

## Prof. ERTAN ONUR

### Personal Information

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### Biography

Ertan Onur received the BSc degree in computer engineering from Ege University, Izmir, Turkey in 1997, and the MSc and PhD degrees in computer engineering from Bogazici University, Istanbul, Turkey in 2001 and 2007, respectively. After the BSc degree, he worked for LMS Durability Technologies GmbH, Kaiserslautern, Germany. During the MSc and PhD degrees, he worked as a project leader at Global Bilgi, Istanbul and as an R&D project manager at Argela Technologies, Istanbul. He developed and managed many commercial telecommunications applications, and has a patent. After obtaining his PhD degree, he worked as an assistant professor at Delft University of Technology, the Netherlands. From 2014 on, he is with Middle East Technical University, Turkey. He was the editor/convenor of the Personal Networks Group of Ecma International Standardization Body. Dr. Onur's research interests are in the area of computer and wireless networks and their security. He is the founder of the Wireless systems, Networks and Cybersecurity Laboratory (WINS Lab). He is a member of IEEE.

### Education Information

Doctorate, Boğaziçi Üniversitesi, Mühendislik Fakültesi, Bilgisayar Mühendisliği Bölümü, Turkey 2001 - 2007

Post Graduate, Boğaziçi Üniversitesi, Mühendislik Fakültesi, Bilgisayar Mühendisliği Bölümü, Turkey 1998 - 2001

Under Graduate, Ege Üniversitesi, Mühendislik Fakültesi, Bilgisayar Mühendisliği Bölümü, Turkey 1993 - 2001

### Dissertations

Doctorate, Deployment quality measures in surveillance wireless sensor networks, Boğaziçi Üniversitesi, 2007

Post Graduate, Measurement based replanning of cell capacities in cellular wireless networks, Boğaziçi Üniversitesi, 2001

### Research Areas

Computer Sciences, Information Security and Reliability, Computer Networks, Engineering and Technology

### Academic Titles / Tasks

Professor, Middle East Technical University, Faculty Of Engineering, Department Of Computer Engineering, 2020 - Continues

Associate Professor, Middle East Technical University, Faculty Of Engineering, Department Of Computer Engineering,

2018 - 2020

Assistant Professor, Middle East Technical University, Faculty of Engineering, Department of Computer Engineering,  
2014 - 2018

Assistant Professor, Technische Universiteit Delft, Eemcs, Telekommunikasyon, 2009 - 2013

## Courses

NETWORK SECURITY, Post Graduate, 2016 - 2017

WIRELESS COMMUNICATION AND NETWORKS, Post Graduate, 2016 - 2017

DATA COMMUNICATIONS AND NETWORKING, Under Graduate, 2016 - 2017

## Advising Theses

Onur E., A Density-Aware, Energy- and Spectrum-Efficient Scheduling Model for Dynamic networks, Doctorate, S.MOLLAHASANI(Student), 2019

ONUR E., Control and user plane separation in ad-hoc networks, Post Graduate, D.ERGENÇ(Student), 2018

ONUR E., Bio-inspired solutions for bandwidth packing, Post Graduate, T.KORUK(Student), 2018

ONUR E., Joint optimization of cell zooming, scheduling and user association, Post Graduate, M.ÇALIK(Student), 2018

ONUR E., Semantic prefetching and caching in 5G, Post Graduate, C.MEHTEROĞLU(Student), 2017

ONUR E., Revisiting Shamir's no-key protocol: A lightweight key transport protocol, Post Graduate, A.KILIÇ(Student), 2017

ONUR E., Design and implementation of a smart greenhouse, Post Graduate, A.ŞİMŞEK(Student), 2017

ONUR E., Autonomous Cooperation in the Internet of Things, Doctorate, Y.Durmus(Student), 2015

OĞUZTÜZÜN M. H. S. , ONUR E., Density estimation in large-scale wireless sensor networks, Post Graduate, A.EROĞLU(Student), 2015

