

Assoc. Prof. Alper ŞEN

Personal Information

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International Researcher IDs

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Publons / Web Of Science ResearcherID: AAZ-8943-2020

ScopusID: 55865329300

Yoksis Researcher ID: 175191

Biography

Alper SEN obtained his BSc degree in the Department of Geomatic Engineering of Yildiz Technical University, Istanbul Turkey in 2004. He obtained an MSc degree and PhD degree in the Remote Sensing and GIS program at the Department of Geomatic Engineering of Yildiz Technical University in 2007 and 2013, respectively. He had project experiences as a Geomatic Engineer at STFA Surveying Co. in Istanbul from 2005 to 2008. From 2009 to 2014, he was a research assistant at the Department of Geomatic Engineering of Yildiz Technical University. He was awarded a PhD research scholarship by The Scientific and Technological Research Council of Turkey (TUBITAK) and studied from 2011 to 2012 at the Institute of Cartography and Geoinformatics of Leibniz University Hannover in Germany.

Alper Sen is a researcher in the CartoGIS research group at the Department of Geography of Ghent University in Belgium, who is awarded a grant for postdoctoral research by TUBITAK from May 2021 to May 2022.

He is currently working as an associate professor at the Department of Geomatic Engineering of Yildiz Technical University, and specialized in Cartography, Geographic Information Science (GIS), Spatial Statistics, Indoor Navigation, 3D Modelling, Data Mining, Artificial Intelligence, Machine Learning, and Natural Language Processing.

Education Information

Doctorate, Yildiz Technical University, Graduate School Of Natural And Applied Sciences, Remote Sensing and GIS, Turkey 2007 - 2013

Postgraduate, Yildiz Technical University, Graduate School Of Natural And Applied Sciences, Remote Sensing and GIS, Turkey 2004 - 2007

Undergraduate, Yildiz Technical University, Faculty Of Civil Engineering, Geomatic Engineering, Turkey 1999 - 2004

Foreign Languages

English, C1 Advanced

Dissertations

Doctorate, Applicability of Artificial Intelligence Methods for the Selection/Elimination Process to the Stream Networks in

Cartographic Generalization, Yildiz Technical University, Faculty of Civil Engineering, Geomatic Engineering, 2013
Postgraduate, Electromagnetic Field Measurements and Analysis by Using Artificial Neural Network in GIS, Yildiz Technical University, Faculty of Civil Engineering, Geomatic Engineering, 2007

Research Areas

Cartography, Geotechnical Engineering, Geographic Information Systems, Artificial Intelligence, Computer Learning and Pattern Recognition, Natural Language Processing, Neural Networks, Engineering and Technology

Academic Titles / Tasks

Associate Professor, Yildiz Technical University, Faculty Of Civil Engineering, Geomatic Engineering, 2024 - Continues
Assistant Professor, Yildiz Technical University, Faculty Of Civil Engineering, Geomatic Engineering, 2014 - 2024
Research Assistant, Yildiz Technical University, Faculty Of Civil Engineering, Geomatic Engineering, 2009 - 2014

Academic and Administrative Experience

Deputy Head of Department, Yildiz Technical University, Faculty Of Civil Engineering, Geomatic Engineering, 2025 - Continues
Deputy Head of Department, Yildiz Technical University, Faculty of Civil Engineering, Geomatic Engineering, 2017 - 2020

Supervised Theses

Şen A., MAKİNE ÖĞRENME Sİ YÖNTEMLERİ KULLANILARAK GAYRİMENKUL DEĞER TAHMİNİNDE COĞRAFİ REFERANSLI VERİNİN KATKISI, Postgraduate, M.DENİZ(Student), 2024
Şen A., Başaraner A. M., Evaluation of indoor navigation networks using space syntax and multi-criteria decision analysis, Postgraduate, A.BİLGİLİ(Student), 2023
Şen A., Hava lidar verilerinin yapa zeka yöntemleri kullanılarak sınıflandırılması ve filtrelenmesi, Postgraduate, B.Bayash(Student), 2021
Şen A., FARKLI AYRINTI DÜZEYLERİNDE BİNA BİLGİ MODELLERİNİN OLUŞTURULMASI, Postgraduate, S.KAYA(Student), 2019
Şen A., FARKLI ÇÖZÜNÜRLÜKLÜ SAYISAL YÜKSEKLİK MODELLERİNDEN 1:100.000 ÖLÇEKLİ HAVZA SINIRLARININ BELİRLENMESİ, Postgraduate, B.KAYRAN(Student), 2019

