYSAL BIYIKOĞLU E.



21st Annual IEEE International Symposium on Personal, Indoor and Mobile Radio Communications (PIMRC), İstanbul, Turkey, 26 - 30 September 2010, pp.1162-1167

**LII. A Greedy Link Scheduler for Wireless Networks with Gaussian Multiple Access and Broadcast Channels**

Sridharan A., Koksal C. E., UYSAL BIYIKOĞLU E.

Conference on IEEE INFOCOM, California, United States Of America, 15 - 19 March 2010

**LIII. Optimal Buffer Partitioning on a Multiuser Wireless Link**

Ozel O., UYSAL BIYIKOĞLU E., GİRİCİ T.

Information Theory and Applications Workshop (ITA), California, United States Of America, 31 January - 05 February 2010, pp.505-514

**LIV. A Power Control Game with Smooth Reduction of SINR Objectives**

Ozel O., UYSAL BIYIKOĞLU E.

47th Annual Allerton Conference on Communication, Control, and Computing, Illinois, United States Of America, 30 September - 02 October 2009, pp.1187-1188

**LV. Distributed Power Control Using Non-monotonic Reaction Curves**

Ozel O., UYSAL BIYIKOĞLU E.

International Conference on Game Theory for Networks, İstanbul, Turkey, 13 - 15 May 2009, pp.60-67

**LVI. Energy-efficient scheduling of packet transmissions over wireless networks**

Balaji P., UYSAL BIYIKOĞLU E., El Gamal A.

IEEE INFOCOM 2002: THE CONFERENCE ON COMPUTER COMMUNICATIONS, VOLS 1-3, PROCEEDINGS, New York, United States Of America, 23 - 27 June 2002, pp.1773-1782

## Supported Projects

BEKLİOĞLU M., JEPPESEN E., UYSAL E., ÖZKAN K., Project Supported by Higher Education Institutions, Mezokozm deney sistemleri için bütünlük otonom gözlem ağı oluşturulması, 2022 - Continues

UYSAL BIYIKOĞLU E., TUBITAK Project, Haberleşme Ağlarında Enerji Hasadı Yöntemi Kullanımının Eniyileme ve Gerçekleşmesi, 2012 - Continues

UYSAL E., HAREEDY A., Miramirkhani F., YAZAR A., Acartürk A., Erkün Osunluk A. H., KUYMULU M. B., Taşkın B., ULUSOY İ., FİLİZ N., et al., TUBITAK Project, Sustainable Urbanization with Innovative Technologies (SUIT) , 2022 - 2025

UYSAL E., TUBITAK Project, FRESHDATA: Redesigning Networking for Information Freshness, 2020 - 2022

UYSAL E., TUBITAK Project, Optimal Bilgi Yaşı İçin Veri Örneklemesi Ve Çizelgelemenin Kuramsal Sınırları, Algoritmalar Ve Deneysel Uygulamalar, 2018 - 2021

Akın T., Külah H., Uysal E., TUBITAK Project, ENERJİ VERİMLİ GİYİLEBİLİR SENSÖR UYGULAMALARI İÇİN ESNEK TABANLI/MİNYATÜR ENERJİ TOPLAYICILAR VE ULTRA-DÜŞÜK GÜÇ İLE ÇALIŞAN ARAYÜZ ELEKTRONİĞİ GELİŞTİRİLMESİ, 2017 - 2020

UYSAL E., TUBITAK Project, Enerji Verimli Kablosuz Ağ Tasarımı için Temel İlkeler ve Deneysel Uygulamalar, 2011 - 2014

UYSAL E., TUBITAK Project, Minimum Enerjili Yüksek Performanslı Kablosuz Haberleşme Ağı Tasarımı: Katmanlararası Optimizasyon Ve Algoritmalar, 2007 - 2010

## Patent

Uysal E., BİLGİ YAŞI EŞİKLİ KISA ZAMAN DİLİMLİ RASTGELE ERİŞİM PROTOKOLÜ Buluş Özeti: Buluş; yeni bir bağlantı katmanı protokolü ile ilgilidir., Patent, CHAPTER B Implementation of Operations; Transport, The Invention Registration Number: E-39616753-110-220255008 , Standard Registration, 2022

## Activities in Scientific Journals

IEEE/ACM TRANSACTIONS ON NETWORKING, Publication Committee Member, 2018 - 2022

## Tasks In Event Organizations

Uysal E., Workshop on Modeling and Optimization for Semantic Communications (MOSC), Scientific Congress, Singapore, Singapore, Ağustos 2023

Uysal E., 30. IEEE Sinyal İşleme ve İletişim Uygulamaları Kurultayı, Scientific Congress, Turkey, Mayıs 2022

Uysal E., IEEE WIOPT 2021, Scientific Congress, United States Of America, Ekim 2021

Uysal E., 29. IEEE Sinyal İşleme ve İletişim Uygulamaları Kurultayı, Scientific Congress, Turkey, Haziran 2021

Gençer N. G., Uysal Bıyıkoğlu E., GRAD STAR ver2.0, Workshop Organization, Ankara, Turkey, Ekim 2018

## Scientific Research / Working Group Memberships

Communication Networks Research Group, Middle East Technical University, Turkey, <https://cng-eee.metu.edu.tr/>, 2006

- Continues

## Metrics

Publication: 83

Citation (WoS): 2354

Citation (Scopus): 2518

H-Index (WoS): 21

H-Index (Scopus): 20

## Invited Talks

Building Bridges for Global Challenges, Workshop, Eureka, Turkey, June 2024

Wireless Networks at PIMRC 2023, Conference, IEEE, Canada, September 2023

The Use of Data Freshness and Semantic Metrics in 6G, Workshop, Texas A&M University at Qatar, Qatar, February 2023

6G Summit, Workshop, King Abdullah University of Science and Technology (KAUST), Saudi Arabia, January 2023

Minimizing Age of Information in the Finite Blocklength Regime, Conference, University Of California, San Diego, United States Of America, February 2019

## Awards

IEEE Fellow, Ieee, January 2022

Uysal E., Kaya O., Ankaralı M. M., 2024 - Eşik Üstü Ödülü, Tübitak, May 2020

Proje Performans Ödülü, Tübitak, January 2019

H2020 Eşik Üstü Ödülü, Tübitak, January 2019

## Entrepreneurship Activities

Limited, FRESHDATA , 04 May 2022, Owner

## Non Academic Experience

ODTÜ Prof Dr Mustafa Parlar Vakfi

METU

The Ohio State University

The Ohio State University

Massachusetts Institute of Technology

Stanford University

Massachusetts Institute of Technology