ONUR E., Home Networking at 60 GHz, Doctorate, Z.Genç(Student), 2014

ONUR E., Mitigation techniques for the energy hole problem in wireless sensor networks, Post Graduate, I.BOJAXHIU(Student), 2009

## Articles Published in Journals That Entered SCI, SSCI and AHCI Indexes

- **Density-aware mobile networks: Opportunities and challenges**  
Mollahasani S., Eroğlu A., Demirkol I., Onur E.  
COMPUTER NETWORKS, vol.175, 2020 (Journal Indexed in SCI)
- **Density-aware cellular coverage control: Interference-based density estimation**  
Eroğlu A., Yaman O., Onur E.  
Computer Networks, vol.165, 2019 (Journal Indexed in SCI)
- **Dependability-based clustering in mobile ad-hoc networks**  
Ergenç D., Eksert L., Onur E.  
Ad Hoc Networks, vol.93, 2019 (Journal Indexed in SCI)
- **Density-Aware, Energy- and Spectrum-Efficient Small Cell Scheduling**  
Mollahasani S., Onur E.  
IEEE ACCESS, vol.7, pp.65852-65869, 2019 (Journal Indexed in SCI)
- **Service Knowledge Discovery in Smart Machine Networks**  
DURMUŞ Y., ONUR E.  
WIRELESS PERSONAL COMMUNICATIONS, vol.81, pp.1455-1480, 2015 (Journal Indexed in SCI)
- **Fairness in Wireless Networks: Issues, Measures and Challenges**  
Shi H., Prasad R. V. , Onur E., Niemegeers I. G. M. M.

- IEEE COMMUNICATIONS SURVEYS AND TUTORIALS, vol.16, pp.5-24, 2014 (Journal Indexed in SCI)  
**An Investigation of Link Quality Assessment for Mobile Multi-hop and Multi-rate Wireless Networks**  
Zhou J., Jacobsson M., Onur E., Niemegeers I.
- WIRELESS PERSONAL COMMUNICATIONS, vol.65, pp.405-423, 2012 (Journal Indexed in SCI)  
**60 GHz PHY Performance Evaluation with 3D Ray Tracing under Human Shadowing**  
Genc Z., Wim Van Thillo W. V. T., Bourdoux A., ONUR E.
- IEEE WIRELESS COMMUNICATIONS LETTERS, vol.1, pp.117-120, 2012 (Journal Indexed in SCI)  
**Cooperative Density Estimation in Random Wireless Ad Hoc Networks**  
Onur E., Durmus Y., Niemegeers I.
- IEEE COMMUNICATIONS LETTERS, vol.16, pp.331-333, 2012 (Journal Indexed in SCI)  
**Lifetime extension for surveillance wireless sensor networks with intelligent redeployment**  
Kosar R., Bojaxhiu I., Onur E., Ersoy C.
- JOURNAL OF NETWORK AND COMPUTER APPLICATIONS, vol.34, pp.1784-1793, 2011 (Journal Indexed in SCI)  
**Energy-aware routing algorithms for wireless ad hoc networks with heterogeneous power supplies**  
Vazifehdan J., Prasad R. V., Onur E., Niemegeers I.
- COMPUTER NETWORKS, vol.55, pp.3256-3274, 2011 (Journal Indexed in SCI)  
**Collaborative and Cognitive Network Platforms: Vision and Research Challenges**  
Onur E., Durmus Y., Hawas M. G., de Groot S. M. H., Niemegeers I. G. M. M.
- WIRELESS PERSONAL COMMUNICATIONS, vol.58, pp.71-93, 2011 (Journal Indexed in SCI)  
**Sector Scanning Attempts for Non-Isolation in Directional 60 GHz Networks**  
Olcer G. M., Genc Z., Onur E.
- IEEE COMMUNICATIONS LETTERS, vol.14, pp.845-847, 2010 (Journal Indexed in SCI)  
**Cooperative Communications in Future Home Networks**  
Genc Z., Rizvi U. H., Onur E., Niemegeers I.
- WIRELESS PERSONAL COMMUNICATIONS, vol.53, pp.349-364, 2010 (Journal Indexed in SCI)  
**Users, Economics, Technology: Unavoidable Interdynamics**  
Aguiar R. L., Onur E., Skouby K. E., Carmen Aguayo-Torres M., Toftegaard T. S.
- WIRELESS PERSONAL COMMUNICATIONS, vol.53, pp.437-442, 2010 (Journal Indexed in SCI)  
**Surveillance with wireless sensor networks in obstruction: Breach paths as watershed contours**  
Onur E., Ersoy C., Delic H., Akarun L.
- COMPUTER NETWORKS, vol.54, pp.428-441, 2010 (Journal Indexed in SCI)  
**WAKE-UP RECEIVERS FOR WIRELESS SENSOR NETWORKS: BENEFITS AND CHALLENGES**  
Demirkol I., Ersoy C., Onur E.
- IEEE WIRELESS COMMUNICATIONS, vol.16, pp.88-96, 2009 (Journal Indexed in SCI)  
**Surveillance wireless sensor networks: Deployment quality analysis**  
Onur E., Ersoy C., Delic H., Akarun L.
- IEEE NETWORK, vol.21, pp.48-53, 2007 (Journal Indexed in SCI)  
**Analysis of target detection probability in randomly deployed sensor networks**  
Onur E., Ersoy C., Delic H.
- IEEE COMMUNICATIONS LETTERS, vol.11, pp.778-780, 2007 (Journal Indexed in SCI)  
**How many sensors for an acceptable breach detection probability?**  
Onur E., Ersoy C., Delic H.
- COMPUTER COMMUNICATIONS, vol.29, pp.173-182, 2006 (Journal Indexed in SCI)  
**Finding breach paths using the watershed segmentation algorithm in surveillance wireless sensor networks**  
Onur E., Ersoy C., Delic H., Akarun L.
- COMPUTER AND INFORMATION SCIENCES - ISCIS 2004, PROCEEDINGS, vol.3280, pp.363-372, 2004 (Journal Indexed in SCI)  
**Measurement-based replanning of cell capacities in GSM networks**  
Onur E., Delic H., Ersoy C., Çağlayan M. U.
- Computer Networks, vol.39, pp.749-767, 2002 (Journal Indexed in SCI)