Jury Memberships

PhD Thesis Monitoring Committee Member, PhD Thesis Monitoring Committee Member, Yıldız Teknik Üniversitesi, January, 2024
PhD Thesis Monitoring Committee Member, PhD Thesis Monitoring Committee Member, Yıldız Teknik Üniversitesi, April, 2022

Designed Lessons

Doctorate

Şen A., Spatial Statistics, Doctorate, 2017 - 2018

Postgraduate

Şen A., Special Topics in GeoComputation, Postgraduate, 2017 - 2018

Undergraduate

Şen A., Spatial Machine Learning, Undergraduate, 2024 - 2025

Taught Courses And Trainings

Başdoğan S., Şen A., Başaraner A. M., Öz E., Taştan H., Erkmen B., Alp S., Acar Vural R., Gayrimenkulde Yapay Zeka ve Veri Bilimi , 2021 - 2021

Published journal articles indexed by SCI, SSCI, and AHCI

- I. **Evaluating geometric similarities between indoor navigation routes and walking patterns of pedestrians through Geographic Information System and Multi-Criteria Decision Analysis**
Bilgili A., Şen A., Başaraner A. M.
JOURNAL OF THE FACULTY OF ENGINEERING AND ARCHITECTURE OF GAZI UNIVERSITY, vol.39, no.2, pp.1255-1270, 2024 (SCI-Expanded)
- II. **Automatic translation of human route descriptions into schematic maps for indoor navigation**
Şen A., Zhan Z., Winter S., Huang H., Weghe N. V. D.
CARTOGRAPHY AND GEOGRAPHIC INFORMATION SCIENCE, vol.51, no.3, pp.445-461, 2024 (SSCI)
- III. **Comparison of Different Parameters of Feedforward Backpropagation Neural Networks in DEM Height Estimation for Different Terrain Types and Point Distributions**
Sen A., Gumus K.
Systems, vol.11, no.5, 2023 (SSCI)
- IV. **Performance of unsupervised machine learning methods using chi-squared weights for LiDAR point cloud filtering in urban areas**
ŞEN A., SÜLEYMANOĞLU B., SOYCAN M.
JOURNAL OF SPATIAL SCIENCE, vol.68, no.3, pp.397-414, 2023 (SCI-Expanded)
- V. **EVALUATION OF INDOOR PATHS BASED ON INDOOR NAVIGATION NETWORK MODELS AND SPACE SYNTAX MEASURES**
BİLGİLİ A., ŞEN A., BAŞARANER A. M.
GEODETSKI VESTNIK, vol.67, no.1, pp.11-39, 2023 (SSCI)
- VI. **Unsupervised extraction of urban features from airborne lidar data by using self-organizing maps**
ŞEN A., SÜLEYMANOĞLU B., SOYCAN M.
SURVEY REVIEW, vol.52, no.371, pp.150-158, 2020 (SCI-Expanded)
- VII. **A New Algorithm for Cartographic Simplification of Streams and Lakes Using Deviation Angles and Error Bands**
Gökgöz T., Şen A., Memduhoğlu A., Hacı M.
ISPRS INTERNATIONAL JOURNAL OF GEO-INFORMATION, vol.4, pp.2185-2204, 2015 (SCI-Expanded)
- VIII. **An experimental approach for selection/elimination in stream network generalization using support vector machines**
Sen A., Gokgoz T.
GEOCARTO INTERNATIONAL, vol.30, pp.311-329, 2015 (SCI-Expanded)
- IX. **Model generalization of two different drainage patterns by self-organizing maps**
Şen A., Gökgöz T., Sester M.
CARTOGRAPHY AND GEOGRAPHIC INFORMATION SCIENCE, vol.41, pp.151-165, 2014 (SSCI)
- X. **Comparison of Spatial Interpolation Methods and Multi-Layer Neural Networks For Different Point Distributions on a Digital Elevation Model**
Gümüş K., Şen A.
GEODETSKI VESTNIK, vol.57, no.3, pp.523-543, 2013 (SSCI)

