

# SIRMA YAVUZ

## PROF.

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### International Researcher IDs

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Publons / Web Of Science ResearcherID: W-9655-2019

ScopusID: 8669253700

Yoksis Researcher ID: 183998



## Learning Knowledge

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Doctorate 2005 - 2006	Yildiz Technical University, Faculty Of Electrical & Electronics, Computer Engineering, Turkey
Postgraduate 1992 - 1994	Yildiz Technical University, Faculty Of Electrical & Electronics, Computer Engineering, Turkey
Undergraduate 1986 - 1990	Yildiz Technical University, Faculty Of Electrical & Electronics, Electrical Engineering Department, Turkey

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## Foreign Languages

English, C2 Mastery

## Dissertations

Doctorate, Performans artırmaya yönelik paralel mimarilerin yapay sinir ağları yaklaşımı ile değerlendirilmesi, Yıldız Technical University, Faculty of Electrical & Electronics, Computer Engineering, 2006

Postgraduate, Üç serbestlik dereceli bir robot kolu tasarımı, Yıldız Technical University, Faculty of Electrical & Electronics, Computer Engineering, 1995

## Academic Titles / Tasks

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Professor 2021 - Continues	Yildiz Technical University, Faculty Of Electrical & Electronics, Computer Engineering
Associate Professor 2015 - Continues	Yildiz Technical University, Faculty Of Electrical & Electronics, Computer Engineering

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Assistant Professor  
2006 - 2015

Yildiz Technical University, Faculty Of Electrical & Electronics, Computer  
Engineering

Research Assistant  
1992 - 2006

Yildiz Technical University, Faculty Of Electrical & Electronics, Computer  
Engineering

## Supported Projects

1. YAVUZ S., ARABUL A. Y., BEKİROĞLU K. N., KESKİN ARABUL F., OBDAN A. H., Kaya Ö. F., ÖZÇİRA ÖZKILIÇ S., Güzel S., USLU E., Arıtürk M., et al., Project Supported by Higher Education Institutions, Otonom Karşılama ve Güvenlik Robotu, 2022 - Continues
2. USLU E., YAVUZ S., EĞİTMEN A., CEBELOĞLU F. S., Project Supported by Higher Education Institutions, Mobil cihazlar için modern zararlı yazılımları tespit eden yapay zeka tabanlı yeni nesil tespit algoritması, 2022 - 2023
3. YAVUZ S., ÇAKMAK F., Project Supported by Higher Education Institutions, Kara ve Mikro Hava Araçları Üzerinde Bezier Eğrileri ile Yol Planlaması ve Navigasyon Algoritmaları (PATH PLANNING WITH BEZIER CURVES AND NAVIGATION ALGORITHMS ON GROUND AND MULTI MICRO AERIAL VEHICLES), 2017 - 2023
4. Yavuz S., Amasyalı M. F., Uslu E., TUBITAK Project, 118E215 - Heterojen Çok Robotlu Otonom Arama Kurtarma Takımı İçin Etkin Görev Dağılımı, 2018 - 2021
5. USLU E., YAVUZ S., AMASYALI M. F., ÇAKMAK F., AKINCI A., MARANGOZ S., ALTUNTAŞ N., Project Supported by Higher Education Institutions, Gerçek Robot Platformu ile Tasarlanmış ve Tasarlanmamış Engebeli Alanda Otonom Gezirim, 2015 - 2018
6. AMASYALI M. F., ÇAKMAK F., ALTUNTAŞ N., YAVUZ S., USLU E., AKINCI A., MARANGOZ S., DİLAVER M. B., KIRLI E., Project Supported by Higher Education Institutions, Kısıtlı İletişime Sahip Robot Takımları İçin Otonom Keşif Algoritmalarının Tasarlanması, 2015 - 2017
7. Yavuz S., Sezgin A., Project Supported by Higher Education Institutions, İnsansız Hava Aracı Tasarım ve Kontrolü, 2015 - 2017
8. Yavuz S., Amasyalı M. F., Uslu E., TUBITAK Project, Otonom Arama Kurtarma Robotları İçin Keşif, Haritalama Ve Afetlerde Tespit Algoritmalarının Geliştirilmesi, 2013 - 2016
9. YAVUZ S., Project Supported by Higher Education Institutions, Afet Ortamlarında Kullanılacak Otonom Robot Tasarımı, 2013 - 2014
10. YAVUZ S., Project Supported by Higher Education Institutions, Afet Robotları İçin Algoritma Tasarımı, 2013 - 2014
11. YAVUZ S., Project Supported by Higher Education Institutions, Eş zamanlı konum belirleme ve harita oluşturma amaçlı robot takımı projesi, 2008 - 2012
12. YAVUZ S., Project Supported by Higher Education Institutions, Robot Takımı ile Eş Zamanlı Konum Belirleme ve Haritalama., 2010 - 2011
13. Bolat B., Yavuz S., Amasyalı M. F., Altun O., Kurt Z., Uslu E., Project Supported by Higher Education Institutions, Eş Zamanlı Konum Belirleme ve Harita Oluşturma Amaçlı Otonom Robot Projesi YTÜ BAPK 27 04 01 01, 2007 - 2008

