

Curriculum Vitae

Alper Yilmaz, PhD

Professor

Civil, Environmental and Geodetic Engineering
The Ohio State University

Personal statement

Dr. Yilmaz is Professor with appointments in Civil Environmental and Geodetic Engineering and Computer Science and Engineering (courtesy) Departments at The Ohio State University. He has been inducted to the U.S. National Academy of Inventors in 2020, is a *Fellow* of the American Society for Photogrammetry and Remote Sensing (ASPRS) and is a senior member of IEEE. Dr. Yilmaz is currently president for the ISPRS Technical Commission II. He is serving as Editor-In-Chief for the *Photogrammetric Engineering and Remote Sensing Journal*. During his leadership of the PE&RS journal, the impact factor has increased to its highest since its first volume in 1934. In 2019, PE&RS was ranked 19th most downloaded journal among all 11,000 titles on Ingenta Connect Platform. He has served as Associate Editor for the *Computer Vision and Image Understanding Journal* between 2014 and 2016 and the *Machine Vision and Applications Journal* between 2006 and 2011.

Based on a recent study from Stanford University and Elsevier¹ (published on October 4, 2023), Dr. Yilmaz is listed among the top 2% most cited researchers in the fields of “Artificial Intelligence & Image Processing” and “Geological & Geomatics Engineering” in both career-long (1960-2023) and single year (2023) categories. The ranking covers 22 major fields and 176 subfields.

Dr. Yilmaz’s research focuses on biomimetic navigation systems for unmanned systems, mining anomalies in multi-physics and multi-dimensional data for surveillance and learning geospatial information for scene understanding. On these topics, he has organized several conferences in the fields of Photogrammetry, Remote Sensing and Computer Vision. Dr. Yilmaz’s research has received over \$13M in extramural funding from NIH, NASA, NSF, DOD, DOE, and industry which resulted in over 200 publications and patents that received close to 14,000 citations².

His recent research has resulted in a successful start-up, UbiHere Inc., which is an Ohio State University spin-off. He founded UbiHere in 2018 and is serving as the board member and CTO since its launch. After the initial seed funding, Series A funding and government contract, UbiHere designed hardware and software products UbiTrax, UbiVision and UbiStats are being used across the nation for tracking and localization of assets and personnel.

Dr. Yilmaz has selected to the hall of *Innovation Superstars* by College of Engineering at OSU in 2023, he has been awarded the *Outstanding Service Award* in 2022 by the American Society

¹ Ioannidis, John P.A. (2023), “October 2023 data-update for "Updated science-wide author databases of standardized citation indicators"”, Elsevier Data Repository, V6, <http://doi.org/10.17632/btchxktzyw.6>

² <https://scholar.google.com/citations?user=MeQC1XYAAAAJ>

for Photogrammetry and Remote Sensing, the *Innovator of Year* (OSU) – annually given only to one faculty across the university – in 2020, *Presidential citation* in 2019 from the American Society for Photogrammetry and Remote Sensing, honorable mention for the *Masao Horiba Award* (Japan) in 2016, the *Lumley Interdisciplinary Research Award* (OSU) in 2015, and the *Lumley Research Award* (OSU) in 2012. He has advised 25 PhD and 15 M.Sc. students to completion on topics ranging from photogrammetry, machine learning and computer vision who have found position in prominent academic institutions, industry, and the government.

Contact Information

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URL: <https://u.osu.edu/pcvlab>

Online Professional Profiles

Google Scholar	https://scholar.google.com/citations?user=MeQC1XYAAAAJ&hl=en
LinkedIn	https://www.linkedin.com/in/alper-yilmaz-b745761
Research Gate	https://www.researchgate.net/profile/Alper_Yilmaz3
Semantic Scholar	https://www.semanticscholar.org/author/Alper-Yilmaz/1858702
ORCID	https://orcid.org/0000-0003-0755-2628

Positions

6/2018 – present	Founder, Board Member, CTO , Ubihere Inc.
6/2017 – present	Professor , Civil, Environmental and Geodetic Engineering, The Ohio State University
6/2017 – present	Professor (by courtesy), Computer Science and Engineering, The Ohio State University
9/2012 – 6/2017	Associate Professor (by courtesy), Computer Science and Engineering, The Ohio State University
9/2006 – 8/2012	Assistant Professor , Civil, Environmental and Geodetic Engineering, The Ohio State University
9/2010 – 8/2012	Assistant Professor (by courtesy), Computer Science and Engineering, The Ohio State University
8/2004 – 5/2006	Visiting Assistant Professor , Computer Science, Univ. Of Central Florida
1/2000 – 8/2004	Graduate Research Associate , Computer Science, Univ. Of Central Florida