- XI. **Programming an Artificial Neural Network tool for spatial interpolation in GIS - A case study for indoor radio wave propagation of WLAN**
Şen A., Guemesay M. Ü., Kavas A., Bulucu U.
SENSORS, vol.8, pp.5996-6014, 2008 (SCI-Expanded)

Articles Published in Other Journals

- I. **Coğrafi referanslı sosyal medya verilerinden doğal dil işleme ve derin öğrenme kullanılarak duygu analizi: Kahramanmaraş depremleri örneği**
Dolu D. G., Şen A.
Jeodezi ve jeoinformasyon dergisi (Online), vol.11, no.1, pp.51-67, 2024 (Peer-Reviewed Journal)
- II. **İç mekân harita yapımı için makine öğrenmesiyle nokta bulutlarının sınıflandırılması**
VARBİL S., ŞEN A.
Jeodezi ve jeoinformasyon dergisi (Online), vol.11, pp.30-40, 2024 (Peer-Reviewed Journal)
- III. **Indoor navigation network models: A comparative investigation**
Bilgili A., Şen A., Başaraner A. M.
Jeodezi ve Jeoinformasyon Dergisi, vol.9, no.2, pp.108-126, 2022 (Peer-Reviewed Journal)
- IV. **Hava Lidar verilerinin denetimsiz yapay sinir ağları kullanılarak filtrelenmesi**
Şen A., Bayaşlı B.
Jeodezi ve Jeoinformasyon Dergisi, vol.8, no.1, pp.18-29, 2021 (Peer-Reviewed Journal)
- V. **Comparison of Past and Present Maps of Istanbul Historic Peninsula in GIS, Based on the Insurance Maps of Jacques Pervititch**
Şen A.
e-Perimetron, vol.15, no.3, pp.183-198, 2020 (Peer-Reviewed Journal)
- VI. **Sayısal Yükseklik Modellerinin Doğruluğunu Etkileyen Faktörlerin Varyans Analizi İle İstatistiksel Olarak İncelenmesi**
Gümüş K., Şen A.
Ömer Halisdemir Üniversitesi Mühendislik Bilimleri Dergisi, vol.6, no.1, pp.46-58, 2017 (Peer-Reviewed Journal)
- VII. **Realization of Earthquake Vulnerability Analysis in Structure Scale with Fuzzy Logic Method in GIS: Kadikoy, Maltepe and Prince Islands Sample**
Şen A., Ekinci V.
International Journal of Environment and Geoinformatics, vol.3, no.3, pp.40-56, 2016 (Peer-Reviewed Journal)
- VIII. **Integration of integer programming with GIS analyzing abilities for determining the convenience levels of retail stores**
Önden İ., Şen C., Şen A.
Procedia-Social and Behavioral Sciences, vol.62, pp.1144-1149, 2012 (Peer-Reviewed Journal)

Books

- I. **Genç Kuşak Haritacıların Yüzyıla Bakışı**
SELÇUK M., BAŞARANER A. M., ŞEN A.
in: YTÜ'nün Türk Haritacılığına Katkıları, Mehmet SELÇUK, Editor, Yıldız Teknik Üniversitesi Basım-Yayın Merkezi, İstanbul, pp.181-196, 2014

Papers Published in Refereed Scientific Meetings

- I. **Landmark-Based Indoor Navigation Model through Human Route Descriptions**
Şen A.

European Cartographic Conference – EuroCarto 2024, Vienna, Austria, 9 - 11 September 2024, vol.7, no.148, pp.1-2