## Awards

1. Kıvrak H., Çakmak F., Köse H., Yavuz S., Best Paper Award, International Conference On Innovations In Intelligent Systems And Applications, August 2020
2. Dilaver M. B., Çakmak F., Uslu E., Altuntaş N., Amasyalı M. F., Yavuz S., En İyi Bildiri Ödülü, Akıllı Sistemlerde Yenilikler Ve Uygulamaları Konferansı, October 2017
3. Yavuz S., Amasyalı M. F., Uslu E., Çakmak F., Altuntaş N., RoboCup World Championship - En iyi keşif robotu Ödülü, Nist, August 2017
4. Yavuz S., Çakmak F., Amasyalı M. F., Uslu E., RoboCup En İyi Dış Ortam Robotu, Nist, August 2017
5. Yavuz S., Uslu E., Amasyalı M. F., Çakmak F., Arama Kurtarma Simülasyon Ligi'nde 1.lık, Nist, August 2017

6. Yavuz S., Amasyalı M. F., Uslu E., Çakmak F., Altuntaş N., RoboCup World Championship - En iyi otonom robot Ödülü, Nist, August 2017
7. Yavuz S., Amasyalı M. F., Uslu E., Çakmak F., RoboCup German Open, Nist, May 2017

## Scholarships

Yurt Dışı Doktora Burs Programı, YOK, 1997 - 2001

## Jury Memberships

Post Graduate, Post Graduate, Yıldız Teknik Üniversitesi, July, 2019

## Designed Lessons

- Yavuz S., Derin Öğrenme ve Yapay Sinir Ağları , Doctorate, 2015 - 2016  
Yavuz S., Amasyalı M. F., Robot Teknolojisine Giriş, Undergraduate, 2015 - 2016  
Yavuz S., Sistem Simülasyonu, Doctorate, 2009 - 2010  
Yavuz S., Mühendislik Matematiği, Undergraduate, 2008 - 2009  
Yavuz S., Olasılıksal Robotik, Postgraduate, 2007 - 2008  
Yavuz S., Ayrık Olay Simülasyonu, Undergraduate, 2006 - 2007

## Research Infrastructure Information

Yavuz S., Olasılıksal Robotik Grubu Laboratuvarı, September 2006

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

1. **TRConv: Multi-platform malware classification via target regulated convolutions**  
EĞİTMEN A., Yavuz A. G., YAVUZ S.  
IEEE Access, vol.12, pp.71492-71504, 2024 (SCI-Expanded)
2. **A 3D navigation algorithm switching between waypoint and Bezier curves based local plans for micro air vehicles**  
ÇAKMAK F., YAVUZ S.  
Engineering Science and Technology, an International Journal, vol.48, 2023 (SCI-Expanded)
3. **Waypoint based path planner for socially aware robot navigation**  
Kivrak H., Çakmak F., Köse H., Yavuz S.  
CLUSTER COMPUTING-THE JOURNAL OF NETWORKS SOFTWARE TOOLS AND APPLICATIONS, vol.25, no.3, pp.1665-1675, 2022 (SCI-Expanded)
4. **Social navigation framework for assistive robots in human inhabited unknown environments**  
Kivrak H., Çakmak F., Köse H., Yavuz S.  
Engineering Science and Technology, an International Journal, vol.24, pp.284-298, 2021 (SCI-Expanded)
5. **Image Visual Sensor Used in Health-Care Navigation in Indoor Scenes Using Deep Reinforcement Learning (DRL) and Control Sensor Robot for Patients Data Health Information**  
Seaman W. K., YAVUZ S.  
JOURNAL OF MEDICAL IMAGING AND HEALTH INFORMATICS, vol.11, no.1, pp.104-113, 2021 (SCI-Expanded)
6. **Indoor mobile robot navigation using deep convolutional neural network**  
Sleaman W. K., Yavuz S.

- Journal of Intelligent and Fuzzy Systems, vol.39, pp.5475-5486, 2020 (SCI-Expanded)
7. **More scalable solution for multi-robot-multi-target assignment problem**  
Marangoz S., Amasyalı M. F., Uslu E., Çakmak F., Altuntaş N., Yavuz S.  
ROBOTICS AND AUTONOMOUS SYSTEMS, vol.113, pp.174-185, 2019 (SCI-Expanded)
  8. **An architecture for multi-robot localization and mapping in the Gazebo/Robot Operating System simulation environment**  
Uslu E., Çakmak F., Altuntaş N., Marangoz S., Amasyalı M. F., Yavuz S.  
SIMULATION-TRANSACTIONS OF THE SOCIETY FOR MODELING AND SIMULATION INTERNATIONAL, vol.93, pp.771-780, 2017 (SCI-Expanded)
  9. **An Architecture for Multi-Robot Localization and Mapping on Gazebo/ROS Simulation Environment**  
USLU E., ÇAKMAK F., ALTUNTAŞ N., MARANGOZ S., AMASYALI M. F., YAVUZ S.  
SIMULATION:SIMULATION-TRANSACTIONS OF THE SOCIETY FOR MODELING AND SIMULATION INTERNATIONAL, pp.1-12, 2017 (SCI-Expanded)
  10. **R-SLAM: Resilient localization and mapping in challenging environments**  
Balcilar M., Yavuz S., Amasyalı M. F., Uslu E., Çakmak F.  
ROBOTICS AND AUTONOMOUS SYSTEMS, vol.87, pp.66-80, 2017 (SCI-Expanded)
  11. **SIMULTANEOUS LOCALIZATION AND MAPPING WITH LIMITED SENSING USING EXTENDED KALMAN FILTER AND HOUGH TRANSFORM**  
Özışık O., Yavuz S.  
TEHNICKI VJESNIK-TECHNICAL GAZETTE, vol.23, pp.1731-1738, 2016 (SCI-Expanded)
  12. **Analysis and improvement of a novel image fusion encryption algorithm based on DNA sequence operation and hyper-chaotic system**  
Ozkaynak F., Yavuz S.  
NONLINEAR DYNAMICS, vol.78, pp.1311-1320, 2014 (SCI-Expanded)
  13. **Designing chaotic S-boxes based on time-delay chaotic system**  
Ozkaynak F., Yavuz S.  
NONLINEAR DYNAMICS, vol.74, pp.551-557, 2013 (SCI-Expanded)
  14. **Security problems for a pseudorandom sequence generator based on the Chen chaotic system**  
Ozkaynak F., Yavuz S.  
COMPUTER PHYSICS COMMUNICATIONS, vol.184, pp.2178-2181, 2013 (SCI-Expanded)
  15. **Cryptanalysis of a novel image encryption scheme based on improved hyperchaotic sequences**  
Ozkaynak F., Ozer A. B., Yavuz S.  
OPTICS COMMUNICATIONS, vol.285, pp.4946-4948, 2012 (SCI-Expanded)
  16. **A neural network based methodology for performance evaluation of parallel systems**  
Yavuz S.  
AI 2005: ADVANCES IN ARTIFICIAL INTELLIGENCE, vol.3809, pp.297-307, 2005 (SCI-Expanded)

