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Computer Science & Engineering  
Robotic Sensor Networks Lab.  
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#### EDUCATION

**Bogazici University, Istanbul, Turkey**

Ph.D. in Electrical & Electronics Engineering  
2006 - 2013  
Thesis: Multi-robot Communication and Task Coordination  
Advisor: Prof. Işıl Bozma  
Co-advisor: Prof. Ayşın Ertüzün

**Bogazici University, Istanbul, Turkey**

M.Sc. in Systems and Control Engineering  
2003 - 2006  
Thesis: Robot Parts' Rearrangement - Sensor Uncertainty Reduction Using Particle Filters  
Advisor: Prof. Işıl Bozma  
Co-advisor: Prof. Ayşın Ertüzün

**Erciyes University, Kayseri, Turkey**

B.Sc. in Control and Computer Engineering  
1997 - 2002

#### WORK EXPERIENCE RELATED TO ACADEMIA

**University of Minnesota, Minneapolis, MN, US**

Post-doctoral Researcher in Robotic Sensor Networks Lab., Computer Science & Engineering  
November 2014- Current

**Bogazici University, Istanbul, Turkey**

Post-doctoral Researcher in Intelligent Systems Lab., Electrical & Electronics Engineering  
2013 - 2014

**Bogazici University, Istanbul, Turkey**

Teaching and Research Assistant in Electrical & Electronics Engineering  
2006 - 2013

**Bogazici University, Istanbul, Turkey**

Research Assistant in Systems and Control Engineering  
2003 - 2006

#### RESEARCH INTERESTS

Active localization algorithms, multi-robot communication and task allocation, navigation, precision agriculture, formation control, electro-mechanical design of robots.

#### PROJECTS

NSF (National Science Foundation), "1111638", RI: Large: Collaborative Research: A Robotic Network for Locating and Removing Invasive Carp from Inland Lakes, 2014-current, Post-Doc.

TÜBİTAK (The Scientific and Technological Research Council of Turkey), "111E285", Hybrid Mapping and Scene Perception by Comparison Methodology for Multirobots, 2012- 2013, Phd Student.

Bogazici University BAP (Scientific Research Projects), "5720", Different Perception Types and Sharing via Communication for Multirobot Systems, 2011-2012, Phd Student.

Bogazici University BAP, "5169", Design and Manufacturing EDARG2 Robot, 2010-2012, Phd Student.

Bogazici University BAP, "09HA210D", Scene Recognition with Multirobots, 2009-2010, Phd Student.

TÜBİTAK, “107M240”, Scene Recognition, Navigation and Coordination on Mobile Robots based on Attention, 2007-2010, PhD Student.

## PUBLICATIONS

### JOURNALS

H. Bayram, J. V. Hook, V. Isler, “Gathering Bearing Data for Target Localization”, *IEEE Robotics and Automation Letters*, vol. 1, no. 1, pp. 369-374, 2016.

H. Bayram, H. I. Bozma, “Coalition Formation Games for Dynamic Multirobot Tasks”, *The International Journal of Robotics and Research*, vol. 35, no. 5, pp. 514-527, 2016.

H. Bayram, H. I. Bozma, “Assistance Networks for Dynamic Multirobot Tasks”, *Autonomous Robots*, vol. 40, no. 4, pp. 615-630, 2016.

H. Bayram, H. I. Bozma, “Decentralized Network Topologies in Multirobot Systems”, *Advanced Robotics*, vol. 28, no. 14, pp. 967-982, 2014.

### BOOK CHAPTER

H. Bayram, H. I. Bozma, “Coalition Formation Games for Dynamic Multirobot Tasks”, *Algorithmic Foundations of Robotics XI*, Springer International Publishing, 37-54, 2015.

### CONFERENCES

H. Bayram, K. Doddapaneni, N. Stefas, V. Isler, “Active Localization of VHF Collared Animals with Aerial Robots”, *The Twelfth Annual IEEE International Conference on Automation Science and Engineering (CASE)*, Texas, USA, 2016, (to be presented).

N. Stefas, H. Bayram, V. Isler, “Vision-Based UAV Navigation in Orchards“, *The 5th IFAC Conference on Sensing, Control and Automation for Agriculture (AGRICONTROL)*, Seattle, WA, USA, 2016 (to be presented).