- II. **Coğrafi Referanslı Sosyal Medya Verilerinden Doğal Dil İşleme Ve Derin Öğrenme Kullanılarak Duygu Analizi: Kahramanmaraş Depremleri Örneği**
Dolu D. G., Şen A.
YTU Grad Colloquium'24, İstanbul, Turkey, 4 June - 04 September 2024, pp.48
- III. **Integration of Landmarks Extracted from Human Route Descriptions Using NLP into Indoor Navigation Network Model**
Şen A.
9th INTERNATIONAL CONFERENCE ON CARTOGRAPHY & GIS, Burgas, Bulgaria, 16 - 21 June 2024, pp.955-961
- IV. **Indoor Mapping Using Machine Learning Based Classification of 3D Point Clouds**
Şen A., Bilgili A.
18th International Conference on Location Based Services (LBS 2023), Ghent, Belgium, 20 - 22 November 2023, pp.77-81
- V. **A Framework for Automatic Selection of Indoor Landmarks using Machine Learning Algorithms and Shapley Additive Explanations**
Bilgili A., Şen A.
18th International Conference on Location Based Services (LBS 2023), Ghent, Belgium, 20 - 22 November 2023, pp.25-30
- VI. **Analysis of Social Media Data of Kahramanmaraş Earthquakes in Geographic Information Systems**
Dolu D. G., Şen A.
19. Türkiye Harita Bilimsel ve Teknik Kurultayı, Ankara, Turkey, 4 - 06 October 2023, pp.1
- VII. **Classification of Indoor Point Clouds using Machine Learning Methods**
Varbil S., Şen A.
19. Türkiye Harita Bilimsel ve Teknik Kurultayı, Ankara, Turkey, 4 October - 06 November 2023, pp.1
- VIII. **Real Estate Value Prediction Using Machine Learning Methods**
Ayar M. D., Şen A.
19. Türkiye Harita Bilimsel ve Teknik Kurultayı, Ankara, Turkey, 4 - 06 October 2023, pp.1
- IX. **İç Mekân Navigasyon Rotaları ve Yayaların Yürüme Örüntüleri Arasındaki Geometrik Benzerliklerin Değerlendirilmesi**
Bilgili A., Şen A., Başaraner A. M.
7. Coğrafi Bilgi Sistemleri Kongresi (CBS 2022), Ankara, Turkey, 3 - 05 October 2022, pp.1
- X. **Investigation of Indoor Navigation Network Models**
Bilgili A., Şen A., Başaraner A. M.
18. Türkiye Harita Bilimsel ve Teknik Kurultayı, Ankara, Turkey, 26 - 29 May 2021, pp.1
- XI. **Deprem Hasar Görebilirliğin Analitik Hiyerarşi Süreci Kullanılarak CBS Ortamında Belirlenmesi**
Kaya G., Şen A., Acar U.
18. Türkiye Harita Bilimsel ve Teknik Kurultayı, Ankara, Turkey, 26 - 29 May 2021, pp.1
- XII. **Hava Lidar Verilerinin Yapay Sinir Ağları Kullanılarak Sınıflandırılması**
Bayaslı B., Şen A.
TMMOB Harita ve Kadastro Mühendisleri Odası, 17. Türkiye Harita Bilimsel ve Teknik Kurultayı, Ankara, Turkey, 25 April - 27 July 2019
- XIII. **SAYISAL YÜKSEKLİK MODELLERİ KULLANILARAK HAVZA SINIRLARININ BELİRLENMESİ ve İSTATİSTİKSEL OLARAK KARŞILAŞTIRILMASI**
KAYRAN B., ŞEN A.
6th INTERNATIONAL CONGRESS ON MATHEMATICS, ENGINEERING, NATURAL AND MEDICAL SCIENCES, Adana, Turkey, 08 March 2019, pp.70-84
- XIV. **3B-CBS için 3B Kapalı Alan Navigasyonu**
BEŞİKTEPE M., GÜLCEMAL E., KAYA M. F., ŞEN A.
VII. Uzaktan Algılama CBS Sempozyumu (UZAL-CBS 2018), Eskişehir, Turkey, 18 September 2018, pp.19-20
- XV. **Spatial Statistics for Model Generalization of Stream Networks in GIS**

ŞEN A.