## Articles Published in Other Journals

1. **Survey on learning-based scene extrapolation in robotics**  
Güzel S., YAVUZ S.  
International Journal of Intelligent Robotics and Applications, vol.8, no.1, pp.251-268, 2024 (ESCI)
2. **Autonomous Navigation Algorithm for RoboCup RRL Maneuvering 2 Field**  
Dilaver M. B., Çakmak F., Uslu E., Altuntaş N., Amasyalı M. F., Yavuz S.  
Journal of Intelligent Systems with Applications, vol.1, no.2, pp.213-216, 2018 (Peer-Reviewed Journal)
3. **Autonomous Mobile Robot Navigation in Structured Rough Terrain**  
Yaşar A., Uslu E., Çakmak F., Altuntaş N., Amasyalı M. F., Yavuz S.  
Akıllı Sistemler ve Uygulamaları Dergisi, vol.1, no.1, pp.67-74, 2018 (Peer-Reviewed Journal)
4. **Color Based Object Tracking For Unmanned Aerial Vehicles**  
Sezgin A., Yavuz S.

International Journal of Electronics, Mechanical and Mechatronics Engineering, vol.5, no.1, pp.881-890, 2015  
(Peer-Reviewed Journal)

5. **Pre-Mapping System with Single Laser Sensor Based on Gmapping Algorithm**  
İlhan H. O., Yavuz S., Esenkanova J.  
International Journal of Electrical Energy, vol.1, pp.97-101, 2013 (Peer-Reviewed Journal)
6. **Cryptanalysis of Bigdeli algorithm using Çokal and Solak attack**  
Özkaynak F., Özer A. B., Yavuz S.  
International Journal of Information Security Science, vol.1, no.3, pp.79-81, 2012 (Peer-Reviewed Journal)
7. **Robot mapping and map optimization using genetic algorithms and artificial neural networks**  
Cabar I., YAVUZ S., Erol O.  
WSEAS Transactions on Computers, vol.7, no.7, pp.1061-1070, 2008 (Scopus)
8. **Performance prediction of a parallel Monte Carlo application: A neural network approach**  
YAVUZ S.  
WSEAS Transactions on Circuits and Systems, vol.4, no.5, pp.486-489, 2005 (Scopus)

## Books & Book Chapters

1. Yavuz S., Allahviranloo T., Arıtürk M.  
in: , Snehashish Chakraverty, Editor, John Wiley & Sons, West Sussex, UK , New-Jersey, pp.391-412, 2020

## Refereed Congress / Symposium Publications in Proceedings

1. **Occupancy Grid Map Completion Based on Geometric Features and Door Discovery**  
Guzel S., USLU E., YAVUZ S.  
12th International Symposium on Digital Forensics and Security, ISDFS 2024, Texas, United States Of America, 29 - 30 April 2024
2. **Infrared Image Generation From RGB Images Using CycleGAN**  
Guzel S., YAVUZ S.  
16th International Conference on INnovations in Intelligent SysTems and Applications, INISTA 2022, Biarritz, France, 8 - 12 August 2022
3. **Üç Boyutlu Doğal Seyrüsefer**  
Kaya Ö. F., Yılmaz K., Uslu E., Çakmak F., Amasyalı M. F., Yavuz S.  
28th Signal Processing and Communications Applications Conference (SIU), Gaziantep, Turkey, 5 - 07 October 2020
4. **Gps Yasak Alanlarda İnsansız Hava Aracı Lokalizasyonuna Dair Yaklaşımlar**  
YAVUZ S.  
2020 28th Signal Processing and Communications Applications Conference (SIU), İstanbul, Turkey, 05 October 2020
5. **3D Mapping and Simultaneous Navigation for Multi Micro Aerial Vehicles in Indoor Environments**  
**Coklu Mikro Hava Araclari icin Ic Ortamda 3B Haritalama ve Es Zamanli Navigasyon**  
DİLAVER M. B., ÇAKMAK F., USLU E., AMASYALI M. F., YAVUZ S.  
28th Signal Processing and Communications Applications Conference, SIU 2020, Gaziantep, Turkey, 5 - 07 October 2020
6. **A multilevel mapping based pedestrian model for social robot navigation tasks in unknown human environments**  
KIVRAK H., ÇAKMAK F., KÖSE H., YAVUZ S.  
2020 International Conference on INnovations in Intelligent SysTems and Applications (INISTA), İstanbul, Turkey, 24 - 26 August 2020
7. **Physiological Data-Based Evaluation of a Social Robot Navigation System**

KIVRAK H., ULUER P., KÖSE H., Gümüşlü E., EROL BARKANA D., ÇAKMAK F., YAVUZ S.