Degrees

8/2004	Ph.D. , University of Central Florida, Computer Science <i>Advisor:</i> Mubarak Shah, PhD
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	<i>Dissertation title:</i> Object Tracking and Activity Recognition in Video Acquired Using Mobile Cameras
5/2001	M.S. , University of Central Florida, Computer Science
9/1999	M.E. , Istanbul Technical University, Computer Engineering <i>Advisor:</i> Muhittin Gokmen
	<i>Thesis title:</i> Face Recognition Using Eigenhills
5/1997	B.S. , Yildiz Technical University, Computer Science and Engineering

Honors & Awards

1/2023	Cohort Member, OSU Growing Research Opportunities (GRO) Academy
2/2022	Outstanding Service Award. American Society for Photogrammetry and Remote Sensing
5/2022	Inclusive Excellence Certificate, College of Engineering, OSU
2/2021	Fellow. American Society for Photogrammetry and Remote Sensing
9/2020	Innovator of the Year. The Ohio State University
1/2020	Senior Member. National Academy of Inventors
2/2019	ASPRS Presidential Citation. American Society for Photogrammetry and Remote Sensing
7/2016	Honorable Mention. International Dr. Masao Horiba Award. Horiba Ltd., Japan
4/2015	Lumley Interdisciplinary Research Award. College of Engineering. The Ohio State University
7/2013- 2/2015	Member, OSU President and Provost's Leadership Institute. The Ohio State University
10/2013	Senior Member, The Institute of Electrical and Electronics Engineers (IEEE).
4/2012	Lumley Research Award. College of Engineering. The Ohio State University
11/2008	Duane C. Brown Photogrammetry Senior Award. The Ohio State University
3/2004	Hillman Fellowship for Excellence in Research. Computer Science Department. University of Central Florida (\$2,000)
4/2001	Merit Graduate Fellowship. University of Central Florida (\$1,000)
3/2000	Merit Graduate Fellowship. University of Central Florida (\$1,000)
5/1999	Honors Fellowship for Academic Excellence. Turkish Informatics Foundation (\$10,000.00)

Advised Graduate Students

Post-Doctoral Fellows

1. 3/2015-6/2017 **Ashish Gupta**
2. 9/2013-8/2014 **Polun (Ryan) Lai**

Current Doctoral students (Dissertation Advisor)

1. 8/2020-present **Shehan Parera** (*candidate*) (electrical and computer engineering)
2. 1/2016-present **Michael Karnes** (*candidate*) (civil env. and geodetic engineering)
3. 3/2021-present **Pouyan Boreshnavard** (*candidate*) (civil env. and geodetic engineering)

4. 8/2021-present **Yuci Han** (*candidate*) (electrical and computer engineering)
5. 8/2024-present **Yunus Erzurumlu** (electrical and computer engineering)
6. 8/2024-present **Gokce Inal** (civil env. and geodetic engineering)
7. 9/2019-present **Gulcin Sarici Turkmen** (*candidate*, nuclear engineering) (co-advised with Dr. Tunc Aldemir)

Completed Doctoral students (Dissertation Advisor)

