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Employment History

- 2025 – ... • **Assistant Professor**, Climate Science and Meteorological Engineering, Samsun University, Türkiye
- 2021 – 2025 • **Assistant Professor**, Geomatic Engineering, Artvin Coruh University, Türkiye
- 2010 – 2020 • **Research Assistant**, Geomatic Engineering, Yıldız Technical University, Türkiye

Education

- 2014 – 2020 • **Ph.D., Geomatic Engineering** in Yıldız Technical University, Türkiye.
Thesis title: *Crop classification with polarimetric synthetic aperture radar images: Comparative analysis (in English)*
- 2011 – 2014 • **M.Sc. Geomatic Engineering** in Yıldız Technical University, Türkiye.
Thesis title: *Comparative sensitivity analysis of kernel parameters for support vector machines on land use classification: A case study of RapidEye and Spot (in Turkish)*.
- 2006 – 2010 • **B.Sc. Geodesy and Photogrammetry Engineering** in Karadeniz Technical University, Türkiye.

Visiting Research

- 2018 – 2019 • **Department of Earth Observation, Institute of Geography** in Friedrich Schiller University, Jena, Germany.
- 2013 – 2013 • **Geospatial Analytics Lab (G-SAL)** in University of South Florida St.Petersburg, St. Petersburg, FL, USA.

Projects

- 2025-2027 • **[Researcher]** Project Title: SylvaSense – Mapping and Monitoring Fagus sylvatica in Türkiye Using Remote Sensing and Machine Learning Techniques [**International- TUBITAK 2515 - COST Action Members R&D Support Program**]
- 2023-2025 • **[Researcher]** Project Title: Monitoring Rice Fields by Joint Use of Multi-temporal SAR and Optical Data for Yield and Growth Estimation [**International- TUBITAK - 2502 - Research Projects- Bilateral Cooperation Support Program with Bulgarian Academy of Sciences (BAS)**]
- 2020-2024 • **[Researcher]** Project Title: Global climate change, sea level Rise, Extreme Events and local ground subsidence effects in coastal and river delta regions through Novel and Integrated remote sensing approaches (GREENISH) [**International- ESA-Most China Programme**]

Miscellaneous Experience

Awards

2018 • **Top 1% of Reviewers in Geosciences**, Publons Peer Review Awards 2018.

Academic Metric

2025 • **Google Scholar**, Citations= 1188, h-index=13 (as of May 30, 2025)

Editorial Board Member

2020 • **Geopanning: Journal of Geomatics and Planning**, Associate Editor

2022 • **European Journal of Remote Sensing**, Taylor & Francis

2023 • **Remote Sensing**, (Special Issue G. Editor) MDPI

2025 • **Turkish Journal of Remote Sensing**, Co-Editor

Organizing Committee Member





2020 • **2020 IEEE International Geoscience and Remote Sensing Symposium (IGARSS 2020)**







2022 • **2022 IEEE Mediterranean and Middle-East Geoscience and Remote Sensing Symposium**

2023 • **2023 IEEE International Geoscience and Remote Sensing Symposium (IGARSS 2023)**

