

## Assoc. Prof. Tolga BAKIRMAN

### Personal Information

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### International Researcher IDs

ScholarID: H-Pynx8AAAAJ

ORCID: 0000-0001-7828-9666

Publons / Web Of Science ResearcherID: C-3959-2015

ScopusID: 56247265800

Yoksis Researcher ID: 123574

### Education Information

Doctorate, Yildiz Technical University, Graduate School Of Natural And Applied Sciences, Uzaktan Algılama Ve Cbs, Turkey 2013 - 2019

Postgraduate, Yildiz Technical University, Graduate School Of Natural And Applied Sciences, Uzaktan Algılama Ve Cbs, Turkey 2011 - 2013

Undergraduate, Yildiz Technical University, Faculty Of Civil Engineering, Harita Mühendisliği Bölümü, Turkey 2006 - 2010

### Foreign Languages

English, C1 Advanced

### Dissertations

Doctorate, Investigation of Seagrass Habitat Determination Possibilities using Remote Sensing and Multi Criteria Decision Analysis, Yildiz Technical University, Faculty of Civil Engineering, Geomatic Engineering, 2019

Postgraduate, Web based GIS, street view and virtual reality, Yildiz Technical University, Graduate School Of Natural And Applied Sciences, Uzaktan Algılama Ve Cbs, 2013

### Research Areas

Remote sensing, Image Processing, Engineering and Technology

### Academic Titles / Tasks

Associate Professor, Yildiz Technical University, Faculty Of Civil Engineering, Geomatic Engineering, 2023 - Continues

Assistant Professor, Yildiz Technical University, Faculty Of Civil Engineering, Geomatic Engineering, 2021 - 2023

Medical Doctor, Istanbul Technical University, 2019 - 2021

Research Assistant, Yildiz Technical University, Faculty Of Civil Engineering, Geomatic Engineering, 2010 - 2019

## Academic and Administrative Experience

assistant Secretary General, Yildiz Technical University, Rectorate, 2021 - Continues

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

- I. **Use of Artificial Intelligence Toward Climate-Neutral Cultural Heritage**  
BAKIRMAN T., Kulavuz B., BAYRAM B.  
Photogrammetric Engineering and Remote Sensing, vol.89, no.3, pp.163-171, 2023 (SCI-Expanded)
- II. **Mapping of Glaciers on Horseshoe Island, Antarctic Peninsula, with Deep Learning Based on High-Resolution Orthophoto**  
Selbesoğlu M. O., BAKIRMAN T., Vassilev O., Ozsoy B.  
Drones, vol.7, no.2, 2023 (SCI-Expanded)
- III. **E-mail addresses: bakirman@yildiz.edu.tr (T. Bakirman), iremkomurcubm@gmail.com (I. Komurcu), sertele@itu.edu.tr (E. Sertel). 1 ORCID: 0000-0001-7828-9666 2 ORCID: 0000-0002-3233-1678 3 ORCID: 0000-0003-4854-494X**  
BAKIRMAN T., Komurcu I., Sertel E.  
EXPERT SYSTEMS WITH APPLICATIONS, vol.202, 2022 (SCI-Expanded)
- IV. **Development of sustainable wetland management strategies by using the analytical hierarchy process and web-based GIS: A case study from Turkey**  
BAKIRMAN T., GÜMÜŞAY M. Ü., Musaoğlu N., Tanık A. G.  
TRANSACTIONS IN GIS, vol.26, no.3, pp.1589-1608, 2022 (SSCI)
- V. **Deep neural network approaches for detecting gastric polyps in endoscopic images**  
DURAK S., BAYRAM B., BAKIRMAN T., ERKUT M., Doğan M., GÜRTÜRK M., AKPINAR B.  
Medical and Biological Engineering and Computing, vol.59, pp.1563-1574, 2021 (SCI-Expanded)
- VI. **An ensemble deep learning based shoreline segmentation approach (WaterNet) from Landsat 8 OLI images**  
Erdem F., BAYRAM B., Bakirman T., BAYRAK O. C., AKPINAR B.  
ADVANCES IN SPACE RESEARCH, vol.67, no.3, pp.964-974, 2021 (SCI-Expanded)
- VII. **Implementation of ultra-light UAV systems for cultural heritage documentation**  
Bakirman T., Bayram B., Akpınar B., Karabulut M. F., Bayrak O. C., Yigitoglu A., Şeker D. Z.  
JOURNAL OF CULTURAL HERITAGE, vol.44, pp.174-184, 2020 (SCI-Expanded)
- VIII. **A novel GIS-MCDA-based spatial habitat suitability model for Posidonia oceanica in the Mediterranean**  
Bakirman T., GÜMÜŞAY M. Ü.  
ENVIRONMENTAL MONITORING AND ASSESSMENT, vol.192, no.4, 2020 (SCI-Expanded)
- IX. **A review of seagrass detection, mapping and monitoring applications using acoustic systems**  
Gümüştay M. Ü., Bakirman T., Tüney Kızılkaya İ., Aykut N. O.  
European Journal of Remote Sensing, vol.52, pp.1-29, 2019 (SCI-Expanded)
- X. **Open Source Library-based 3D Face Point Cloud Generation**  
Bayram B., Ozkan T., Reis H. C., Bakirman T., Cetin I., Şeker D. Z.  
CHIANG MAI JOURNAL OF SCIENCE, vol.45, pp.1875-1887, 2018 (SCI-Expanded)
- XI. **Comparison of low cost 3D structured light scanners for face modeling**  
Bakirman T., Gümüştay M. Ü., Reis H. C., Selbesoğlu M. O., Yosmaoglu S., Yaras M. C., Şeker D. Z., Bayram B.  
Applied Optics, vol.56, pp.985-992, 2017 (SCI-Expanded)
- XII. **An assessment of site suitability for marina construction in Istanbul, Turkey, using GIS and AHP multicriteria decision analysis**  
Gümüştay M. Ü., Koseoglu G., Bakirman T.  
ENVIRONMENTAL MONITORING AND ASSESSMENT, vol.188, 2016 (SCI-Expanded)