1. 9/2019-12/2024 **Jianli Wei** Enabling Platform Agnostic Situational Awareness using Machine Learning and View Geometry. OSUMC, Columbus OH.
2. 1/2019-6/2022 **Yongsheng (Mike) Bai** Deep Learning with Vision-based Technologies for Structural Damage Detection and Health Monitoring. Startup, Seattle WA.
3. 8/2017-8/2021 **Bing Zha**. Map-Based Trajectory Learning for Geolocalization using Deep Learning. Motorola Research, Boston MA.
4. 8/2014-12/2019 **M. Taha Koroglu**. Multiple Hypothesis Testing Approach to Pedestrian Inertial Navigation with Non-recursive Bayesian Map-matching, Assistant Prof. Gumushane Univ.
5. 8/2015-8/2019 **Nima Ajam Gard**. Human Contour Detection and Tracking: A Geometric Deep Learning Approach. Research Scientist, Path Robotics Inc., Columbus OH.
6. 9/2016-12/2018 **Ji Hyun Lee**. Development of a Tool to Assist the Nuclear Power Plant Operator in Declaring a State of Emergency Based on the Use of Dynamic Event Trees and Deep Learning Tools. Researcher, Samsung, South Korea.
7. 1/2013-12/2018 **Yujia Zhang**. A Structured-Light Based 3D Reconstruction Using Combined Circular Phase Shifting Patterns. Postdoctoral Fellow, York University, Canada.
8. 1/2017-8/2018 **Oliver Nina**. MTLE: A Multitask Learning Encoder-N-Decoder Framework for Temporal-Visual Features for Movie and Video Descriptions. Researcher, US Air Force Research Lab.
9. 9/2013-6/2017. **Changlin Xiao**. Visual Tracking with an Application to Augmented Reality. Postdoc, ETH Singapore Campus.
10. 3/2014-3/2017. **Sagar Deshpande**. Semi-automated methods to create a hydro-flattened DEM using Single Photon and Linear Mode LiDAR. Tenure Track Assistant Professor, Pennsylvania State Univ.
11. 1/2013-5/2016. **Siavash HosseinyAlamdary**. Traffic Scene Perception using Multiple Sensors for Vehicular Safety Purposes. Current Position: Tenure Track Assistant Professor, Univ. of Twente, Netherlands.
12. 1/2014-11/2015. **Anuchit Sukcharoenpong**. Shoreline Mapping with Integrated HSI-DEM using Active Contour Method. Current Position: Geospatial Information Researcher, Geoinformation and Space Technology Development Agency, Thailand Government.
13. 12/2012-5/2015. **Ding Li**. "ESA ExoMars PanCam Vision System Geometric Modeling and Evaluation." Current Position: Research Scientist, Amazon Inc.
14. 1/2010-5/2014. **Daniya Zamalieva**. "Transformational Models for Background Subtraction in Moving Cameras." Current Position: Research Scientist, Amazon A9. (co-advised with J. Davis)
Holds the following patents: US10026229B1
15. 0/2009-19/2014. **Young Jin Lee**. "Real-Time Object Motion and 3D Localization from Geometry." Current Position: Research Scientist, Trimble Inc.
16. 1/2010-12/2013. **Bernard Abayowa**. "Automatic Registration of Optical Aerial Imagery to a LIDAR Point Cloud for Generation of Large Scale City Models" (co-advised with R. Hardy at the Univ. of Dayton)
Current Position: Lead Data Scientist Dayton Univ.
17. 8/2008-12/2013. **Heewon Lee**. "Exploiting dichromatic reflection model of an imaged object." (co-advised with H. Hemami)
18. 1/2008-12/2013. **Mohammed Al-Shahri**. "Line Matching in a Wide-Baseline Stereo-View." Current Position: Tenure track faculty at Sultan Qaboos University, Oman.
19. 6/2009-7/2013. **Kyoungjin Park**. "Generating Thematic Maps from Hyperspectral Images Using A Bag-of-Materials Model." Object Video, Computer Vision Research Scientist.
20. 8/2007-12/2012. **Jinwei Jiang**. "Collaborative Tracking of Image Features Based on Projective Invariance." Current Position: Research Scientist at Ford Motor Inc.
Holds the following patents: US9936181B2
21. 4/2008-8/2012. **Panu Srestasathiern**. "Line Based Estimation of Object Space Geometry and Camera

Motion.” Current Position: Geospatial Information Researcher, Geoinformation and Space Technology Development Agency, Thailand Government.

22. 3/2006-8/2011. **Gabor Barsai**. “Data registration without explicit correspondence for estimating camera orientation parameters.” Current Position: Tenure track faculty at Ferris State University, Michigan.
23. 1/2008-8/2011. **Diego Mandelli**. “Scenario Clustering and Dynamic PRA.” Current Position: Idaho National Labs. (co-advised with T. Aldemir)
24. 8/2007-12/2010. **Lei Ding**. “From pixels to people: graph-based methods for grouping problems in computer vision.” Current Position: Research Scientist at Paypal Inc. (co-advised with M. Belkin)
25. 1/2007-2/2010. **Polun Lai**. “Shape recovery by exploiting planar topology in 3D projective space.” Current Position: Research Scientist at Trimble Inc.

Current Masters Students

1. 8/2024- **Yasemin Ozkut**

Completed Masters Students

1. 4/2019-12/2020 **Yuci Han**, “Visual Navigation with UAV Using Deep Reinforcement Learning”
2. 1/2019-8/2020 **Shehan Perera**, “Automated Intracranial Hemorrhage and Subtype Detection”
3. 8/2015-5/2017 **Sai Luo**, “Semantic Movie Scene Segmentation Using Bag-of-Words Representation”
4. 8/2015-4/2017 **Nima Ajam Gard**, “Configuration of large camera networks.”
5. 8/2015-4/2017 **Yuchen Lai**, “Augmented Reality Visualization of Building Information Models.”
6. 8/2015-3/2017 **Abdullah Alanazi**, “Evaluation the accuracy of GIS data acquired from OpenStreetMaps by comparing against ISPRS benchmark data.”
7. 8/2014-5/2016 **Adam Mattmuller**, (co-advised with Prof. Tunc Aldemir), Nuclear Power Plant Maintenance Improvements via Implementation of Wearable Technology.”
Holds the following patents US20190063405A1
8. 1/2011-12/2014 **Andrew Kerns** (non-thesis), The Ohio State University
9. 9/2011-5/2013 **Jordan Lawver**, “Robust Feature Tracking in Image Sequences Using View Geometric Constraints.”
10. 1/2011-5/2012 **Kashyap Maduri**, (non-thesis)
11. 7/2008-6/2011 **Vinod Khare**, “Precise image registration and occlusion detection.”
Holds the following patents US20190052851A1, WO2019002557A1
12. 1/2009-9/2010 **Mustafa Ozendi**, “Viewpoint independent image classification and retrieval.”
13. 1/2008-5/2010 **Rhae-Sung Kim**, “Spectral matching using bitmap indices of spectral derivatives for the analysis of hyperspectral imagery.”
14. 8/2006-12/2008 **Panu Srestasathiern**, “View invariant planar object recognition.”
15. 9/2006-5/2008 **Kyoungjin Park**, “Design of web services system for digital photogrammetry workstation based on service oriented architecture.”