Research Publications

Journal Articles

- 1 H. Catal Reis, V. Turk, C. M. Kaya, M. F. Bozkurt, S. N. Yigit, and **M. Ustuner**, "Multi-scale feature fusion-based deep neural network and two-stage ensemble learning model for crack detection in concrete structures," *Applied Intelligence*, **Under Review**.
- 2 S. Hajaj, A. El Harti, A. B. Pour, Y. Khandouch, **M. Ustuner**, and M. M. Amiri, "Balancing hyperspectral dimensionality reduction and information preservation for machine learning-based lithological classification using enmap hyperspectral imagery," *Remote Sensing Applications: Society and Environment*, **Under Review**.
- 3 F. Yilgan, T. Dogan, **M. Ustuner**, S. Guliyeva, and S. Kaya, "Impact of vegetation density and urbanization on land surface temperature and urban heat islands using remote sensing indices in prague, czech republic," *Modeling Earth Systems and Environment*, **Under Review**.
- 4 H. Catal Reis, V. Turk, **M. Ustuner**, C. M. Kaya, and R. Tatli, "Post-seismic structural assessment: Advanced crack detection through complex feature extraction using pre-trained deep learning and machine learning integration," *Earth Science Informatics*, vol. 18, no. 151, 2025.  DOI: 10.1007/s12145-024-01659-y.
- 5 **M. Ustuner** and F. F. Simsek, "An assessment of training data for agricultural land cover classification: A case study of Bafra, Türkiye," *Earth Science Informatics*, vol. 18, no. 1, p. 7, 2025.  DOI: 10.1007/s12145-024-01555-5.
- 6 F. Yilgan, M. Miháliková, R. S. Kara, and **M. Ustuner**, "Analysis of the forest fire in the 'Bohemian Switzerland' national park using Landsat-8 and Sentinel-5p in Google Earth Engine," *Natural Hazards*, vol. 121, no. 5, pp. 6133–6154, 2025.  DOI: 10.1007/s11069-024-07052-8.
- 7 S. A. Salleh, N. Khalid, N. Danny, *et al.*, "Support vector machine (svm) and object based classification in earth linear features extraction: A comparison," *Revue Internationale de Geomatique*, vol. 33, no. 0, pp. 183–199, 2024.  DOI: <https://doi.org/10.32604/rig.2024.050723>.

- 8 **M. Ustuner**, "Computer processing of remotely-sensed images [book reviews]," *IEEE Geoscience and Remote Sensing Magazine*, vol. 12, no. 3, pp. 207–208, 2024.  DOI: 10.1109/MGRS.2024.3436845.
- 9 M. Zhang, İ. Yiğit, F. Adigüzel, *et al.*, "Impact of urban surfaces on microclimatic conditions and thermal comfort in Burdur, Türkiye," *Atmosphere*, vol. 15, no. 11, 2024, ISSN: 2073-4433.  DOI: 10.3390/atmos15111375.
- 10 Q. Zhao, A. Pepe, V. Zamparelli, *et al.*, "Innovative remote sensing methodologies and applications in coastal and marine environments," *Geo-Spatial Information Science*, vol. 27, no. 3, pp. 836–853, 2024.
- 11 **M. Ustuner**, "Çekirdek tabanlı aşırı öğrenme makinesi ile hiperspektral görüntü sınıflandırma (kernel extreme learning machine for hyperspectral image classification)," *Türk Uzaktan Algılama ve CBS Dergisi (Turkish Journal of Remote Sensing and GIS)*, vol. 4, no. 2, pp. 198–212, 2023.  DOI: 10.48123/rsgis.1237772.