2020 29th IEEE International Conference on Robot and Human Interactive Communication (RO-MAN), Nepal, Italy, 31 August - 04 September 2020, pp.994-999

8. **Otonom Efektif Alan Tarayıcı Robot Tasarımı**  
Koroğlu U., İslamoğlu U., Uslu E., Çakmak F., Altuntaş N., Amasyalı M. F., Yavuz S.  
Akıllı Sistemlerde Yenilikler ve Uygulamaları, İzmir, Turkey, 31 October - 02 November 2019, pp.1-4
9. **Design of an Autonomous Effective Area Scanning Robot Otonom Efektif Alan Tarayıcı Robot Tasarımı**  
Koroglu U., Islamoglu U., Uslu E., Çakmak F., Altuntas N., Fatih Amasyali M., Yavuz S.  
2019 Innovations in Intelligent Systems and Applications Conference, ASYU 2019, İzmir, Turkey, 31 October - 02 November 2019
10. **Holonomik Robot ile Dar Alanlarda Gezinim (Holonomic Robot Navigation in Narrow Spaces)**  
BAYGÜL F., USLU E., ÇAKMAK F., ALTUNTAŞ N., AMASYALI M. F., YAVUZ S.  
5. Türkiye Robotbilim Konferansı (ToRK 2019), İstanbul, Turkey, 26 - 28 June 2019, pp.16-21
11. **Holonomic Robot Navigation in Narrow Spaces**  
Baygöl F., Uslu E., Çakmak F., Altuntaş N., Amasyalı M. F., Yavuz S.  
Türkiye Robotbilim Konferansı 2019, ToRK2019, İstanbul, Turkey, 26 - 28 June 2019, pp.16-21
12. **Socially Aware Robot Navigation Using the Collision Prediction Based Pedestrian Model**  
KIVRAK H., ÇAKMAK F., KÖSE H., YAVUZ S.  
Workshop on Robotic Co-workers 4.0: Human Safety and Comfort in Human-Robot Interactive Social Environments 2018 IEEE/RSJ International Conference on Intelligent Robots and Systems, Madrid, Spain, 1 - 05 October 2018
13. **Tasarlanmış Engelibeli Ortamda Otonom Mobil Robot Gezinimi**  
YAŞAR A., USLU E., ÇAKMAK F., ALTUNTAŞ N., AMASYALI M. F., YAVUZ S.  
Akıllı Sistemlerde Yenilikler ve Uygulamaları Konferansı, Antalya, Turkey, 5 - 07 October 2017, pp.37
14. **RoboCup RRL Manevra 2 Alanı için Otonom Gezinim Algoritması**  
DİLAVER M. B., ÇAKMAK F., USLU E., ALTUNTAŞ N., AMASYALI M. F., YAVUZ S.  
Akıllı Sistemlerde Yenilikler ve Uygulamaları Konferansı, Antalya, Turkey, 5 - 07 October 2017, pp.71
15. **Android application for simultaneously control of multiple land robots which have different drive strategy**  
Gökçen B., Baygöl F., ÇAKMAK F., USLU E., AMASYALI M. F., YAVUZ S.  
2nd International Conference on Computer Science and Engineering, UBMK 2017, Antalya, Turkey, 5 - 08 October 2017, pp.724-728
16. **Comparison of 3-Dimensional SLAM systems: RTAB-Map vs. Kintinuous**  
Altuntaş N., Uslu E., Çakmak F., Amasyalı M. F., Yavuz S.  
2nd International Conference on Computer Science and Engineering, UBMK 2017, Antalya, Turkey, 5 - 08 October 2017, pp.99-103
17. **Akıllı Mobil Robotları Hayalden Gerçeğe Dönüştürmek**  
YAVUZ S.  
ASYU 2017, Alanya, 5 - 07 October 2017
18. **Thermal based exploration for search and rescue robots**  
ÇAKMAK F., USLU E., AMASYALI M. F., YAVUZ S.  
2017 IEEE International Conference on INnovations in Intelligent SysTems and Applications, INISTA 2017, Gdynia, Poland, 3 - 05 July 2017, pp.113-118
19. **Design and implementation of an outdoor line follower robot for RoboCup search and rescue league RoboCup Arama Kurtarma Ligi Dış Ortam Kategorisi Çizgi İzleyen Robot Platformu Tasarımı ve Gerçeklenmesi**  
Dilaver M. B., USLU E., ÇAKMAK F., ALTUNTAŞ N., AMASYALI M. F., YAVUZ S.  
25th Signal Processing and Communications Applications Conference, SIU 2017, Antalya, Turkey, 15 - 18 May 2017
20. **Hazmat charts detection on search and rescue league of RoboCup competitions RoboCup Yarışmaları Arama Kurtarma Ligi Ortamlarında Hazmat İşaretleri Tespiti**