Undergraduate Senior Thesis Advisor

1. 5/2024 **Kaizhi Yang**, “to come”
2. 5/2024 **Eve Myadze-Pike**, “to come”
3. 8/2023 **David Novikov**, “Geopositioning ground objects in UAS imagery”
4. 5/2011 **Jordan Lawver**, “Three-Dimensional Volumetric Scene Recovery From Multiple Stereo Views Using Voxel Division Techniques.”

Noteworthy accomplishments of advisees

1. **Pouyan Boreshnavard:**
Awarded the “Robert Althernhofen Memorial Scholarship” in 2022 by the American Society for Photogrammetry and Remote Sensing
2. **Bing Zha and Mike Bai:**
Awarded the “3rd Place Certificate of Achievement” in the 2018 PHI-NET Challenge in CS/DATA Category by the Pacific Earthquake Engineering Research Center
<https://apps.peer.berkeley.edu/phichallenge/winner/>
3. **Guanyu Xu:**

Awarded the “Michael Johnson Graduate Student Award” School of Earth and Sciences, Ohio State University

4. **Oliver Nina:**
Awarded 1st place at ICFHR Competition on Automated Text Recognition on a READ Dataset (2018)
<https://scriptnet.iit.demokritos.gr/competitions/10/scoreboard/>
5. **Oliver Nina:**
Awarded 1st place at ICCV Large scale movie description challenge (2017)
<https://sites.google.com/site/describingmovies/previous-years/lsmdc-2017?authuser=0>
6. **Taha Koroglu:**
Recipient of competitive Turkish Government Fellowship (2012)
7. **Siavash HosseinyAlamdary:**
Awarded second place in TIC’14: The ISPRS Tracking and Imaging Challenge (2014)
8. **Jordan Lawver:**
US Geospatial Intelligence Foundation Scholarship (2012);
OSU College of Engineering Undergraduate Research Fellowship (2011);
Honors Thesis (2011);
Best Paper Award at ISA Workshop (2013)
9. **Po-Lun Lai:**
OSU Duane Brown Junior Award (2010);
IEEE travel fellowship recipient (2008);
Post Doctoral Research at Mechanical Engineering Department at OSU (2011)
10. **Lei Ding:**
OSU Presidential Fellowship (2008);
Post Doctoral Research at Electrical Engineering Dept. at Columbia University
11. **Jinwei Jiang:**
OSU University Fellowship (2007)
12. **Panu Srestasathiern:**
Recipient of competitive Thailand Government Fellowship (2008)
13. **Mohammed Al-Shahri:**
Recipient of competitive Oman Government Fellowship (2008)

Advised Visiting Scholars and Researchers

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|--------------------|----------------|--------------------|-----------------|
| 1. 2/2023- | Kenan Menguc | 14. 7/2016-12/2016 | Mancheng Feng |
| 2. 7/2022-7/2023 | Serkan Zobar | 15. 7/2016-12/2016 | Zeshu Zhang |
| 3. 9/2019-9/2020 | Yao Guobia | 16. 6/2015-3/2016 | Huan Chang |
| 4. 8/2019-8/2020 | Akif Durdu | 17. 8/2014-7/2015 | Feng Wang |
| 5. 5/2018-5/2019 | Mehmet Korkmaz | 18. 1/2015-6/2015 | Prashast Bindal |
| 6. 3/2018-6/2018 | Yatong Han | 19. 9/2014-8/2014 | Weisen Pan |
| 7. 10/2017-6/2018 | Jie Wan | 20. 5/2013-4/2014 | Levent Ozparlak |
| 8. 9/2017-9/2018 | Hu Junfeng | 21. 4/2011-4/2012 | Akif Durdu |
| 9. 7/2017-7/2018 | Zhao Yafeng | 22. 6/2011-9/2011 | Aliye Kayis |
| 10. 10/016-12/2017 | Xuhui Su | 23. 8/2009-8/2010 | Haluk Eren |
| 11. 4/2017-4/2018 | Kemal Erdogan | 24. 3/2009-3/2010 | Jae-Soo Cho |
| 12. 4/2016-3/2017 | Meng Yi | 25. 8/2008-8/2009 | Kong-Hyun Yun |
| 13. 9/2015-3/2017 | Shirui Li | | |