## Articles Published in Other Journals

- **Quality of deployment in surveillance wireless sensor networks**  
Onur E., Ersoy C., Deliç H.  
International Journal of Wireless Information Networks, vol.12, pp.61-67, 2005 (Journal Indexed in ESCI)

## Books & Book Chapters

- **Software-Defined Network Security**  
Demirpolat A., Ergenç D., Öztürk E., Ayar Y., Onur E.  
in: Enabling Technologies and Architectures for Next-Generation Networking Capabilities, Mahmoud Elkhodr, Editor, IGI GLOBAL, New-York, pp.232-253, 2018
- **Runtime Adaptability of Ambient Intelligence Systems Based on Component-Oriented Approach**  
KAYA M. Ç., EROĞLU A., KARAMANLIOĞLU A., ONUR E., TEKİNERDOĞAN B., DOĞRU A. H.  
in: Guide to Ambient Intelligence in the IoT Environment, Mahmood, Zaigham, Editor, SPRINGER, pp.69-92, 2018
- **Lightweight Cryptography in 5G Machine-type Communication**  
Yildiz H., Kiliç A., Onur E.  
in: Networks of the Future: Architectures, Technologies, and Implementations, Mahmoud Elkhodr, Qusay F. Hassan, Seyed Shahrestani, Editor, CRC, New York, Florida, pp.127-144, 2017
- **Simulators, Test Beds and Prototypes of 5G mobile Networking Architectures**  
MOLLAHASANI S., EROĞLU A., YAMAÇ Ö., ONUR E.  
in: Networks of the Future: Architectures, Technologies, and Implementations, Mahmoud Elkhodr, Qusay F. Hassan, Seyed Shahrestani, Editor, CRC Press, Florida, pp.185-200, 2017