Çanakkale Onsekiz Mart University International Symposium on GIS Applications in Geography & Geosciences, Çanakkale, Turkey, 18 October 2017

- XVI. **COMPARISON OF TWO SIMPLIFICATION METHODS FOR SHORELINE EXTRACTION FROM DIGITAL ORTHOPHOTO IMAGES**
BAYRAM B., ŞEN A., SELBESOĞLU M. O., Varna I., Petersons P., AYKUT N. O., SEKER D. Z.
4th International Workshop on GeoInformation Science, Karabük, Turkey, 14 October 2017, pp.1-5
- XVII. **Comparison of past and present maps of Istanbul historic peninsula in GIS, based on the insurance maps of Jacques Pervititch**
ŞEN A.
12th ICA Conference Digital Approaches to Cartographic Heritage, Venedik, Italy, 26 April 2017, pp.15-28
- XVIII. **Determining Weights of the Attributes in the Model Generalization of River Networks**
Şen A., Gökgöz T.
26th International Cartographic Conference, Dresden, Germany, 25 - 30 August 2013
- XIX. **Effects of Normalization in Clustering**
Şen A., Gökgöz T.
14. Türkiye Harita Bilimsel ve Teknik Kurultayı, Ankara, Turkey, 14 - 17 May 2013
- XX. **Applicability of Artificial Neural Network Methods for Selection Elimination in Hydrographic Generalization**
Şen A., Gökgöz T.
YTÜ İnşaat Fakültesi Bilim Şenliği, İstanbul, Turkey, 21 - 22 May 2012
- XXI. **CLUSTERING APPROACHES FOR HYDROGRAPHIC GENERALIZATION**
ŞEN A., GÖKGÖZ T.
9th International Symposium on Surface Models for Geosciences (GIS), Ostrava, Czech Republic, 23 - 25 January 2012, pp.241-260
- XXII. **Hydrographic Selection Elimination in Automated Generalization by Using Artificial Neural Networks**
Şen A., Gökgöz T.
25th International Cartographic Conference, Paris, France, 3 - 08 July 2011
- XXIII. **A GIS Approach to Fire Station Location Selection**
Şen A., İsmail Ö., Gökgöz T., Şen C.
4th International Symposium on Geo-information for Disaster Management, Gi4DM 2011, Antalya, Turkey, 3 - 08 May 2011
- XXIV. **Electromagnetic Coverage Calculation in GIS", The 5th International Symposium on Mobile Mapping Technology**
Şen A., Gümüşay M. Ü.
The 5th International Symposium on Mobile Mapping Technology, Padua, Italy, 29 - 31 May 2007

Supported Projects

Karaca S. Z., Şen A., Salın F. T., TUBITAK Project, İç Mekan Nokta Bulutlarının Üretilmesi ve Makine Öğrenimi Yöntemleriyle Sınıflandırılması ile Otomatik Olarak İç Mekân Harita Üretimi: Yıldız Teknik Üniversitesi Davutpaşa Kampüsü Örneği, 2023 - 2024

Acar U., Şen A., Akpınar B., Bilgili A., Project Supported by Higher Education Institutions, Development of Smart Campus Infrastructure Based on Indoor Positioning Systems Yıldız Technical University Davutpaşa Campus Sample, 2021 - 2023
Gökgöz T., Başaraner A. M., Yücel M. A., Gülgen F., Çetinkaya S., Şen A., Project Supported by Higher Education Institutions, Generalization of Hydrographic Objects in Topographic Databases and Maps Based on Object-Oriented and Multi-Agent Approach, 2007 - 2010