H. Bayram, J. V. Hook, V. Isler, “Gathering Bearing Data for Target Localization”, *IEEE International Conference on Robotics and Automation (ICRA)*, Stockholm, Sweden, 2016.

H. Bayram, H.I. Bozma, “Coalition Formation Games for Dynamic Multirobot Tasks”, *The Eleventh International Workshop on the Algorithmic Foundations of Robotics (WAFR)*, Istanbul, 2014.

H. Bayram, H. I. Bozma, “Multirobot Communication Network Topology via Centralized Pairwise Games”, *IEEE International Conference on Robotics and Automation (ICRA)*, Karlsruhe, Germany, pp. 2506-2511, 2013.

H. Karaoguz, H. Bayram, H. I. Bozma, “Communication Integrated Control Architecture in Multirobot Systems”, *ICRA Workshop on Towards Fully Decentralized Multi-Robot Systems: Hardware, Software and Integration*, Karlsruhe, Germany, 2013.

H. Bayram, H. I. Bozma, “Pairwise vs coalition game networks for multi-robot systems”, *18th IFAC World Congress*, Milan, Italy, pp. 13570-13575, 2011.

H. Bayram, H. I. Bozma, “Planar multi-robot realizations of connectivity graphs using genetic algorithms”, *IEEE/RSJ International Conference on Intelligent Robots and Systems (IROS)*, Taipei, Taiwan, pp. 5163-5168, 2010.

H. Bayram, H. I. Bozma, “Multi-robot Navigation with Limited Communication - Deterministic vs Game-theoretic Networks”, *IEEE/RSJ International Conference on Intelligent Robots and Systems (IROS)*, Taipei, Taiwan, pp. 1825-1830, 2010.

H. Bayram, A. Ertüzün, H.I. Bozma, “Event Driven Parts’ Moving under Sensory Inaccuracy: Particle Filter Approach”, *IEEE International Conference on Robotics and Automation (ICRA)*, Orlando, FL, USA, pp.2029-2034, 2006.

### JOURNALS (TURKISH)

H. Karaoguz, Ö. ErKent, H. Bayram and I. Bozma, “Tek Robottan Çoklu Robotlara Ortam Haritalama”, *EMO Bilimsel Dergi*, 4 (2), 2013.

## CONFERENCES (TURKISH)

H. Bayram, H.I. Bozma, “İkili Oyunlarla Çoklu Robot Ağ Topolojisi Tayini”, *Türkiye Robotbilim Konferansı* (ToRK), İstanbul, 2015.

H.S. Cildir, H. Bayram, H.I. Bozma, “Geniş Açılı Kameraların Mobil Robot ile Kalibre Edilmesi”, *Türkiye Robotbilim Konferansı* (ToRK), Ankara, 2014.

H. Bayram, H. I. Bozma, “Çoklu Robotlar için Algı Tümeleşik Oyun-Kuramsal İletişim Ağı”, *Innovations and Applications in Intelligent Systems Symposium* (ASYU), pp. 148-152, Turkey, 2012.

H. Bayram, E. Ertuzun, H.I. Bozma, “Doğrusal olmayan Sistemlerdeki Algılama Belirsizliğinin Parçacık Süzgeçleri ile Kestirimi”, *14. Sinyal İşleme ve Uygulamaları Kurultayı* (SİU), pp. 1-4, 2006.

H. Bayram, A. Ertüzün, I. Bozma, “Taşıyıcı Robotların Algılama Belirsizliğinde Parçacık Süzgeç Başarım Analizi”, *Otomatik Kontrol Ulusal Toplantısı* (TOK), 6-8 Kasım 2006, Ankara, pp. 190-195.

## INVITED TALKS

*Gathering Bearing Data for Target Localization*. Invited talk at the “On-line Decision-making in Multi-robot Coordination” workshop at RSS 2016.

## TEACHING RELATED EXPERIENCE

### **Bogazici University, Courses Assisted as TA**

- EE 201 Electrical Circuits I
- EE 202 Electrical Circuits II
- EE 450 Control Technology & Design
- EE 451 Introduction to Robot Control
- EE 497 Java Programming
- EE 552 Digital Control

## SKILLS

**Language** - Fluent in English

**Computer Skills** - MATLAB, C++, Java, Qt, VHDL; ROS