## Articles Published in Other Journals

- I. **A benchmark dataset for deep learning-based airplane detection: HRPlanes**  
BAKIRMAN T., SERTEL E.  
International Journal of Engineering and Geosciences, vol.8, no.3, pp.212-223, 2023 (ESCI)
- II. **Renewable energy potential within the scope of existing research stations in Antarctica and a preliminary study on the Turkish Research Base**  
YIĞİT Ş., İŞİLER M., BAKIRMAN T., SELBESOĞLU M. O.  
Niğde Ömer Halisdemir Üniversitesi Mühendislik Bilimleri Dergisi, vol.12, no.2, pp.420-431, 2023 (Peer-Reviewed Journal)
- III. **Classification of Skin Lesion Images with Deep Learning Approaches**  
Bayram B., Kulavuz B., Ertugrul B., BAYRAM B., BAKIRMAN T., ÇAKAR T., Dogan M.  
BALTIC JOURNAL OF MODERN COMPUTING, vol.10, no.2, pp.241-250, 2022 (ESCI)
- IV. **Aktarımlı Öğrenme ile SENTINEL-2 Görüntülerinden Kıyı Çizgisi Bölütlemesi**  
Karagöl S., Bayram B., Erdem F., Bakırman T.  
Aktarımlı Öğrenme ile SENTINEL-2 Görüntülerinden Kıyı Çizgisi Bölütlemesi, vol.3, no.1, pp.1-7, 2021 (Peer-Reviewed Journal)
- V. **INTEGRATION OF CUSTOM STREET VIEW AND LOW COST MOTION SENSOR**  
Bakırman T., GÜMÜŞAY M. Ü.  
INTERNATIONAL JOURNAL OF ENGINEERING AND GEOSCIENCES, vol.5, no.2, pp.66-72, 2020 (ESCI)
- VI. **Assessment of Machine Learning Methods for Seagrass Classification in the Mediterranean**  
Bakırman T., Gumusay M. U.  
BALTIC JOURNAL OF MODERN COMPUTING, vol.8, no.2, pp.315-326, 2020 (ESCI)
- VII. **Yıldız Teknik Üniversitesi (YTÜ) Davutpaşa Kampüsü ÖSYM Salon Bilgi Sistemi**  
BAKIRMAN T., GÜMÜŞAY M. Ü.  
hkm Jeodezi Jeoinformasyon Arazi Yönetimi, no.2011, pp.146-149, 2011 (Peer-Reviewed Journal)