- 12 N. H. Zakaria, N. A. Ishak, S. A. Salleh, *et al.*, "Conceptualizing spatial heterogeneity of urban composition impacts on precipitation within tropics," *International Journal of Sustainable Construction Engineering and Technology*, vol. 14, no. 5, pp. 145–160, 2023.
- 13 A. Ertürk, G. Taskin, A. Ö. Ok, **M. Ustuner**, and K. Kayabol, "2021 IEEE GRSS Turkey chapter activities [chapters column]," *IEEE Geoscience and Remote Sensing Magazine*, vol. 10, no. 1, pp. 352–354, 2022.  DOI: 10.1109/MGRS.2022.3146186.
- 14 S. Madenoğlu, H. Özcan, M. Remzi, *et al.*, "Toprak neminin yarı kurak alanlarda çok zamanlı radarsat-2 verileri ile incelenmesi (analysis of soil moisture in semi-arid areas with multi-temporal radarsat-2 data)," *Jeodezi ve Jeoinformasyon Dergisi (Journal of Geodesy and Geoinformation)*, vol. 9, no. 1, pp. 1–11, 2022.  DOI: 10.9733/JGG.2022R0001.T.
- 15 **M. Ustuner** and F. B. Sanli, "Crop classification from multi-temporal polsar data with regularized greedy forest," *Advanced Remote Sensing*, vol. 1, no. 1, pp. 10–15, 2021.
- 16 **M. Ustuner**, S. Abdikan, G. Bilgin, and F. Balık Şanlı, "Hafif gradyan artırma makineleri ile tarımsal ürünlerin sınıflandırılması (crop classification using light gradient boosting machines)," *Türk Uzaktan Algılama ve CBS Dergisi (Turkish Journal of Remote Sensing and GIS)*, vol. 1, no. 2, pp. 97–105, 2020.
- 17 **M. Ustuner** and F. Balık Şanlı, "Çok zamanlı polarimetrik sar verileri ile tarımsal ürünlerin sınıflandırılması (crop classification using multi-temporal polarimetric sar data)," *Jeodezi ve Jeoinformasyon Dergisi (Journal of Geodesy and Geoinformation)*, vol. 7, no. 1, pp. 1–10, 2020.  DOI: 10.9733/JGG.2020R0001.T.
- 18 R. Nasirzadehdizaji, F. Balık Sanli, S. Abdikan, Z. Cakir, A. Sekertekin, and **M. Ustuner**, "Sensitivity analysis of multi-temporal sentinel-1 sar parameters to crop height and canopy coverage," *Applied Sciences*, vol. 9, no. 4, p. 655, 2019.
- 19 **M. Ustuner** and F. Balık Sanli, "Polarimetric target decompositions and light gradient boosting machine for crop classification: A comparative evaluation," *ISPRS International Journal of Geo-Information*, vol. 8, no. 2, p. 97, 2019.
- 20 M. T. Esetlili, F. B. Balcik, F. B. Sanli, *et al.*, "Comparison of object and pixel-based classifications for mapping crops using rapideye imagery: A case study of menemen plain, Turkey," *International Journal of Environment and Geoinformatics*, vol. 5, no. 2, pp. 231–243, 2018.
- 21 **M. Ustuner** and F. Balık Şanlı, "Evaluating training data for crop type classification using support vector machines and random forests," *Geodetski glasnik*, vol. 51, no. 48, 2017.
- 22 **M. Ustuner**, M. Esetlili, F. Sanli, S. Abdikan, and Y. Kurucu, "Comparison of crop classification methods for the sustainable agriculture management," *J. Environ. Prot. Ecol*, vol. 17, no. 2, pp. 648–655, 2016.

