DR. ÖZGÜR ERGÜL

Assistant Professor

Department of Electronic and Communication Engineering

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RESEARCH INTERESTS

Wireless Sensor Networks, Cognitive Radio Networks, 5G Mobile Networks, Internet of Things, Visible Light Communications, Vehicular Communications

TEACHING INTERESTS

Communication Theory, Telecommunications, Communication Networks,Wireless Communications, Information Theory, Signal Processing, Circuit Theory, Probability Theory, Logic Design

EDUCATION

2015 **Koç University, İstanbul**
Ph.D. in Electrical & Electronics Engineering
Thesis: Cognitive Communication Techniques for Next-generation Heterogeneous Networks
Advisor: *Dr. Özgür Barış Akan*

2006 **Middle East Technical University, Ankara**
MS. in Electrical & Electronics Engineering
Thesis: A Wavelength-selectable WDM Source Using a Fiber Sagnac Loop Filter
Advisor: *Dr. Rüyal Ergül*

1999 **Hacettepe University, Ankara**
BS. in Electrical & Electronics Engineering

WORK EXPERIENCE

2018– **Assistant Professor, Çankaya University, Ankara**
Department of Electronic & Communication Engineering,

2015–2016 **Research Assistant Professor, Koç University, İstanbul**
Next-generation & Wireless Communications Laboratory,
Department of Electrical & Electronics Engineering,

2010–2015 **Research and Teaching Assistant, Koç University, İstanbul**
Next-generation & Wireless Communications Laboratory,
Department of Electrical & Electronics Engineering,

2004–2010 **Research and Teaching Assistant, Middle East Technical University, Ankara**
Next-generation & Wireless Communications Laboratory,

Department of Electrical & Electronics Engineering,

2000–2002 **Network Security Analyst, Havelsan A.Ş., Ankara**
"Land Registry and Cadastre Information System (TAKBIS)", "National Justice Network (UYAP)", "Turkish Armed Forces General Staff Internet Security" Projects,
Network security of the Internet-connected system

1997–2000 **Software Engineer, Havelsan A.Ş., Ankara**
National Firewall Project,
Network driver, script generator and compiler modules

PUBLICATIONS

Book Chapters

1. O. Ergul, O. Cetinkaya, O. B. Akan, *"Cognitive Radio Sensor Networks in Smart Grid,"* to appear in **Smart Grid: Networking, Data Management, and Business Models**, Edited by H. T. Mouftah, M-E. Kantarci, CRC Press, 2015.

2. O. Ergul, O. B. Akan, *"Routing in Cognitive Vehicular Networks,"* to appear in **Cognitive Vehicular Networks**, Edited by A. M. Vegni, D. P. Agrawal, CRC Press, 2015.

Journal Papers

1. A. O. Bicen, O. Ergul, O. B. Akan, *"Spectrum-Aware and Energy-Adaptive Reliable Transport for Internet of Sensing Things,"* **IEEE Transactions on Vehicular Technology,** vol. 67, no. 3, pp. 2359-2366, March 2018.

2. O. Ergul, A. O. Bicen, O. B. Akan, *"Opportunistic Reliability for Sensor Actor Networks in Smart Grid,"* **Ad hoc Networks Journal (Elsevier)**, vol. 41, pp. 5-14, May 2016.

3. O. Ergul, G. A. Shah, B. Canberk, O. B. Akan, *"Adaptive and Cognitive Communication Architecture for Next-generation PPDR Systems,"* **IEEE Communications Magazine**, vol. 54, no. 4, pp. 92-100, April 2016

4. O. Ergul, F. Alagoz, O. B. Akan, *"Throughput Maximization in Cognitive Electromagnetic Energy Harvesting Wireless Networks,"* **International Journal of Communication Systems (Wiley),** vol. 29, no. 7, pp. 1305-1322, May 2016.

5. O. Ergul, E. Dinc, O. B. Akan, *"Communicate to Illuminate: State-of-the-art and Research Challenges for Visible Light Communications,"* **Physical Communication Journal (Elsevier),** vol 17, pp. 72-85, December 2015.

6. O. B. Akan, O. B. Karli, O. Ergul, *"Cognitive Radio Sensor Networks,"* **IEEE Network**, vol. 23, no. 4, pp. 34-40, July 2009.

Conference Papers

1. E. Dinc, O. Ergul, O. B. Akan, *"Soft Handover in OFDMA based Visible Light Communication Networks,"* in **Proceedings of IEEE VTC Fall 2015**, pp. 1-5, Boston, USA, September 2015.

2. O. Ergul, O. B. Akan, *"Cooperative Coarse Spectrum Sensing for Cognitive Radio Sensor Networks,"* in **Proceedings of IEEE WCNC 2014,** pp. 2055-2060, Istanbul, Turkey, April 2014.