## Refereed Congress / Symposium Publications in Proceedings

- I. **Breast lesion detection from DCE-MRI using YOLOv7**  
KULAVUZ B., Cavusoglu M., BAYRAM B., BAKIRMAN T., Sahin S., Araz N., Orhan G., Surmeli H. E., Cakar T.  
International Conference of Computational Methods in Sciences and Engineering 2022, ICCMSE 2022, Hybrid, Heraklion, Greece, 26 - 29 October 2022, vol.3030
- II. **MONITORING OF GLACIERS ON HORSESHOE ISLAND, ANTARCTICA BASED ON A DEEP LEARNING APPROACH FROM HIGH-RESOLUTION ORTHOPHOTOS (TAE-6 & TAE-7)**  
Selbesoğlu M. O., BAKIRMAN T., KARABULUT M. F., Günaydın E., Vassilev O., Oktar Ö., Özsoy B.  
8th International Conference on GeoInformation Advances, GeoAdvances 2024, İstanbul, Turkey, 11 - 12 January 2024, vol.48, pp.321-327
- III. **FOREST SEMANTIC SEGMENTATION BASED ON DEEP LEARNING USING SENTINEL-2 IMAGES**  
Hızal C., Gülsu G., Akgün H., KULAVUZ B., BAKIRMAN T., Aydın A., BAYRAM B.  
8th International Conference on GeoInformation Advances, GeoAdvances 2024, İstanbul, Turkey, 11 - 12 January 2024, vol.48, pp.229-236
- IV. **ENHANCEMENT OF UNDERWATER IMAGES WITH ARTIFICIAL INTELLIGENCE**  
Ertan Z., Korkut B., Gördük G., KULAVUZ B., BAKIRMAN T., BAYRAM B.  
8th International Conference on GeoInformation Advances, GeoAdvances 2024, İstanbul, Turkey, 11 - 12 January 2024, vol.48, pp.149-156
- V. **SMARTPOL AUTONOMOUS NETWORK SYSTEM WITH SPECIALIZED AND INTEGRATED MULTISENSOR TECHNOLOGY FOR DYNAMIC MONITORING OF MARINE POLLUTION**  
VARDAR N., BAYRAM B., ŞENER B., BAKIRMAN T., ARIKAN ÖZDEN Y., Genç N., Boujmil I., Pierucci M., Gatt T., Scerri J., et al.