- Çakmak F., Uslu E., Amasyalı M. F., Yavuz S.  
25th Signal Processing and Communications Applications Conference, SIU 2017, Antalya, Turkey, 15 - 18 May 2017
21. **A fast 3D exploration algorithm for autonomous aerial robots Otonom Hava Robotlari İçin Hizli Bir 3 Boyutlu Keşif Algoritmasi**  
Marangoz S., Ergun E. E., Uslu E., Çakmak F., Altuntaş N., Amasyalı M. F., Yavuz S.  
25th Signal Processing and Communications Applications Conference, SIU 2017, Antalya, Turkey, 15 - 18 May 2017
22. **Autonomous mobile robot exploration in negative obstacle environment Çukurlu Ortamda Otonom Mobil Robot ile Keşif**  
Keskin N., Uslu E., Çakmak F., Altuntaş N., Amasyalı M. F., Yavuz S.  
25th Signal Processing and Communications Applications Conference, SIU 2017, Antalya, Turkey, 15 - 18 May 2017
23. **A Fast 3D Exploration Algorithm for Autonomous Aerial Robots**  
Marangoz S., Ergun E. E., USLU E., ÇAKMAK F., Altuntas N., AMASYALI M. F., YAVUZ S.  
25th Signal Processing and Communications Applications Conference (SIU), Antalya, Turkey, 15 - 18 May 2017
24. **Autonomous Mobile Robot Exploration in Negative Obstacle Environment**  
Keskin N., USLU E., ÇAKMAK F., Altuntas N., AMASYALI M. F., YAVUZ S.  
25th Signal Processing and Communications Applications Conference (SIU), Antalya, Turkey, 15 - 18 May 2017
25. **Design and Implementation of an Outdoor Line Follower Robot for RoboCup Search and Rescue League**  
DİLAVER M. B., USLU E., ÇAKMAK F., Altuntas N., AMASYALI M. F., YAVUZ S.  
25th Signal Processing and Communications Applications Conference (SIU), Antalya, Turkey, 15 - 18 May 2017
26. **Hazmat Charts Detection on Search and Rescue League of RoboCup Competitions**  
ÇAKMAK F., USLU E., AMASYALI M. F., YAVUZ S.  
25th Signal Processing and Communications Applications Conference (SIU), Antalya, Turkey, 15 - 18 May 2017
27. **Authentication For Online Voting Using Physical Biometric**  
Yavuz S., Abbas S.  
INTERNATIONAL CONFERENCE ON ADVANCES IN SCIENCE ICAS 2016, İstanbul, Turkey, 31 August - 02 September 2016
28. **Experiences of Team Yildiz in Virtual and Real Rescue League**  
Yavuz S., Amasyalı M. F., Uslu E., Çakmak F.  
The Future of robot rescue simulation Workshop, Leiden, Netherlands, 29 February - 04 March 2016
29. **Deformable Part Model and Deep Learning Comparison on Victim Detection**  
Cakmak F., Uslu E., Altuntas N., Marangoz S., Balcilar M., Amasyalı M. F., Yavuz S.  
24th Signal Processing and Communication Application Conference (SIU), Zonguldak, Turkey, 16 - 19 May 2016, pp.1513-1516
30. **An Architecture for Multi-Robot Hector Mapping**  
Balcilar M., USLU E., ÇAKMAK F., ALTUNTAŞ N., Marangoz S., AMASYALI M. F., YAVUZ S.  
International Symposium on Innovations in Intelligent Systems and Applications (INISTA), Sinaia, Romania, 2 - 05 August 2016
31. **Impact of Artificial Dataset Enlargement on Performance of Deformable Part Models**  
Yilmaz B., AMASYALI M. F., Balcilar M., USLU E., YAVUZ S.  
24th Signal Processing and Communication Application Conference (SIU), Zonguldak, Turkey, 16 - 19 May 2016, pp.193-196
32. **Efficiency of dynamic local area strategy for frontier-based exploration in indoor environments**  
Akagündüz S., Özalp N., Yavuz S.  
9th International Conference on Intelligent Robotics and Applications, ICIRA 2016, Tokyo, Japan, 22 - 24 August 2016, pp.351-361
33. **3 Dimensional Thermal Mapping**  
ALTUNTAŞ N., ÇAKMAK F., USLU E., Balcilar M., AMASYALI M. F., YAVUZ S.  
24th Signal Processing and Communication Application Conference (SIU), Zonguldak, Turkey, 16 - 19 May 2016, pp.1201-1204
34. **Implementation of frontier-based exploration algorithm for an autonomous robot**

USLU E., ÇAKMAK F., BALCILAR M., Akıncı A., AMASYALI M. F., YAVUZ S.

International Symposium on Innovations in Intelligent Systems and Applications, INISTA 2015, Madrid, Spain, 2 - 04 August 2015

35. **Hudut Hedefleri Temelli Otonom Keşif Algoritması Uygulaması**

USLU E., ÇAKMAK F., BALCILAR M., AMASYALI M. F., YAVUZ S.

23. IEEE Sinyal İşleme Uygulamaları Kurultayı, Malatya, Turkey, 16 May 2015, vol.1, pp.1313-1316

36. **Human victim detection with Deformable Part Models Değişebilir Parça bazlı Modeller ile Kurban Tanıma**

Yılmaz B., Balcılar M., AMASYALI M. F., YAVUZ S.