List of Books, Chapters, Articles and Other Published Papers

Keynote Lectures

- [1] A. Yilmaz. November 2019. Geo-Positioning in the big data era: a machine learning perspective. ISPRS Conference on GIS in the Big Data Era. Guilin, China
- [2] A. Yilmaz. April 2019. Motion mining in state scale maps. Wuhan University, China
- [3] A. Yilmaz. September 2018. Automated Geospatial Placement of a Camera Network for Wide Area Surveillance. Remote Sensing and Geographical Information Systems Symposium. Eskisehir Turkey

- [4] A. Yilmaz. September 2018. Navigation on planets. Scientific and Technological Research Council of Turkey. Gebze, Turkey
- [5] A. Yilmaz. June 2018. Camera Placement for Wide Area Surveillance & Robotic Path Planning. CPGIS 2018, Intelligent Photogrammetry and Remote Sensing. Beijing China
- [6] A. Yilmaz. September 2017. Human-Cyber-Physical-Systems Engineering for Robust Shutdown Control of Civil Infrastructures. Big Data for Nuclear Power Plants Workshop. Columbus OH
- [7] A. Yilmaz. May 2017. Deep learning techniques for object tracking in image sequences. ISPRS Conference on Photogrammetric and computer vision techniques for video surveillance, biometrics and biomedicine. Moscow, Russia
- [8] A. Yilmaz. March 2017. Geolocalization: Motion Mining in State Scale Maps. ASPRS Imaging and Geospatial Technology Forum. Baltimore MD

Patents

Granted

- [1] [System and method for analysis of surface features](#), US9291527B2,
- [2] [System and method for analysis of surface features](#), US10063837B2
- [3] [Systems, methods, and devices for geo-localization](#), US10677932B2
- [4] [Mesh registration system and method for diagnosing tread wear](#), US10789773B2
- [5] [Mesh registration system and method for diagnosing tread wear](#), US10247641B2
- [6] [Methods and systems for performing navigation-assisted medical procedures](#), US10383654B2
- [7] [Systems and methods for real-time data processing and for emergency planning](#), US11156995B2
- [8] [Systems, methods and devices for map-based object's localization deep learning and object's motion trajectories on geospatial maps](#), WO2022010855A1
- [9] [Systems And Methods For Real-Time Data Processing And For Emergency Planning](#), US11720091B2

Provisional

- [10] Automated Systems for Detection of Stroke and Related Methods. **Provisional Patent**, Application Number 63/296,602

Standards

- [1] [Technical requirements of polar coordinate photogrammetry based on Unmanned Aircraft System](#), IEEE 1937.11-2023,

Chapters in Books

- [2] Z. Koppanyi, D. Iwaszczuk, B. Zha, C. Saul, C. Toth and A. Yilmaz. August 2019. Multi-Modal Semantic Segmentation: Fusion of RGB and Depth Data in Convolutional Neural Networks. In Multi-Modal Scene Understanding. Edited by Bodo, M. Yang and Vittorio. Elsevier. ISBN: 9780128173589
- [3] A. Gupta and A. Yilmaz. 2018. Social Network Inference in Videos, in Signal Processing, Volume 6 on Image and Video Processing and Analysis and Computer Vision, Chapter 11, pages 395-424, Elsevier. DOI: 10.1016/B978-0-12-811889-4.00011-7
- [4] L. Ding and A. Yilmaz. 2014. Learning Social Relations from Videos: Features, Models and Analytics. In Human-Centered Social Media Analytics. Edited by Y.R. Fu and S. Rees. New York, NY: Springer Verlag. DOI 10.1007/978-3-319-05491-9_2
- [5] F. Porikli and A. Yilmaz. 2012. Object Tracking. In Video Analytics for Business Intelligence. Edited by C. Shan, F. Porikli, T. Xiang and S. Gong. New York, NY: Springer Verlag. ISBN 978-3-642-28597-4
- [6] A. Durdu, I. Erkmén, A. Erkmén, A. Yilmaz. 2012. Robotic Hardware and Software Integration for Changing Human Intentions. In Prototyping of Robotic Systems: Applications of Design and Implementation. Edited by T. Sobh, X. Xiong. IGI Global Publisher. ISBN13: 978-1-466-60176-5
- [7] A. Yilmaz. 2011. Detecting and Tracking the Action Content. In Computer Analysis of Human Behavior. Advances in Pattern Recognition. Edited by Theo Gevers and Albert Ali Salah. New York, NY: Springer Verlag. 41-68. ISBN 978-0-85729-993-2
- [8] A. Yilmaz. 2009. Active Contours: Snakes. In Wiley Encyclopedia of Computer Science and Engineering. Vol. 1. Edited by Benjamin W. Wah. New Jersey: John Wiley & Sons. 11-13. ISBN: 978-0-471-38393-2