- 23 S. Abdikan, G. Bilgin, F. B. Sanli, E. Uslu, and **M. Ustuner**, "Enhancing land use classification with fusing dual-polarized terrasars-x and multispectral rapideye data," *Journal of Applied Remote Sensing*, vol. 9, no. 1, pp. 096 054–096 054, 2015.
- 24 **M. Ustuner**, F. B. Sanli, and B. Dixon, "Application of support vector machines for landuse classification using high-resolution rapideye images: A sensitivity analysis," *European Journal of Remote Sensing*, vol. 48, no. 1, pp. 403–422, 2015.


Conference Proceedings

- 1 **M. Ustuner**, "Randomized principal component analysis for hyperspectral image classification," in *2024 IEEE Mediterranean and Middle-East Geoscience and Remote Sensing Symposium (M2GARSS)*, 2024, pp. 26–30. DOI: 10.1109/M2GARSS57310.2024.10537329.
- 2 **M. Ustuner**, "Classification of urban areas using gaofen-3 sar data by lightgbm," in *XXIII Conference of PhD Students and Young Scientists*, 2023.
- 3 **M. Ustuner**, "Polarimetrik sar görüntülerinin rotasyon orman algoritması ile sınıflandırılması (classification of polarimetric sar images with rotation forest algorithm)," in *TUFUAB 12. Teknik Sempozyumu*, 2023.
- 4 **M. Ustuner**, "Synergistic use of optical and synthetic aperture radar data for improving land cover classification: A case study for munich," in *8th International Scientific Conference "Telecommunications, Informatics, Energy and Management" – TIEM 2023*, 2023.
- 5 S. R. Reyes, C. Cruz, **M. Ustuner**, C. Jjuuko, and S. Guliyeva, "Creative strategies in navigating the new normal: Advancing the contributions of the isprs student consortium as an international organization," in *XXIV ISPRS Congress (2021 edition)*, vol. V-5-2021, 2021, pp. 23–30. DOI: 10.5194/isprs-annals-V-5-2021-23-2021.
- 6 S. Abdikan, C. Bayik, **M. Ustuner**, and F. Balik Sanli, "Repeat-pass interferometric and backscatter analysis of x-band paz satellite – first results," in *XXIV ISPRS Congress (2020 edition)*, vol. XLIII-B3-2020, 2020, pp. 253–258. DOI: 10.5194/isprs-archives-XLIII-B3-2020-253-2020.
- 7 S. R. Reyes, A. K. Jaojoco, C. Cruz, *et al.*, "The isprs student consortium: Sustaining relevance and creating shared visions for the youth," in *XXIV ISPRS Congress (2020 edition)*, vol. 5, 2020, pp. 39–46. DOI: 10.5194/isprs-annals-V-5-2020-39-2020.
- 8 A. A. Sahin, **M. Ustuner**, and N. M. Pinar, "The impact of environmental factors and tree cover density on allergenic cupressaceae and platanuspollen exposure in urbanized region: Ankara case," in *7th European Symposium on Aerobiology*, 2020, p. 74.
- 9 S. Abdikan, C. Bayik, **M. Ustuner**, and F. Balik Sanli, "An assessment of urban area extraction using alos-2 data," in *9th International Conference on Recent Advances in Space Technologies, RAST2019*, 2019. DOI: 10.1109/RAST.2019.8767819.
- 10 **M. Ustuner** and F. Balik Sanli, "Multitemporal sar classification of urban areas using extremely randomized trees," in *International Symposium on Applied Geoinformatics (ISAG-2019)*, 2019.
- 11 **M. Ustuner** and F. Balik Sanli, "Regularized greedy forests for polarimetric sar image classification," in *XXIX International Symposium on Modern Technologies, Education and Professional Practice in Geodesy and Related Fields*, 2019.
- 12 **M. Ustuner**, F. Balik Sanli, S. Abdikan, E. Erten, and C. Lopez Martinez, "Evaluating the cloude-pottier decomposition for crop classification using multi-temporal radarsat-2 data," in *POLinSAR 2019, 9th International Workshop on Science and Applications of SAR Polarimetry and Polarimetric Interferometry*, 2019.