## Refereed Congress / Symposium Publications in Proceedings

- **DroPPPP: A P4 Approach to Mitigating DoS Attacks in SDN**  
Simsek G., BOSTAN H., Sarica A. K., Sarikaya E., KELEŞ A., ANGIN P., ALEMDAR H., ONUR E.  
20th World Conference on Information Security Applications, WISA 2019, Jeju Island, South Korea, 21 - 24 August 2019, pp.55-66
- **Multi-Connectivity Enabled User Association**  
Simsek G., Alemdar H., Onur E.  
30th IEEE Annual International Symposium on Personal, Indoor and Mobile Radio Communications, PIMRC 2019, İstanbul, Turkey, 8 - 11 September 2019
- **Poster Abstract: iSDR: SDR-in-the-loop Simulation**  
Ergenç D., Onur E.  
IEEE Conference on Computer Communications (IEEE INFOCOM), Paris, France, 29 April - 02 May 2019, pp.1037-1038
- **Yoğunluk Uyarlı Gelecek Nesil Ağlarda Fırsatlar ve Zorluklar**  
EROĞLU A., ONUR E.  
TBD 35. Ulusal Bilisim Kurultayı - TBD 35th National Informatics Congress, Ankara, Turkey, 21 November 2018, pp.124-130
- **Cross-layer Stack Design Framework in OMNeT**  
ERGENÇ D., ONUR E.  
Proceedings of the 5th International OMNeT Community Summit, Pisa, Italy, 5 - 07 September 2018
- **Density-Aware Probabilistic Clustering in Ad Hoc Networks**  
Ergenç D., Eksert L., Onur E.  
2018 IEEE International Black Sea Conference on Communications and Networking, BlackSeaCom 2018, Batumi, Georgia, 4 - 07 June 2018

- **A software-defined network based lightweight cluster** Yazilim-tanimli ağ destekli hafif siklet bir küme  
KARA C., ONUR E.  
26th IEEE Signal Processing and Communications Applications Conference, SIU 2018, İzmir, Turkey, 2 - 05 May 2018, pp.1-4
- **Density-aware power allocation in mobile networks using edge computing**  
MOLLAHASANI S., ONUR E.  
26th IEEE Signal Processing and Communications Applications Conference, SIU 2018, İzmir, Turkey, 2 - 05 May 2018, pp.1-4
- **Density-aware Joint Optimization of Cell Scheduling and User Association**  
ÇALIK M., MOLLAHASANI S., ONUR E.  
IEEE WCNC FLEXNETS 2018, Barseelona, Spain, 15 April 2018
- **Revisiting Shamir's no-key protocol: Lightweight key transport**  
KILIÇ A., ONUR E., Onur C. B.  
15th IEEE International Conference on Dependable, Autonomic and Secure Computing, 2017 IEEE 15th International Conference on Pervasive Intelligence and Computing, 2017 IEEE 3rd International Conference on Big Data Intelligence and Computing and 2017 IEEE Cyber Science and Technology Congress, DASC-PICom-DataCom-CyberSciTec 2017, Florida, United States Of America, 6 - 11 November 2017, pp.573-580
- **Density-aware outage in clustered Ad Hoc networks**  
EROĞLU A., ONUR E., Turan M.  
9th IFIP International Conference on New Technologies, Mobility and Security, NTMS 2018, Paris, France, 26 - 28 February 2018, pp.1-5
- **Density-aware cell zooming**  
YAMAN O., EROĞLU A., ONUR E.  
21st International Conference on Innovation in Clouds, Internet and Networks, ICIN 2018, Paris, France, 19 - 22 February 2018, pp.1-8
- **A Software-defined Network Based Lightweight Cluster**  
Kara C., ONUR E.  
26th IEEE Signal Processing and Communications Applications Conference (SIU), İzmir, Turkey, 2 - 05 May 2018
- **Bio-inspired bandwidth packing**  
KORUK T., ONUR E.  
14th IEEE Annual Consumer Communications and Networking Conference, CCNC 2017, Nevada, United States Of America, 8 - 11 January 2017, pp.1-4
- **Semantic Edge Caching and Prefetching in 5G**  
MEHTEROĞLU C., DURMUŞ Y., ONUR E.  
14th IEEE Annual Consumer Communications and Networking Conference (CCNC), Nevada, United States Of America, 8 - 11 January 2017, pp.692-695
- **Evaluation of Terahertz Channel in Data Centers**  
MOLLAHASANI S., ONUR E.  
IEEE/IFIP Network Operations and Management Symposium (NOMS), İstanbul, Turkey, 25 - 29 April 2016, pp.727-730
- **Security Attacks and Countermeasures in Surveillance Wireless Sensor Networks**  
Sert S. A. , Onur E., Yazici A.  
9th International Conference of Information and Communiation Technologies (AICT), Rostov-on-Don, Russia, 14 - 16 October 2015, pp.201-205
- **Estimating Density of Wireless Networks in Practice**  
Eroglu A., Onur E., Oguztuzun H.  
26th IEEE Annual International Symposium on Personal, Indoor, and Mobile Radio Communications (PIMRC), Hong Kong, PEOPLES R CHINA, 30 August - 02 September 2015, pp.1476-1480
- **Sybil-Resistant Meta Strategies for the Forwarder's Dilemma**  
Durmus Y., Loukas A., Langendoen K., ONUR E.