- [9] A. Yilmaz. 2009. Level Set Methods. In Wiley Encyclopedia of Computer Science and Engineering. Vol. 3. Edited by Benjamin W. Wah. New Jersey: John Wiley & Sons. 1731-1734. ISBN: 978-0-471-38393-2
- [10] A. Yilmaz. 2009. Contour Tracking. In Wiley Encyclopedia of Computer Science and Engineering. Vol. 1. Edited by Benjamin W. Wah. New Jersey: John Wiley and Sons. 668-672. ISBN: 978-0-471-38393-2

Articles

- [20] S. Zobar, M. Cigdem, O. Durna, J. Kwag, C. Toth, and A. Yilmaz. March 2024. Design and Real-Time Application of a Low SWaP-C Positioning System. IEEE Access. (*submitted*)
- [21] S. Perera, Y. Erzurumlu, and A. Yilmaz. February 2024. MobileUNETR: A Lightweight End-To-End Hybrid Vision Transformer For Efficient Medical Image Segmentation. Medical Image Analysis Journal (*submitted*)
- [22] Y. Zhuang, J. Huai, Y. Shao, G. Jozkov, B. Wang, H. Jia and A. Yilmaz. January 2024. Geometric Wide-Angle Camera Calibration: A Review and Comparative Study. IEEE Sensors Journal. (*submitted*)
- [23] M. Kaur, S. Trovato, L. Fussner, C. Liscynsky, R. Xu, B. Zha, A. Yilmaz, B.H. Kaffenberger SEPTEMBER 2023. SARS-COV-2-19 Diagnosis Through Integration of Thermal Video and Patient Data. Academic Dermatology. (*submitted*)
- [24] K. Menguc and A. Yilmaz. January 2024. Improving Model Performance of Shortest-Path-Based Centrality Measures in Network Models through Scale Space. Concurrency and Computation: Practice and Experience (*revised submitted*)
- [25] K. Menguc and A. Yilmaz. January 2024. Cost-Constrained Growth Optimization of a Single-Layer Weighted Network. Journal of Optimization Theory and Applications (*submitted*)
- [26] S. Perera, A. Yilmaz, "LeavisNet: A ~350k Parameter Light Weight Architecture for Efficient Biomedical Deep Learning Applications" IEEE Trans. on Medical Imaging (*submitted*)
- [27] Q. Li, Y. Zhuang, J. Huai, Y. Chen and A. Yilmaz. November 2022. An Efficient 3D Point Cloud Place Recognition with Graph Transformer Network. ISPRS Journal of Photogrammetry and Remote Sensing (*submitted*)
- [28] Y. Bai, A. Demir, A. Yilmaz, and H. Sezen. November 2023. Assessment and Monitoring of Bridges Using Various Camera Placements and Structural Analysis. Journal of Civil Structural Health Monitoring <https://doi.org/10.1007/s13349-023-00720-6>
- [29] Q. Li, Y. Zhuang, J. Huai, Y. Chen, and A. Yilmaz. January 2024. An efficient point cloud place recognition approach based on transformer in dynamic environment. ISPRS Journal of Photogrammetry and Remote Sensing. Volume 207, Pages 14-26. <https://doi.org/10.1016/j.isprsjprs.2023.11.013>
- [30] Y. Bai, H Sezen, A. Yilmaz, R. Qin. November 2023. Bridge Vibration Measurements Using Different Camera Placements and Techniques of Computer Vision and Deep Learning. Springer Journal of Advances in Bridge Engineering. 4, Article 25. <https://doi.org/10.1186/s43251-023-00105-1>
- [31] A. Yusefi; A. Durdu; A. Yilmaz; C. Sungur; F. Bozkaya; S. Tığlıoğlu; V. Alver. September 2023. A Generalizable D-VIO and Its Fusion with GNSS/IMU for Improved Autonomous Vehicle Localization. IEEE Transactions on Intelligent Vehicles. <https://doi.org/10.1109/TIV.2023.3316361>
- [32] J. Wei and A. Yilmaz. September 2023. A Visual Odometry Pipeline for Real-Time UAS Geopositioning. Drones Journal Special Issue on Advances in AI for Intelligent Autonomous Systems. <https://doi.org/10.3390/drones7090569>
- [33] M. Karnes and A. Yilmaz. September 2023. Omni-Modeler: Rapid Adaptive Visual Recognition with Dynamic Learning. An International Journal Signal & Image Processing. Vol. 14 No 4/5. DOI: 10.5121/sipij.2023.14501
- [34] B. Zha and A. Yilmaz. May 2023. Subgraph Learning for Topological Geolocalization with Graph Neural Networks. Sensors Journal. 23(11), 5098, <https://doi.org/10.3390/s23115098>
- [35] K. Menguc, N. Aydin and A. Yilmaz. June 2023. A Data-Driven Approach to Forecasting Traffic Speed Classes Using Extreme Gradient Boosting Algorithm and Graph Theory. Physica A: Statistical Mechanics and its Applications, Vol. 620 <https://doi.org/10.1016/j.physa.2023.128738>
- [36] Y. Zhuang, A. Yilmaz, J. Huai, C. Zhang, Y. Shao, B. Wang, J. Tang. April 2023. Automated Rolling Shutter Calibration with an LED Panel. Optics Letters. <https://doi.org/10.1364/OL.474375>
- [37] M.F. Aslan, A. Durdu, A. Yusefi and A. Yilmaz. November 2022. HVIONet: A Deep Learning Based Hybrid Visual-Inertial Odometry Approach for Unmanned Aerial System Position Estimation, Neural Networks. Vol. 155, Pages 461-474 <https://doi.org/10.1016/j.neunet.2022.09.001>