- 13 **M. Ustuner**, F. B. Sanli, S. Abdikan, G. Bilgin, and C. Goksel, "A booster analysis of extreme gradient boosting for crop classification using polsar imagery," in *2019 8th International Conference on Agro-Geoinformatics*, 2019. DOI: 10.1109/Agro-Geoinformatics.2019.8820698.
- 14 S. Abdikan, A. Sekertekin, **M. Ustuner**, F. Balik Sanli, and R. Nasirzadehdizaji, "Backscatter analysis using multi-temporal sentinel-1 sar data for crop growth of maize in konya basin, Turkey," in *2018 ISPRS TC III Mid-Term Symposium on Developments, Technologies and Applications in Remote Sensing*, vol. 42, 2018, pp. 9–13. DOI: 10.5194/isprs-archives-XLII-3-9-2018.
- 15 F. Balik Sanli, A. Delen, **M. Ustuner**, C. Bayik, and S. Abdikan, "Monitoring urban green space using göktürk-2 data: A case study for edirne city," in *The 2nd International Urban, Environment and Health Congress*, 2018.
- 16 U. Gokdag, **M. Ustuner**, G. Bilgin, and F. B. Sanli, "Kernel extreme learning machines for polsar image classification using spatial features; [uzamsal öznitelikler kullanılarak çekirdek tabanlı aşırı öğrenme makineleri ile polsar görüntüsü sınıflandırılması]," in *26th IEEE Signal Processing and Communications Applications Conference, SIU 2018*, 2018, pp. 1–4. DOI: 10.1109/SIU.2018.8404282.
- 17 **M. Ustuner**, F. Balik Sanli, S. Abdikan, M. T. Esetlili, and G. Bilgin, "An application of roll-invariant polarimetric features for crop classification from multi-temporal radarsat-2 sar data," in *2018 ISPRS Technical Commission I Midterm Symposium on Innovative Sensing - From Sensors to Methods and Applications*, vol. 42, 2018, pp. 451–456. DOI: 10.5194/isprs-archives-XLII-1-451-2018.
- 18 **M. Ustuner**, U. Gokdag, G. Bilgin, and F. B. Sanli, "Comparing the classification performances of supervised classifiers with balanced and imbalanced sar data sets; [egiticili sınıflandırma yöntemlerinin dengeli ve dengesiz sar veri kümelerindeki başarımlarının karşılaştırılması]," in *26th IEEE Signal Processing and Communications Applications Conference, SIU 2018*, 2018, pp. 1–4. DOI: 10.1109/SIU.2018.8404183.
- 19 S. Abdikan, **M. Ustuner**, F. B. Sanli, and G. Bilgin, "Combining landsat and alos data for land cover mapping; [landsat ve alos verilerini kullanarak arazi örtüsü haritasının oluşturulması]," in *2017 25th Signal Processing and Communications Applications Conference, SIU 2017*, 2017. DOI: 10.1109/SIU.2017.7960379.
- 20 **M. Ustuner** and F. Balik Sanli, "Landsat-8 uydu görüntüsü ile arazi örtüsü sınıflandırmasında makine öğrenme algoritmalarının kullanımı," in *16 TÜRKİYE HARİTA BİLİMSEL VE TEKNİK KURULTAYI*, 2017.
- 21 **M. Ustuner**, G. Bilgin, and F. Balik Sanli, "Classification of sentinel-1a sar data using principal component analysis and kernel principal component analysis," in *Proceedings of the International Symposium on GIS Applications in Geography and Geosciences (ISGGG 17)*, 2017.
- 22 **M. Ustuner**, F. B. Sanli, G. Bilgin, and S. Abdikan, "Land use and cover classification of sentinel-1a sar imagery: A case study of istanbul; [sentinel-1a sar görüntüsü ile arazi örtüsü ve kullanımı sınıflandırması: İstanbul örneği]," in *2017 25th Signal Processing and Communications Applications Conference, SIU 2017*, 2017. DOI: 10.1109/SIU.2017.7960373.
- 23 S. Abdikan, F. Balik Sanli, **M. Ustuner**, and F. Calo, "Land cover mapping using sentinel-1 sar data," in *XXIII ISPRS Congress, 12–19 July 2016*, vol. XLI-B7, 2016, pp. 757–761. DOI: 10.5194/isprs-archives-XLI-B7-757-2016.
- 24 **M. Ustuner**, F. Balik Sanli, and S. Abdikan, "Balanced vs imbalanced training data: Classifying rapideye data with support vector machines," in *XXIII ISPRS Congress, 12–19 July 2016*, vol. XLI-B7, 2016, pp. 379–384. DOI: 10.5194/isprs-archives-XLI-B7-379-2016.
- 25 **M. Ustuner**, F. Balik Sanli, and S. Abdikan, "Bitki örtüsü indekslerinin tarımsal ürün deseni tespitindeki etkisinin araştırılması," in *6 Uzaktan Algılama Ve Coğrafi Bilgi Sistemleri Sempozyumu*, 2016.