JPI OCEANS MarTERA Project Meeting, Bruksel, Belgium, 22 November 2023

- VI. **AÇIK MADEN SAHA SINIRLARININ PİKSEL TABANLI VE NESNE TABANLI SINIFLANDIRMA TEKNİKLERİ İLE ÇIKARIMI**  
İNCEKARA A. H., DELEN A., BAKIRMAN T., BAYRAM B., ŞEKER D. Z.  
VII. Uzaktan Algılama-CBS Sempozyumu (UZAL-CBS 2018), 18-21 Eylül 2018, Eskişehir, Eskişehir, Turkey, 18 - 21 September 2018
- VII. **LONG-TERM MONITORING OF WETLANDS VIA REMOTE SENSING AND GIS: A CASE STUDY FROM TURKEY**  
MUSAOĞLU N., Tanık A., GÜMÜŞAY M. Ü., Dervişoğlu A., BİLGİLİOĞLU B., YAĞMUR N., BAKIRMAN T., BARAN D., GÖKDAĞ F.  
2nd International Conference on Climate Change 2018, Colombo, Sri Lanka, 15 - 16 February 2018, vol.2
- VIII. **Benthic Habitat Mapping with Multi Beam Echo Sounder System**  
Gümüşay M. Ü., Bakırman T., Tüney Kızılkaya İ., Aykut N. O.  
INTERNATIONAL ECOLOGY 2018 SYMPOSIUM, Kastamonu, Turkey, 19 - 23 June 2018, pp.434
- IX. **Data reduction for indoor modelling of historical buildingby using terrestrial laser scanning technique**  
BAYRAM B., ŞEKER D. Z., BAKIRMAN T., SELBESOĞLU M. O., ÇATAL REİS H., ESKİÇIRAK D., DURAN Z., DOĞRU A. Ö.  
Sixth International Conferenceon Environmental Management, Engineering, Planning Economics, Selanik, 25 - 30 June 2017, pp.437-438
- X. **Monitoring the Effect of an Impoundment Built for Rehabilitation of Akgol Wetland- Turkey**  
Dervişoğlu A., Musaoğlu N., Tanık A., Şenol A., Gümüşay M. Ü., Bakırman T.  
2nd International Conference on Civil and Environmental Engineering, Nevşehir, Turkey, 08 May 2017, pp.601-610
- XI. **DEFORMATION MEASUREMENT USING TERRESTRIAL LASER SCANNER FOR CULTURAL HERITAGE**  
SELBESOĞLU M. O., BAKIRMAN T., GOKBAYRAK O.  
3rd International GeoAdvances Workshop / ISPRS Workshop on Multi-dimensional and Multi-Scale Spatial Data Modeling, İstanbul, Turkey, 16 - 17 October 2016, pp.89-93
- XII. **DESIGNING AND MODELLING COAST MANAGEMENT GIS FOR BOSPHORUS**  
Gumusay M. Ü., Ozdemir O., Bakırman T.  
23rd Congress of the International-Society-for-Photogrammetry-and-Remote-Sensing (ISPRS), Prague, Czech Republic, 12 - 19 July 2016, vol.41, pp.215-220
- XIII. **MAPPING OF THE SEAGRASS COVER ALONG THE MEDITERRANEAN COAST OF TURKEY USING LANDSAT 8 OLI IMAGES**  
Bakırman T., Gumusay M. U., Tuney I.  
23rd Congress of the International-Society-for-Photogrammetry-and-Remote-Sensing (ISPRS), Prague, Czech Republic, 12 - 19 July 2016, vol.41, pp.1103-1105
- XIV. **Farklı Yöntemlerle Sınıflandırılmış Uydu Görüntülerinin Benzerlik Karşılaştırması**  
BAKIRMAN T.  
5. Uzaktan Algılama-CBS Sempozyumu, İstanbul, Turkey, 14 October 2014
- XV. **Sentetik Açıklık Radar ve Multispektral Uydu Verilerinin Kaynaştırılması ve Sınıflandırılması**  
BAKIRMAN T., BİLGİN G., BALIK ŞANLI F., USLU E., ÜSTÜNER M.  
IEEE 22. Sinyal İşleme ve İletişim Uygulamaları Kurultayı, Trabzon, Turkey, 23 - 25 May 2014
- XVI. **Fusion and Classification of Synthetic Aparture Radar and Multispectral Sattellite Data**  
BAKIRMAN T., BİLGİN G., Sanli F. B., USLU E., ÜSTÜNER M.  
22nd IEEE Signal Processing and Communications Applications Conference (SIU), Trabzon, Turkey, 23 - 25 April 2014, pp.754-757
- XVII. **Edremit Körfezi Kıyı Bilgi Sistemi**  
Akdeniz Y., BAKIRMAN T., GÜMÜŞAY M. Ü.  
CBS Kongresi 2013, Ankara, Turkey, 11 November 2013, pp.1-7
- XVIII. **VISUAL TOUR BASED ON PANAROMIC IMAGES FOR INDOOR PLACES IN CAMPUS**  
Bakırman T.  
22nd Congress of the International-Society-for-Photogrammetry-and-Remote-Sensing, Melbourne, Australia, 25