- [38] Y. Bai, B. Zha, H. Sezen and A. Yilmaz. May 2022. Engineering deep learning methods on automatic detection of damage in infrastructure due to extreme events. *Structural Health Monitoring*.
<https://doi.org/10.1177/14759217221083649>
- [39] M. Karnes and A. Yilmaz. March 2022. Network Comparison Study of Deep Activation Feature Discriminability with Novel Objects. arXiv:2202.03695 [cs.CV]
- [40] G. Yao, A. Yilmaz, Fei Meng, Zhang Li. July 2021. Review of Wide-baseline Stereo Image Matching Based on Deep Learning. *International Journal of Remote Sensing*. 13(16), 3247;
<https://doi.org/10.3390/rs13163247>
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Description of Quality Indicators, such as Citations, Ranking or Impact Factors of Journal or Publisher

Since peer reviewed conference papers do not appear in citation counts, the citations below are extracted from Google Scholar. The citation counts only include journal articles and conference papers.

Number of received citations from other researchers

- Number of citations is compiled from Google Scholar on March, 2022.
- According to Google Scholar my

- h-index is 30
- i10-index is 60
- Erdős number is 4
- Number of citations is 12,128

Research Grants

Dr. Yilmaz has received over \$13M in research funds from industry: Trimble, Ford, ICT, UbiHere, and government: NASA, DOE, NGA, DOT, NSF, AFRL, NSA.

University Funded Research

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|----------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 8/2022-12/2023 | “Accelerator Award for Automated Stroke Detection” OSU Kenaan Entrepreneurship Center. \$100,000 (PIs: Alper Yilmaz, Deepak Gulati) |
| 9/2021-8/2022 | “Automated Detection of Subtypes of Intracranial Hemorrhage Using Deep Learning”. OSU Center for Medical and Engineering Innovation \$25,000 (PIs: Alper Yilmaz, Deepak Gulati) |
| 6/2021-8/2021 | “COVID-19 Diagnosis through integration Thermal Video and Patient Data” \$10,000 (PI: Alper Yilmaz) |
| 8/2017-12/2018 | “Automated Intraoperative Co-registration of Patient and Radiotherapy Device” OSUCCC Radiation Oncology Translational Research Seed Grant \$15,000 (PIs: Ahmet Ayan, Alper Yilmaz, Nilendu Gupta) |
| 7/2014-5/2017 | “Wearable Navigation System for Image-guided Cancer Resection Surgery.” OSUCCC Intramural Research Program IDEA Award. \$100,000 (PIs: Alper Yilmaz, Ronald Xu, Michael Tweedle) |
| 3/2017-2/2018 | “The UAV Semantic Video Segmentation Challenge 2017” ISPRS Scientific Initiatives 7,000 Swiss Franc (PIs: Alper Yilmaz, Michael Yang) |
| 5/2009-4/2010 | "Development of Methods for Tracking Human Motion Without Markers in Athletic & Clinical Environments." OSU Sports Medicine Center. \$3,805. (PI: Ajit Chaudhari, CoI: Alper Yilmaz) |

Industry Funded Research

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|-----------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 5/2023-5/2024 | (Phase 1 STTR) Tracking objects with handoff across cameras \$23,000 (PI: Alper Yilmaz) |
| 10/2021-12/2023 | “(Phase 2 STTR) Low-Cost Compact Artificially Intelligent Camera System for Navigation and PNT Without GPS or Connectivity” UbiHere \$216,221 (PI: Alper Yilmaz) |
| 1/2021-8/2021 | “(Phase 1 STTR) Low-Cost Compact Artificially Intelligent Camera System for Navigation and PNT Without GPS or Connectivity” UbiHere \$50,000 (PI: Alper Yilmaz) |
| 3/2019-2/2021 | “360-degree-camera based perception.” Ford. \$185,010. (PI: Alper Yilmaz) |
| 1/2020-12/2020 | “(STTR) Multilateration of a forest of sensors with unknown positions” UbiHere \$8,000 (PI: Alper Yilmaz) |
| 11/2014-6/2017 | “Recovering 3D ceiling profile using light coding technology.” Intelligent Construction Tools, LLC. \$344,977. (PI: Alper Yilmaz) |