3. O. Ergul, O. Yilmaz, A. T. Koc, O. B. Akan, *"DRX and QoS-aware Energy-efficient Uplink Scheduling for Long Term Evolution,"* in **Proceedings of IEEE GLOBECOM 2013,** pp. 4644-4649, Atlanta, USA, December 2013.

4. O. Ergul, O. B. Akan, *"Energy-efficient Cooperative Spectrum Sensing for Cognitive Radio Sensor Networks,"* in **Proceedings of IEEE ISCC 2013,** pp. 465-469, Split, Croatia, July 2013.

RESEARCH PROJECTS

Participated in

MINERVA: Communication Theoretical Foundations of Nervous System Towards Bio-Inspired Nanonetworks and ICT-Inspired Neuro-Treatment (European Research Council) : Worked as a post doctoral researcher on modelling the nervous molecular communication channels.

Terahertz Femtocell for 5G Mobile Networks (TUBITAK) : Worked as a postdoctoral researcher on coding schemes for Terahertz communications.

Cognitive Radio Sensor Networks (TUBITAK) : Developed various cooperative spectrum sensing schemes and throughput maximization methods with energy harvesting sensor nodes.

Energy Efficient Scheduling for LTE (INTEL) : Developed a quality-of-service (QoS) aware and energy efficient uplink scheduling method for Long Term Evolution (LTE) networks.

Green Visible Light Communications (Turk Telekom) : Developed various soft handover schemes for visible light networks.

Network Centric Warfare (Turkish Armed Forces) : Worked on network security related issues, topology related issues, determination of hardware requirements and designing test case scenarios.

Contributed to Proposal

SUDAS: Shared User equipment-side Distributed Antenna System - submitted to European Union

FRIEND: Flexible social aRchItecturE for greeN Distributed networks - submitted to European Union

MINOTAURUS: MultIbaNd wireless lOcal area neTworks ArchitectUre for veRy high throUghput Services - submitted to European Union

Teaching Experience

Instructor for

Introduction to Telecommunication Networks (78 students), Digital Design II (61 students), Microprocessors (90 Students), Electronics II (81 students), Telecommunications Networks (44 students), Detection Estimation and Modulation Theory (43 students), Statistics and Probability for Engineers (75 students), Probability and Random Variables for Engineers (30 students), Wireless Sensor Networks (12 students), Cognitive Radio Networks (10 Students).

Assistant for

Circuit Theory (100 students), Signals and Systems (120 students), Telecommunications (30 Students), Wireless Communications (20 students), Computer Networks (50 students), Information Theory (20 students), Probability and Random Processes (50 students), Optical Communication Systems (20 students)

Reviewer For

Journals

IEEE Journal on Selected Areas in Communications, IEEE Transactions on Wireless Communications, IEEE Transactions on Vehicular Technology, IEEE Communications Letters, IEEE Sensors Journal, Elsevier Ad Hoc Networks, Elsevier Computer Networks, International Journal of Communication Systems, IET Communications, EURASIP Journal on Wireless Communications and Networking, etc.

Conferences

IEEE INFOCOM, IEEE Global Communications Conference (GLOBECOM), IEEE International Conference on Communications (ICC), IEEE Wireless Communications and Networking Conference (WCNC), International Conference on Computing, Networking and Communication (ICNC), IEEE Symposium on Computers and Communications (ISCC), Personal, Indoor and Mobile Radio Communications (PIMRC), International Conference on Cognitive Radio Oriented Wireless Networks (CROWNCOM), etc.

Conference & Book Organization

Technical Program Committee (TPC) Member of the 12th EAI International Conference on Cognitive Radio Oriented Wireless Networks (CROWNCOM 2017)

Technical Program Committee (TPC) Member of the 11th EAI International Conference on Cognitive Radio Oriented Wireless Networks (CROWNCOM 2016)

Technical Program Committee (TPC) Member of the 15th International Conference on Wireless Networks and Mobile Systems (WINSYS 2018)

Technical Program Committee (TPC) Member of the 14th International Conference on Wireless Networks and Mobile Systems (WINSYS 2017)

Technical Program Committee (TPC) Member of the 13th International Conference on Wireless Networks and Mobile Systems (WINSYS 2016)

Technical Program Committee (TPC) Member of the 8th International Conference on Advances in Cognitive Radio (COCORA 2018)

Technical Program Committee (TPC) Member of the 7th International Conference on Advances in Cognitive Radio (COCORA 2017)

Technical Program Committee (TPC) Member of Springer volume Computational Intelligence in Wireless Sensor Networks

Professional Memberships

Institute of Electrical and Electronics Engineers (IEEE)

IEEE Communications Society

IEEE Internet of Things Community

IEEE Young Professionals