Asst. Prof. Ertuğrul BAYRAKTAR

Personal Information

Fax Phone: +90 212 383 2975

Email: eb@yildiz.edu.tr

Web: https://avesis.yildiz.edu.tr/eb

International Researcher IDs
ScholarID: LM_VCuoAAAAJ
ORCID: 0000-0002-7387-4783
Publons / Web Of Science ResearcherID: A-4705-2015
ScopusID: 57194083975
Yoksis Researcher ID: 29163

Education Information

Post Doctorate, Italian Institute of Technology, The Pattern Analysis and Computer Vision (PAVIS) , Visual Geometry and Modelling (VGM), Italy 2019 - 2020
Doctorate, Istanbul Technical University, Fen Bilimleri Enstitüsü, Mechatronics Engineering, Turkey 2013 - 2018
Postgraduate, Istanbul Technical University, Fen Bilimleri Enstitüsü, Mechatronics Engineering, Turkey 2011 - 2013
Postgraduate, Kadir Has University, Institute Of Science, Finance Engineering, Turkey 2009 - 2011
Undergraduate, Yildiz Technical University, Faculty Of Mechanical Engineering, Deparment Of Mechanical Engineering, Turkey 2005 - 2009

Research Areas

Computer Vision, Computer Learning, Pattern Recognition and Image Processing, Neural Networks, System Dynamics and Control, Robotics, Mechatronics, Modeling and Simulation of Dynamic Systems

Academic Titles / Tasks

Assistant Professor, Yildiz Technical University, Faculty Of Mechanical Engineering, Department Of Mechatronics Engineering, 2021 - Continues

Published journal articles indexed by SCI, SSCI, and AHCI

I. **ReTrackVLM: Transformer-Enhanced Multi-Object Tracking with Cross-Modal Embeddings and Zero-Shot Re-Identification Integration**
BAYRAKTAR E.
Applied Sciences (Switzerland), vol.15, no.4, 2025 (SCI-Expanded)

II. **Visual detection and tracking of lane violations for heavy vehicles**
Mutlukaya I., Can Karakurt R., Cetinkaya S., BAYRAKTAR E.
Neural Computing and Applications, vol.36, no.36, pp.22633-22652, 2024 (SCI-Expanded)

III. **Improving efficiency and cost of ordering algorithms in pathfinding using shell layers**
Allus A., Diab A. M., BAYRAKTAR E.

Expert Systems with Applications, vol.238, 2024 (SCI-Expanded)

IV. **Conditional-pooling for improved data transmission**
BAYRAKTAR E., Yigit C. B.
Pattern Recognition, vol.145, 2024 (SCI-Expanded)

V. **Traffic congestion-aware graph-based vehicle rerouting framework from aerial imagery**
BAYRAKTAR E., Korkmaz B. N., Erarslan A. U., Celebi N.
Engineering Applications of Artificial Intelligence, vol.119, 2023 (SCI-Expanded)

VI. **Improved object reidentification via more efficient embeddings**
BAYRAKTAR E.
Turkish Journal of Electrical Engineering and Computer Sciences, vol.31, no.2, pp.282-294, 2023 (SCI-Expanded)

VII. **Fast re-OBJ: real-time object re-identification in rigid scenes**
Bayraktar E., Wang Y., Delbue A.
MACHINE VISION AND APPLICATIONS, vol.33, no.6, 2022 (SCI-Expanded)

VIII. **Similarity based person re-identification for multi-object tracking using deep Siamese network**
Suljagic H., Bayraktar E., Çelebi N.
NEURAL COMPUTING & APPLICATIONS, vol.34, no.20, pp.18171-18182, 2022 (SCI-Expanded)

IX. **External Force/Torque Estimation With Only Position Sensors for Antagonistic VSAs**
Yigit C. B., BAYRAKTAR E., Kaya O., Boyraz P.
IEEE TRANSACTIONS ON ROBOTICS, vol.37, no.2, pp.675-682, 2021 (SCI-Expanded)

X. **A low-cost UAV framework towards ornamental plant detection and counting in the wild**
Bayraktar E., Basarkan M. E., Celebi N.
ISPRS JOURNAL OF PHOTOGRAMMETRY AND REMOTE SENSING, vol.167, pp.1-11, 2020 (SCI-Expanded)

XI. **Object manipulation with a variable-stiffness robotic mechanism using deep neural networks for visual semantics and load estimation**
Bayraktar E., Yigit C. B., Boyraz P.
NEURAL COMPUTING & APPLICATIONS, vol.32, no.13, pp.9029-9045, 2020 (SCI-Expanded)