Activities in Scientific Journals

Jeodezi ve jeoinformasyon dergisi (Online), Committee Member, 2024 - Continues

Peer Reviews in Scientific Publications

ROBOTICS AND AUTONOMOUS SYSTEMS, Journal Indexed in SCI-E, February 2025
SMART AND SUSTAINABLE BUILT ENVIRONMENT, Journal Indexed in ESCI, January 2025
GEOMATİK, National Scientific Refreed Journal, December 2024
BMC PUBLIC HEALTH, Journal Indexed in SCI-E, November 2024
JOURNAL OF LOCATION BASED SERVICES, Journal Indexed in ESCI, October 2024
Advances in Geodesy and Geoinformation, Journal Indexed in ESCI, October 2024
PROFESSIONAL GEOGRAPHER, Journal Indexed in SSCI, April 2024
JOURNAL OF LOCATION BASED SERVICES, Journal Indexed in ESCI, March 2024
Türkiye Coğrafi Bilgi Sistemleri Dergisi, National Scientific Refreed Journal, December 2023
Environmental Modelling and Software, Journal Indexed in SCI-E, June 2023
CARTOGRAPHY AND GEOGRAPHIC INFORMATION SCIENCE, Journal Indexed in SSCI, May 2023
TRANSACTIONS IN GIS, Journal Indexed in SSCI, May 2023
PROFESSIONAL GEOGRAPHER, Journal Indexed in SSCI, April 2023
ENVIRONMENT AND PLANNING B-URBAN ANALYTICS AND CITY SCIENCE, Journal Indexed in SSCI, March 2022
Jeodezi ve jeoinformasyon dergisi (Online), National Scientific Refreed Journal, December 2021
Estoa, Journal Indexed in ESCI, December 2021
CARTOGRAPHY AND GEOGRAPHIC INFORMATION SCIENCE, Journal Indexed in SCI-E, October 2021
ARABIAN JOURNAL OF GEOSCIENCES, Journal Indexed in SCI-E, July 2021
ARABIAN JOURNAL OF GEOSCIENCES, Journal Indexed in SCI-E, May 2021
ARABIAN JOURNAL OF GEOSCIENCES, Journal Indexed in SCI-E, February 2021
INTERNATIONAL JOURNAL OF ENGINEERING AND GEOSCIENCES, Journal Indexed in ESCI, October 2020
Geocarto International, Journal Indexed in SCI-E, September 2020
INTERNATIONAL JOURNAL OF ENGINEERING AND GEOSCIENCES, Journal Indexed in ESCI, May 2020
Geocarto International, Journal Indexed in SCI-E, August 2019
Geocarto International, Journal Indexed in SCI-E, July 2019
Geomatik, National Scientific Refreed Journal, November 2018
Geocarto International, Journal Indexed in SCI-E, October 2018
INTERNATIONAL JOURNAL OF ENGINEERING AND GEOSCIENCES, Journal Indexed in ESCI, October 2018
INTERNATIONAL JOURNAL OF ENGINEERING AND GEOSCIENCES, Journal Indexed in ESCI, August 2018
Geomatik, National Scientific Refreed Journal, June 2017
Geocarto International, Journal Indexed in SCI-E, June 2016
Geocarto International, Journal Indexed in SCI-E, February 2016
Geocarto International, Journal Indexed in SCI-E, December 2015
Geocarto International, Journal Indexed in SCI-E, June 2015
Geocarto International, Journal Indexed in SCI-E, March 2014
Geocarto International, Journal Indexed in SCI-E, February 2014

Scientific Project Refereeing

Technopark, October 2021

Technopark, April 2020

Tasks In Event Organizations

Şen A., TMMOB 8. Coğrafi Bilgi Sistemleri Kongresi, Scientific Congress, Ankara, Turkey, Kasım 2024

Şen A., 8th International Conference on GeoInformation Advances: GeoAdvances 2024, Scientific Congress, İstanbul, Turkey, Ocak 2024

Scientific Research / Working Group Memberships

Coğrafi Yapay Zeka Araştırma Merkezi, Universiteit Gent, Belçika, <https://geoai.ugent.be/>, 2024 - Continues

Metrics

Publication: 44

Citation (WoS): 41

Citation (Scopus): 74

H-Index (WoS): 5

H-Index (Scopus): 6

Scholarships

2219-International Postdoctoral Research Fellowship Program (Ghent University, Department of Geography, Cartography and GIS Research Group - Belgium), TÜBİTAK, 2021 - 2022

2214-A - International Research Fellowship Program for PhD Students (Leibniz University Hannover, Institute of Cartography and Geoinformatics - Germany), TÜBİTAK, 2011 - 2012

Awards

Bilgili A., Şen A., Başaraner A. M., Kısa Video Sunum Yarışması 3.' lük ödülü, 18. Türkiye Harita Bilimsel Ve Teknik Kurultayı, May 2021

Şen A., Horizon 2020 Above-Threshold-Awards, Tübitak, July 2020

Non Academic Experience

Ministry, Tarım ve Orman Bakanlığı, Su Yönetimi Genel Müdürlüğü, 1. Su Şurası Su Kaynaklarının Yönetiminde Karar Destek Sistemleri Çalışma Grubu Komisyon Üyesi

STFA Harita A.Ş., Harita Mühendisi

Nizamoğlu Mühendislik, Harita Mühendisi