2015 23rd Signal Processing and Communications Applications Conference, SIU 2015, Malatya, Turkey, 16 - 19 May 2015, pp.947-950

37. **nImplementation of Frontier-Based Exploration Algorithm for an Autonomous Robot**

USLU E., ÇAKMAK F., Balcılar M., Akıncı A., AMASYALI M. F., YAVUZ S.

International Symposium on Innovations in Intelligent Systems and Applications (INISTA 2015), Madrid, Spain, 2 - 04 September 2015, pp.34-40

38. **Frontier-Based Autonomous Exploration Algorithm Implementation**

Uslu E., Çakmak F., Balcılar M., Amasyalı M. F., Yavuz S.

23rd Signal Processing and Communications Applications Conference (SIU), Malatya, Turkey, 16 - 19 May 2015, pp.1313-1316

39. **ROS Uyumlu Robot Platformu Gerçeklenmesi**

ÇAKMAK F., USLU E., BALCILAR M., YAVUZ S., AMASYALI M. F.

Türkiye Otonom Robotlar Konferansı (TORK), Ankara, Turkey, 06 November 2014, pp.1

40. **ROS Compatible Robot Platform Implementation**

ÇAKMAK F., USLU E., BALCILAR M., YAVUZ S., AMASYALI M. F.

Türkiye Otonom Robotlar Konferansı, Ankara, Turkey, 06 November 2014, vol.1, pp.1-4

41. **Using Range and Inertia Sensors for Trajectory and Pose Estimation**

ÇAKMAK F., USLU E., YAVUZ S., AMASYALI M. F., BALCILAR M., ALTUNTAŞ N.

Signal Processing and Communication Applications Conference, Trabzon, Turkey, 23 April 2014, vol.1, pp.506-509

42. **Routing with Dijkstra in Mobile Ad-Hoc Networks**

Mahmoodi K., Balcılar M., Amasyalı M. F., Yavuz S., Uzun Y., Davletov F.

17th International Symposium on Robot World Cup (RoboCup), Eindhoven, Netherlands, 24 June - 01 July 2013, vol.8371, pp.316-325

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2014 22nd Signal Processing and Communications Applications Conference, SIU 2014, Trabzon, Turkey, 23 - 25 April 2014, pp.506-509

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Sahin G., Balcılar M., Uslu E., Yavuz S., Amasyalı M. F.

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45. **Security Analysis of an Encryption Algorithm Based on Cellular Automata and Chaos**

Özer A. B., Yavuz S., Özkaynak F.

6th International Conference on Information Security and Cryptology, Ankara, Turkey, 20 - 21 September 2013, pp.1

46. **Evaluation Criteria for Chaos Based Cryptographic Systems**

Yavuz S., Özer A. B., Özkaynak F.

Tübitak - A Special Conference: Open Problems in Mathematical and Computational Sciences, İstanbul, Turkey, 01 September 2009

47. **Security analysis of an image encryption algorithm based on chaos and DNA encoding Kaos ve DNA kodlama tabanlı bir görüntü şifreleme algoritmasının güvenlik analizi**



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2013 21st Signal Processing and Communications Applications Conference, SIU 2013, Haspolat, Turkey, 24 - 26 April 2013

48. **Usage of HoG (histograms of oriented gradients) features for victim detection at disaster areas**  
Uzun Y., Balcılar M., Mahmoodi K., Davletov F., AMASYALI M. F., YAVUZ S.  
8th International Conference on Electrical and Electronics Engineering, ELECO 2013, Bursa, Turkey, 28 - 30 November 2013, pp.535-538
49. **A comparison of EKF, UKF, FastSLAM2.0, and UKF-based FastSLAM algorithms**  
Kurt-Yavuz Z., YAVUZ S.  
IEEE 16th International Conference on Intelligent Engineering Systems, INES 2012, Lisbon, Portugal, 13 - 15 June 2012, pp.37-43
50. **Improvement of the measurement update step of EKF-SLAM**  
Kurt Yavuz Z., YAVUZ S.  
IEEE 16th International Conference on Intelligent Engineering Systems, INES 2012, Lisbon, Portugal, 13 - 15 June 2012, pp.61-65
51. **Analysis of chaotic methods for compression and encryption processes in data communication** *Veri iletişiminde sıkıştırma ve şifreleme süreçleri için kaotik yöntemlerin analizi*  
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2012 20th Signal Processing and Communications Applications Conference, SIU 2012, Fethiye, Muğla, Turkey, 18 - 20 April 2012
52. **Doğanın Hesapsal Güzelliklerinden Öğrendiğimiz Görüntü Şifreleme Algoritmaları**  
Yavuz S., Özkaynak F., Özer A. B.  
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53. **Kaos Tabanlı Yeni Bir Blok Şifreleme Algoritması**  
Yavuz S., Özkaynak F., Özer A. B.  
IV. Ağ ve Bilgi Güvenliği Sempozyumu, İstanbul, Turkey, 25 - 26 November 2011, pp.108-112
54. **An automated domain specific stop word generation method for natural language text classification**  
Ayrıl H., Yavuz S.  
2011 International Symposium on INnovations in Intelligent SysTems and Applications, INISTA 2011, Istanbul-Kadikoy, Turkey, 15 - 18 June 2011, pp.500-503
55. **Simultaneous localization and mapping using extended Kalman filter** *Genişletilmiş Kalman filtresi yöntemine dayalı eş zamanlı konum belirleme ve haritalama algoritması*  
Yavuz S., Kurt Z., Biçer M. S.  
2009 IEEE 17th Signal Processing and Communications Applications Conference, SIU 2009, Antalya, Turkey, 9 - 11 April 2009, pp.700-703
56. **Fuzzy-Neural Robot Controller for Unknown Environment Exploration**  
Yavuz S., Özışık O.  
1st International Fuzzy Systems Symposium (FUZZYSS09), Ankara, Turkey, 1 - 02 October 2009, pp.460-463
57. **Autonomous Parallel Parking Robot**  
Yavuz S., Şahin O.  
Int. Symp. On Innovations in Intelligent Systems and Applications, Trabzon, Turkey, 29 June - 01 July 2009, pp.421-424
58. **A Simulation of Preventive Method to Reduce the Number of Stop&Go Situations in Urban Traffic**  
Yavuz S., Balcılar M., Sönmez A. C.  
Int. Symp. On Innovations in Intelligent Systems and Applications, Trabzon, Turkey, 29 June - 01 July 2009, pp.125-129
59. **Genişletilmiş Kalman Filtresi Yöntemine Dayalı Eş Zamanlı Konum Belirleme ve Haritalama**  
Yavuz S., Kurt Z., Biçer M. S.  
SIU 2009, Kocaeli, Turkey, 9 - 11 April 2009, pp.700-703
60. **Simultaneous Localization and Mapping Using Extended Kalman Filter**