XII. **A hybrid image dataset toward bridging the gap between real and simulation environments for robotics: Annotated desktop objects real and synthetic images dataset: ADORESet**
Bayraktar E., Yigit C. B., Boyraz P.
MACHINE VISION AND APPLICATIONS, vol.30, no.1, pp.23-40, 2019 (SCI-Expanded)

XIII. **Low-cost variable stiffness joint design using translational variable radius pulleys**
Yigit C. B., Bayraktar E., Boyraz P.
MECHANISM AND MACHINE THEORY, vol.130, pp.203-219, 2018 (SCI-Expanded)

XIV. **Analysis of feature detector and descriptor combinations with a localization experiment for various performance metrics**
Bayraktar E., Boyraz P.
TURKISH JOURNAL OF ELECTRICAL ENGINEERING AND COMPUTER SCIENCES, vol.25, no.3, pp.2444-2454, 2017 (SCI-Expanded)

Papers Published in Refereed Scientific Meetings

I. **Trajectory refinement in SLAM: the impact of Adam, AdamW, and SGD with momentum**
Akbaci H. A., Bayraktar E.
Fifth Symposium on Pattern Recognition and Applications, İstanbul, Turkey, 11 - 13 November 2024, pp.13540-13546

II. **Advanced Kalman Filter Optimization for Efficient Multi-Object Tracking in Computer Vision**
Bayraktar E.
2024 Innovations in Intelligent Systems and Applications Conference (ASYU), Ankara, Turkey, 16 - 18 October 2024, pp.1-6

III. **Efficient and Reliable Surface Defect Detection in Industrial Products Using Morphology-Based**

Techniques

Bayraktar E.

12th International Symposium on Intelligent Manufacturing and Service Systems, IMSS 2023, İstanbul, Turkey, 26 - 28 May 2023, pp.81-94

IV. **Meyve Bahçesinde Panorama Görüntülerden Derin Öğrenme Tabanlı Elma Tespiti Deep Learning Based Apple Detection from Panorama Images in the Orchard**

PAZARLI E., BAYRAKTAR E.

ELECO 2022, ELEKTRİK-ELEKTRONİK ve BİYOMEDİKAL MÜHENDİSLİĞİ KONFERANSI, Bursa, Turkey, 24 November 2022

V. **Combined GANs and Classical Methods for Surface Defect Detection**

Bayraktar E., Tosun B., Altintas B., Celebi N.

2022 30th Signal Processing and Communications Applications Conference (SIU), Karabük, Turkey, 15 - 18 May 2022, pp.1-4

VI. **Visual Recognition of Objects with CNN and Object Manipulation**

BAYRAKTAR E., YİĞİT C. B., BOYRAZ P.

2017 International Conference on Mechatronics Systems and Control Engineering (ICMSCE 2017), Kayseri, Turkey, 2 - 04 February 2017

VII. **Tailoring the AI for robotics: Fine-tuning predefined deep convolutional neural network model for a narrower class of objects**

BAYRAKTAR E., Yigit C. B., Boyraz P.

2017 International Conference on Mechatronics Systems and Control Engineering, ICMSCE 2017, Kayseri, Turkey, 2 - 04 February 2017, pp.10-14

VIII. **Robotic Arm Control By Fine-Tuned Convolutional Neural Network Model**

Bayraktar E., Yigit C. B., Boyraz P.

25th Signal Processing and Communications Applications Conference (SIU), Antalya, Turkey, 15 - 18 May 2017

Supported Projects

Uysal A., Livatyalı H., Bayraktar E., TUBITAK Project, Real-time Prediction of Tool Wear, Surface Roughness, and Carbon Emissions Based on Power Consumption with a Hybrid Deep Learning-Based Model in Machining Process, 2024 - 2027

Bayraktar E., TUBITAK Project, Kamera Ve Lidar Füzyonu Ile 3b Haritalama Ve Dijital İkiz Çıkarımı, 2024 - 2025

Bayraktar E., TUBITAK Project, Plastik Membranlar İçin Elmendorf Yırtılma, Sürtünme Katsayısı, Oksijen Ve Su Geçirgenliği Test Cihazları, 2024 - 2025

Koyun A., Yılmaz C., Livatyalı H., BAYRAKTAR E., TUBITAK Project, Otomatik Numune Yüklemeli, Video ve Termal Görüntülemeli Yapay Zeka Destekli Robotik Tip Çekme Test Cihazı ve Kontrol Yazılımı, 2021 - 2023

Metrics

Publication: 23
Citation (WoS): 215
Citation (Scopus): 266
H-Index (WoS): 9
H-Index (Scopus): 9

Non Academic Experience

Canovate Endüsti Elektronik ve Mühendislik A.Ş., Ar-Ge Mühendisi