## Supported Projects

- Bayram B., Bakirman T., Kuzu S. L., Akpınar B., Altuntaş S., İlhan H. O., TÜBİTAK International Bilateral Joint Cooperation Program Project, Sustainable Use and Smart Management of Forests, 2023 - 2025
- Bakirman T., Vardar N., Bayram B., Şener B., Balık Şanlı F., Çelebi U. B., Çoşgun T., Yurtseven A., TÜBİTAK International Multi-Cooperation Project, Autonomous network system with specialized and integrated multi-sensor technology for dynamic monitoring of marine pollution, 2022 - 2025
- Bakirman T., Bayram B., Akpınar B., Doran B., Berilgen M. M., Yüzer N., TUBITAK Project, Sustainable Damage Detection and Monitoring System for Cultural Heritage using Artificial Intelligence, 2022 - 2024
- Selbesoğlu M. O., Karabulut M. F., Yavaşoğlu H. H., Özsoy B., Akpınar B., Bakirman T., Oktar Ö., Yılmaz A., İşiler D. B., TÜBİTAK International Bilateral Joint Cooperation Program Project, Monitoring and 3D Modeling of Glaciers on Antarctic Horseshoe Island with UAV-GPR Observations, 2021 - 2024
- YÜKSEL Y., ÇAKICI F., BEJİ S., BAYRAKTAR D., GÜNER H. A., İŞLEK F., ŞAHİN C., BAYRAM B., AKPINAR B., ÇEVİK E., et al., Project Supported by Higher Education Institutions, Açık Deniz Yüzer Rüzgar Türbinlerinin Hidrodinamik Davranışının Araştırılması, 2021 - 2023
- Bakirman T., Adıyaman H., Varul Y. E., Alkan E., Karaca S. Z., TUBITAK Project, Performing Image Content Control with Deep Learning in Real Estate Applications, 2021 - 2022
- Bakirman T., Sertel E., Project Supported by Higher Education Institutions, Automatic Building Extraction with Deep Learning Techniques, 2020 - 2021
- Musaoğlu N., Tanık A. G., Şenol A., Gümüşay M. Ü., TUBITAK Project, Temporal analysis of Akgöl Wetland and Development of its Management Strategy by Using Analytical Hierarchy Process, 2017 - 2019
- Gümüşay M. Ü., Musaoğlu N., Tanık A. G., Şenol A., Gümüşay A., TUBITAK Project, Akgöl Sulak Alanının Zamansal Analizi AHP ile Yönetim Stratejisinin Geliştirilmesi, 2017 - 2019
- GÜMÜŞAY M. Ü., TÜNEY İ., BAKIRMAN T., AYKUT N. O., Project Supported by Higher Education Institutions, ÇOK BİMLİ İSKANDİL SİSTEMİ İLE DENİZALTI HABİTAT HARİTALAMA, 2015 - 2019

## Scientific Refereeing

- Journal of penal law and criminology, Journal Indexed in ESCI, December 2020
- SIGNAL IMAGE AND VIDEO PROCESSING, SCI Journal, July 2020
- TURKISH JOURNAL OF AGRICULTURE AND FORESTRY, SCI Journal, July 2020
- ESTUARINE COASTAL AND SHELF SCIENCE, SCI Journal, February 2020
- International Journal of Engineering and geosciences, Journal Indexed in ESCI, July 2019
- IEEE JOURNAL OF SELECTED TOPICS IN APPLIED EARTH OBSERVATIONS AND REMOTE SENSING, SCI Journal, June 2019
- MICROWAVE AND OPTICAL TECHNOLOGY LETTERS, SCI Journal, May 2019
- Applied Optics, SCI Journal, August 2017
- JOURNAL OF THE EUROPEAN OPTICAL SOCIETY-RAPID PUBLICATIONS, SCI Journal, June 2017
- Sensor Review, SCI Journal, April 2017
- Ocean and Coastal Management, SCI Journal, March 2017
- ISPRS Journal of Photogrammetry and Remote Sensing, SCI Journal, February 2017

## Tasks In Event Organizations

- Maktav D., Kılıç Gül F., Bayram B., Gümüşay M. Ü., Yastıklı N., Balık Şanlı F., Uzar Dinlemek A. M., Akpınar B., Acar U., Öcalan T., et al., 5. UZAKTAN ALGILAMA-CBS SEMPOZYUMU (UZAL-CBS 2014), Scientific Congress, İstanbul, Turkey, Ekim 2014

Bakırman T., 8th 3D GeoInfo, Scientific Congress, İstanbul, Turkey, Kasım 2013

Bakırman T., Kılıç Gül F., TMMOB 4. Coğrafi Bilgi Sistemleri Kongresi, Scientific Congress, Ankara, Turkey, Kasım 2013

## **Metrics**

Publication: 42

Citation (WoS): 105

Citation (Scopus): 249

H-Index (WoS): 6

H-Index (Scopus): 8

## **Congress and Symposium Activities**

Hydro 2017, Attendee, Rotterdam, Netherlands, 2017

Low Cost 3D, Attendee, Hamburg, Germany, 2017

## **Scholarships**

Seagrass Coverage Mapping using MBES and Satellite Image, TUBITAK, 2017 - 2018

MSc. Research, YOK, 2012 - 2012