YAVUZ S., Kurt Z., Bicer M. S.

IEEE 17th Signal Processing and Communications Applications Conference, Antalya, Turkey, 9 - 11 April 2009, pp.914-917

61. **A simultaneous localization and map building algorithm based on Sequential Monte Carlo method**  
**Sirali Monte Carlo yöntemine dayali eş zamanli konum belirleme ve haritalama algoritması**  
Kurt Z., Yavuz S.  
2008 IEEE 16th Signal Processing, Communication and Applications Conference, SIU, Aydın, Turkey, 20 - 22 April 2008
62. **An Autonomous Robot Map Creation and Map Optimization Using Genetic Algorithms and Artificial Neural Networks**  
Cabbar I., Erol O. K., YAVUZ S.  
8th WSEAS International Conference on Applied Informatics and Communications, Rhodes, Greece, 20 - 22 August 2008, pp.443-445
63. **A Simultaneous Localization and Map Building Algorithm Based on Sequential Monte Carlo Method**  
Kurt Z., YAVUZ S.  
IEEE 16th Signal Processing and Communications Applications Conference, Aydın, Turkey, 20 - 22 April 2008, pp.709-712
64. **An occupancy grid based SLAM method**  
Özışık O., Yavuz S.  
IEEE International Conference on Computational Intelligence for Measurement Systems and Applications, İstanbul, Turkey, 14 - 16 July 2008, pp.117-119
65. **Optical Music Recognition**  
Yavuz S., Özışık O.  
Int. Symp. On Innovations in Intelligent Systems and Applications, İstanbul, Turkey, 20 - 23 June 2007, pp.257-261
66. **YEEM : Yazılım Projeleri Maliyet Tahminleme Ölçev Seti ve Modeli**  
Yavuz S., Kalıpsız O., Ayyıldız M.  
ELECO 2006, Bursa, Turkey, 6 - 10 December 2006, pp.1-4
67. **Eş Zamanlı Konum Belirleme ve Harita Oluşturma Amaçlı Otonom Bir Robot**  
Yavuz S., Amasyalı M. F., Balçılar M., Bilgin G., Dinç T., Kurt Yavuz Z.  
Elektrik Elektronik Bilgisayar Mühendisliği Sempozyumu (ELECO 2006), Bursa, Turkey, 6 - 10 December 2006, pp.225-229
68. **A Metric-Set and Model Suggestion for Better Software Project Cost Estimation**  
Ayyıldız M., KALIPSIZ O., YAVUZ S.  
Conference of the World-Academy-of-Science-Engineering-and-Technology, Venice, Italy, 24 - 26 November 2006, vol.16, pp.274-279
69. **A neural network based methodology for performance evaluation of parallel systems**  
YAVUZ S.  
18th Australian Joint Conference on Artificial Intelligence, AI 2005: Advances in Artificial Intelligence, Sydney, Australia, 5 - 09 December 2005, pp.297-307
70. **Paralel Sistemlerin Performansının Yapay Sinir Ağları ile Değerlendirilmesi**  
Yavuz S.  
BMYS2005 Bilimde Modern Yöntemler Sempozyumu, Kocaeli, Turkey, 16 - 18 November 2005, pp.44-51
71. **Performance Prediction of a 2-Dimensional FFT on Different Platforms Using Neural Networks**  
Yavuz S.  
Int. Symp. On Innovations in Intelligent Systems and Applications, İstanbul, Turkey, 15 - 18 June 2005, pp.136-139

## Academic and Administrative Experience

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2023 - Continues **Head of Department**

Yildiz Technical University, Faculty Of Electrical & Electronics,  
Computer Engineering

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2020 - 2023	<b>Vice Dean</b>	Yildiz Technical University, Faculty Of Electrical & Electronics, Computer Engineering
2020 - 2023	<b>Uygulama ve Araştırma Merkezi Yönetim Kurulu Üyesi</b>	Yildiz Technical University, Faculty Of Electrical & Electronics, Computer Engineering
2011 - 2019	<b>Geçiş Komisyonu</b>	Yildiz Technical University, Faculty Of Electrical & Electronics, Computer Engineering
2009 - 2018	<b>Farabi Program Institutional Coordinator</b>	Yildiz Technical University, Faculty Of Electrical & Electronics, Computer Engineering
2009 - 2011	<b>Deputy Head of Department</b>	Yildiz Technical University, Faculty Of Electrical & Electronics, Computer Engineering
2009 - 2011	<b>Member of ADEK Commission</b>	Yildiz Technical University, Faculty Of Electrical & Electronics, Computer Engineering