8th IEEE International Conference on Self-Adaptive and Self-Organizing Systems (SASO), London, Canada, 8 - 12 September 2014, pp.90-99

● **Realistic Simulation of IEEE 802.11p Channel in Mobile Vehicle to Vehicle Communication**

Islam T., Hu Y., Onur E., Boltjes B., De Jongh J. F. C. M.

13th Conference on Microwave Techniques (COMITE), Pardubice, Czech Republic, 17 - 18 April 2013, pp.156-161

● **Event-driven MAC Protocol For Dual-Radio Cooperation**

Khatibi A., Durmus Y., Onur E., Niemegeers I.

76th IEEE Vehicular Technology Conference (VTC Fall), Quebec City, Canada, 3 - 06 September 2012

● **Imitation as the Simplest Strategy for Cooperation**

Durmus Y., Onur E.

IEEE 23rd International Symposium on Personal, Indoor and Mobile Radio Communications (PIMRC), Sydney, Australia, 9 - 12 September 2012, pp.863-869

● **Smart Neighbor Scanning with Directional Antennas in 60 GHz Indoor Networks**

Olcer G. M., Genc Z., Onur E.

21st Annual IEEE International Symposium on Personal, Indoor and Mobile Radio Communications (PIMRC), İstanbul, Turkey, 26 - 30 September 2010, pp.2393-2398

● **On the Smoothing Factor for Rate Adaptation in IEEE 802.11b/g Mobile Multi-Hop Networks**

Zhou J., Onur E., Jacobsson M., Niemegeers I.

IEEE 17th Signal Processing and Communications Applications Conference, Antalya, Turkey, 9 - 11 April 2009, pp.487-490

● **Intelligent end-to-end resource virtualization using Service Oriented Architecture**

Onur E., Sfakianakis E., Papagianni C., Karagiannis G., Kontos T., Niemegeers I., Chochliouros I. P., de Groot S. H., Sjodin P., Hidell M., et al.

IEEE Globecom Workshops (Gc Workshops 2009), Hawaii, United States Of America, 30 November - 04 December 2009, pp.345-346

● **A Novel Link Quality Assessment Method for Mobile Multi-Rate Multi-Hop Wireless Networks**

Zhou J., Jacobsson M., Onur E., Niemegeers I.

6th IEEE Consumer Communications and Networking Conference, Nevada, United States Of America, 11 - 13 January 2009, pp.936-940

● **Temporal resilience of deployment quality in surveillance wireless sensor networks**

Onur E., Ersoy C., Delic H.

IEEE Wireless Communications and Networking Conference, Nevada, United States Of America, 31 March - 03 April 2008, pp.3291-3292

● **Wireless sensor networks for security: Issues and challenges**

Onel T., Onur E., Ersoy C., Delic H.