- 26 F. Balik Sanli, **M. Ustuner**, F. Bektas Balcik, and C. Goksel, "Investigating the influence of training set size for crop type classification using rapideye," in *27th International Cartographic Conference (ICC 2015)*, 2015.
- 27 F. Bektas Balcik, F. Balik Sanli, C. Goksel, and **M. Ustuner**, "Coastal zone detection in istanbul using landsat 8 oli image," in *27th International Cartographic Conference (ICC 2015)*, 2015.  URL: https://icaci.org/files/documents/ICC_proceedings/ICC2015/papers/17/852.html.
- 28 Z. A. Polat, **M. Ustuner**, and M. Alkan, "On the way to vision of cadastre 2034: Cadastre 2014 performance of Turkey," in *FIG Working Week 2015 (FIG 2015)*, 2015.
- 29 **M. Ustuner** and F. Balik Sanli, "Testing the sensitivity of vegetation indices for crop type classification using rapideye imagery," in *FIG Working Week 2015 (FIG 2015)*, 2015.
- 30 **M. Ustuner**, F. Balik Sanli, and S. Abdikan, "Spektral band ve bitki indeksi seçiminin ürün deseni sınıflandırma doğruluğuna etkisi: Karşılaştırmalı analiz," in *TUFUAB 8 Teknik Sempozyumu*, 2015.
- 31 **M. Ustuner** and G. Bilgin, "Mitosis detection on histopathological images using statistical detection algorithms (istatistiksel tespit algoritmaları ile histopatolojik görüntülerde mitoz belirleme)," in *2015 23rd Signal Processing and Communications Applications Conference (SIU)*, 2015, pp. 540–543.  DOI: 10.1109/SIU.2015.7129880.
- 32 T. Bakırman, G. Bilgin, F. Balik Sanli, E. Uslu, and **M. Ustuner**, "Fusion and classification of synthetic aperture radar and multispectral sattellite data," in *2014 22nd Signal Processing and Communications Applications Conference (SIU)*, 2014, pp. 754–757.  DOI: 10.1109/SIU.2014.6830339.
- 33 **M. Ustuner**, F. Balik Sanli, S. Abdikan, M. T. Esetlili, and Y. Kurucu, "Crop type classification using vegetation indices of rapideye imagery," in *ISPRS Technical Commission VII Symposium*, vol. XL-7, 2014, pp. 195–198.  DOI: 10.5194/isprsarchives-XL-7-195-2014.
- 34 **M. Ustuner**, F. Balik Sanli, S. Abdikan, M. T. Esetlili, and Y. Kurucu, "Kirmizi-kenar ve yakın kızılötesi bantlarının tarımsal ürün deseni sınıflandırma doğruluğuna olan etkisinin araştırılması: Rapideye örneği," in *5. Uzaktan Algılama-CBS Sempozyumu (UZAL-CBS 2014)*, 2014.
- 35 F. Balik Sanli, S. Abdikan, M. T. Esetlili, **M. Ustuner**, and F. Sunar, "Fusion of terrasars-x and rapideye data: A quality analysis," in *ISPRS2013-SSG*, vol. XL-7/W2, 2013, pp. 27–30.  DOI: 10.5194/isprsarchives-XL-7-W2-27-2013.
- 36 B. Bayram and **M. Ustuner**, "Yeniden örnekleme sınıflandırma sonucuna etkisi," in *Türkiye Ulusal Fotogrametri ve Uzaktan Algılama Birliği VII. Teknik Sempozyumu (TUFUAB 2013)*, 2013.
- 37 **M. Ustuner**, F. Balik Sanli, F. Bektas Balcik, and M. T. Esetlili, "Destek vektör makineleri tekniği ile sınıflandırma: Rapideye örneği," in *Türkiye Ulusal Fotogrametri ve Uzaktan Algılama Birliği VII. Teknik Sempozyumu (TUFUAB 2013)*, 2013.
- 38 **M. Ustuner** and F. Balik Sanli, "Comparison of neural network and isodata classifiers for land cover assessment using optical data," in *FIG Commission 3 Workshop 2012 Spatial Information, Informal Development, Property and Housing*, 2012.

Books and Chapters

- 1 **M. Ustuner**, F. B. Sanli, and S. Abdikan, "Forest type classification using morphological operators and forest pa method," in *Earth observation advancements in a changing world (Trends in Earth Observation Book Series)*, G. Chirici and M. Gianinetto, Eds., vol. 1, published by Italian Society of Remote Sensing, 2019, pp. 49–52, ISBN: 978-88-944687-1-7.  DOI: 10.978.88944687/17.

References

Available upon request.