## Courses

Bilgisayar Güvenliği ve Kriptografi, Doctorate, 2020 - 2021, 2019 - 2020, 2018 - 2019, 2017 - 2018  
 Robot Teknolojisine Giriş, Undergraduate, 2020 - 2021, 2018 - 2019  
 Derin Öğrenme ve Yapay Sinir Ağları , Doctorate, 2020 - 2021, 2019 - 2020, 2018 - 2019, 2017 - 2018  
 Yapay Sinir Ağları, Postgraduate, 2019 - 2020  
 Bitirme Çalışması BLM9000, Undergraduate, 2018 - 2019  
 Yapay Sinir Ağlarına Giriş, Undergraduate, 2017 - 2018  
 Çok Disiplinli Tasarım Projesi , Undergraduate, 2018 - 2019  
 Mühendislik Matematiği, Undergraduate, 2016 - 2017

## Advising Theses

Yavuz S., A new image cipher using color space transform and Lorenz map, Postgraduate, F.YEŞİM(Student), 2019  
 Yavuz S., İnsansız hava aracı tasarımı ve kontrolü Design and control of unmanned aerial vehicle, Postgraduate, A.SEZGİN(Student), 2017  
 Yavuz S., SMS spam filtering on mobile communication, Postgraduate, I.HUSSAIN(Student), 2017  
 YAVUZ S., Authentication for online voting using physical biometric Biyometrik veriler kullanarak çevrimiçi oylama doğrulama, Postgraduate, S.ADNAN(Student), 2016  
 Yavuz S., Pasif radar uygulamaları, Postgraduate, A.EĞİTMEN(Student), 2015  
 Yavuz S., MOBİL ROBOT SÜRÜLERİ İÇİN DİNAMİK YÖNLENDİRME ALGORİTMALARI, Postgraduate, K.MAHMOODI(Student), 2014  
 Yavuz S., ARAMA KURTARMA AMAÇLI DİFERANSİYEL SÜRÜŞLÜ TEKERLEKLİ ROBOT TASARIMI VE GERÇEKLENMESİ, Postgraduate, F.Çakmak(Student), 2014  
 Yavuz S., Kaos Tabanlı Simetrik Şifreleme Sistemlerinin Tasarım ve Analizi, Doctorate, F.Özkaynak(Student), 2013  
 Yavuz S., Gezgin robotlarla eş zamanlı konum belirleme ve haritalama, Postgraduate, A.HABİBOV(Student), 2011  
 Yavuz S., Robot takımı ile eş zamanlı konum belirleme ve haritalama, Postgraduate, O.Özışık(Student), 2010  
 Yavuz S., Çoklu robot simülasyonu ve kumanda ortamı, Postgraduate, E.Deniz(Student), 2009  
 Yavuz S., Eş zamanlı konum belirleme ve haritalamaya yönelik akıllı algoritmaların geliştirilmesi, Postgraduate, Z.Kurt(Student), 2007

## Patent

Yavuz S., KONUM BELİRLEYEN BİR CİHAZ VE OTONOM BİR HARİTALAMA VE KONUM BELİRLEME YÖNTEMİ, Patent, CHAPTER G Physics, The Invention Registration Number: 2016 20438 , Standard Registration, 2020

## Memberships / Tasks in Scientific Organizations

ACM, Member, 2008 - Continues  
IEEE Computer Society, Member, 2008 - Continues  
EMO, Member, 1991 - Continues

## Scientific Refereeing

Nonlinear Dynamics, SCI Journal, January 2016  
Nonlinear Dynamics, SCI Journal, September 2013  
IEEE/RSJ Int. Conference on Intelligent Robots and Systems, SCI Journal, October 2012  
TURKISH JOURNAL OF ELECTRICAL ENGINEERING & COMPUTER SCIENCES, SCI Journal, May 2011  
Inista 2010, SCI Journal, June 2010  
Inista 2009, SCI Journal, June 2009  
Inista 2008, SCI Journal, June 2008  
Inista 2007, SCI Journal, June 2007

## Scientific Research / Working Group Memberships

OLASILIKSAL ROBOTİK, YILDIZ TEKNİK ÜNİVERSİTESİ, Türkiye, robotics.yildiz.edu.tr, 2006 - Continues

## Metrics

Publication: 97  
Citation (WoS): 306  
Citation (Scopus): 550  
H-Index (WoS): 6  
H-Index (Scopus): 11

## Congress and Symposium Activities

ITURO 2018, Invited Speaker, İstanbul, Turkey, 2018  
Akıllı Sistemlerde Yenilikler ve Uygulamalar (ASYU) Konferansı, Invited Speaker, Antalya, Turkey, 2017

## Research Areas

Computer Sciences, Artificial Intelligence, Computer Learning and Pattern Recognition, Neural Networks, Mechanical Engineering, Machine Theory and Dynamics, Robotics, Engineering and Technology

## Entrepreneurship Activities

Anonymous, Polonom teknoloji sanayi ve ticaret A.Ş, 20 December 2017, Co-Founder

## Non Academic Experience

Polonom Teknoloji Sanayi ve Ticaret A.Ş.