Conference of the NATO Advanced-Study-Institute on Advances in Sensing with Security Applications, Il Ciocco, Italy, 01 July 2005, vol.2, pp.95-99

● **Coverage in Sensor Networks When Obstacles Are Present**

Onur E., Ersoy C., Delic H., Akarun L.

IEEE International Conference on Communications (ICC 2006), İstanbul, Turkey, 11 - 15 June 2006, pp.4077-4082

● **On the quality of deployment in wireless sensor networks**

Onur E., Ersoy C., Delic H.

8th International Conference on Telecommunications (ConTEL 2005), Zagreb, Croatia, 15 - 17 June 2005, pp.547-551

● **Finding sensing coverage and breach paths in surveillance wireless sensor networks**

ONUR E., Ersoy C., Delic H.

15th IEEE International Symposium on Personal, Indoor, Mobile, Radio Communications (PIMRC 2004), Barcelona, Spain, 5 - 08 September 2004, pp.984-988

● **Finding sensing coverage and breach paths in wireless sensor networks**

Onur E., Ersoy C., Delic H.

IEEE 12th Signal Processing and Communications Applications Conference, Kusadasi, Turkey, 28 - 30 April 2004,

pp.692-695

**Measurement-based replanning of GSM cell capacities considering retrials, redials and hand-offs**

Onur E., Delic H., Ersoy C., Caglayan M.

IEEE International Conference on Communications, New York, United States Of America, 28 April - 02 May 2002,

pp.3361-3365

**On the retrial and redial phenomena in GSM networks**

Onur E., Delic H., Ersoy C., Caglayan M.

IEEE Wireless Communications and Networking Conference, Illinois, United States Of America, 23 - 28 September

2000, pp.885-889

## Supported Projects

Onur E., Project Supported by Other Private Institutions, 5G Radyo Kaynak Atama Stratejileri, 2019 - 2019

Onur E., Project Supported by Other Private Institutions, Mobil Haberleşme Hücresel Ağ Bileşenleri Geliştirilmesi, 2018 - 2019

ONUR E., Project Supported by Higher Education Institutions, Heterojen Nesnelere İnternet'i için Uygulama Geliştirme Platformu, 2014 - 2019

Onur E., Project Supported by Other Official Institutions, Farklı Güvenlik Seviyesine Sahip Ağlar Arasında Güvenli Veri Akışı, 2018 - 2018

Onur E., Project Supported by Other Official Institutions, GENİŞ BANT DALGAŞEKLİ İÇİN KATMANLAR ARASI ENİYİLEME TEMELLİ ÖBEKLEME PROJESİ, 2017 - 2018

Onur E., TUBITAK Project, Density-adaptive Wireless Networks, 2016 - 2018

ONUR E., TUBITAK Project, 115C064 Bilici Makine Olarak İnternet İnternet as the Oracle, 2015 - 2017

## Tasks In Event Organizations

Onur E., Workshop on Flexible and Agile Networks: 5G and Beyond (FlexNets) , Workshop Organization, Paris, France, Nisan 2019

Akar G., Gökler M. İ. , Ertekin Boelli Ş., Eren P. E. , Erkmen A. M. , Gürel S., Onur E., Erdil E., Özgüt A., Koçyiğit A., et al., International Conference & Exhibition on DIGITAL TRANSFORMATION & SMART SYSTEMS, Scientific Congress, Ankara, Turkey, Ekim 2018

Onur E., THE SECOND WORKSHOP ON FLEXIBLE AND AGILE NETWORKS (FLEXNETS), Workshop Organization, Barcelona, Spain, Nisan 2018

## Scientific Research / Working Group Memberships

Wireless Systems, Networks And Cybersecurity (Wins) Lab, Middle East Technical University, Turkey,

<https://wins.ceng.metu.edu.tr>, 2016 - Continues

## Mobility Activity

Research Scholarship Program, Scientific Research, State University of New York at Stony Brook, United States Of America, 2020 - 2020

## Citations

Total Citations (WOS):532

h-index (WOS):10

## **Scholarships**

2219, TUBITAK, 2020 - Continues

Visiting Scholar Program, Fulbright Program, 2019 - 2020