1/2012-6/2015 “Localization and Pose estimation for Tools at Construction Sites.” Trimble Inc. \$412,349. (PI: Alper Yilmaz)

Government Funded Research

7/2023-06/2025 “Automated Sonographic Detection of Pulmonary Embolism Using Machine Learning Algorithm”. NIH \$606,992 (PIs: Srikar Adhikari (UA), Alper Yilmaz (OSU))

7/2023-7/2025 Real-time tracking of gravitational field via crowdsourcing NGA \$300,000 (PIs: Alper Yilmaz (OSU), Charles Toth (OSU))

8/2022-7/2024 “Automated Ultrasound Technology to Diagnose Traumatic Retinal Detachment” Army \$149,055 (PIs: Srikar Adhikari (UA), Alper Yilmaz (OSU))

3/2022-2/2023 “Geolocalization of moving targets from moving platforms” AFRL \$50,000 (PI: Alper Yilmaz)

10/2021-9/2024 “A virtual reality environment for human reliability assessment in the context of physical security attacks” DoE. \$670,100 (PIs: Carol Schmit, Alper Yilmaz, Abdollah Shafiehzadeh)

9/2021- 8/2024 “Graph Neural Network based geometric modeling of terrain topology; its application to GPS denied navigation” ARO. \$883,513 (PIs: Alper Yilmaz, Charles Toth)

1/2021-12/2021 “Phase 1: Center for Accurate Georeferencing of the Environment” NSF. \$32,000 (PIs: Charles Toth, Liz Newton, Alper Yilmaz (OSU), Ayman Habib (Purdue) Vasit Sagan (SLU))

11/2019-10/2022 “Context-Aware Safety Information Display for Nuclear Field Workers.” DoE. \$800,000. (PIs: Pingbo Tang (ASU), Alper Yilmaz (OSU))

8/2019-5/2021 “Generative models with visual attention for target tracking and reacquisition.” AFRL. \$67,000+\$55,000+\$35,000. (PI: Alper Yilmaz)

9/2017-8/2020 “Integrating Static PRA Information with RISM Simulation Methods” DoE. \$799,985 (PI: Tunc Aldemir (OSU), CoI: Alper Yilmaz)

10/2016-9/2020 “Smart City Challenge.” USDOT. \$2,587,793 (PI: Carla Bailo **Core Team Member:** Alper Yilmaz and others)

4/2016-6/2019 “Generative models with visual attention for target tracking and reacquisition.” AFRL. \$85,000. (PI: Alper Yilmaz)

10/2015-12/2018 “Automatic Video Analysis for Proactive Computer-Based Workflow Management during Nuclear Power Plant Outages.” DOE NEUP Program. \$799,351. (PIs: Pingbo Tang (ASU), Alper Yilmaz (OSU), CoIs: Nancy Cooke (ASU), James Rogers (ASU))

7/2015-6/2016 “REU Supplement: CMMI-1435446: Simulation of Collapse Behavior and Testing of Masonry Buildings.” National Science Foundation. \$10,000 (PI:Halil Sezen, CoI: Alper Yilmaz)

- 7/2014-6/2016 "Analytical and Experimental Collapse Behavior of Masonry Buildings." National Science Foundation. \$227,628 (**PI:**Halil Sezen, **CoIs:** Alper Yilmaz)
- 7/2013-6/2015 "Geolocating videos acquired from mobile platforms." National Geospatial-Intelligence Agency. \$263,031 (**PI:**Alper Yilmaz)
- 6/2011-3/2015 "High-precision long-range rover localization and topographic mapping using networked PanCam images for the ESA ExoMars rover mission." NASA. \$624,705. (**PI:** Alper Yilmaz, **CoI:** Dorota Brzezinska)
- 6/2011-12/2014 "Outreach: Crater seeker for Mars and beyond." NASA. \$80,000. (**PI:** Alper Yilmaz, **CoI:** Dorota Brzezinska)
- 7/2011-6/2014 "Integration of lunar reconnaissance orbiter camera (LROC) and lunar orbiter laser altimeter (LOLA) data for near real-time precision lunar topographic mapping and landing sites assessment." NASA. \$399,633. (**PI:** Alper Yilmaz, **CoI:** Dorota Brzezinska)
- 10/2011-5/2014 "Pathway Aggregation (Clustering) in the Risk Assessment of Proliferation Resistance and Physical Protection (PR&PP) of Nuclear Energy Systems." DOE NEUP Program. \$534,471. (**PI:** Tunc Aldemir, **CoIs:** Alper Yilmaz, M. Yue, L. Cheng, Umit Catalyurek)
- 1/2013-12/2013 "Collaborative research: RAPID: Impact of disturbance from hurricane Sandy on methane emission and carbon sequestration rates in NJ coastal wetlands." National Science Foundation. \$70,200. (**PI:** Gil Bohrer, **CoIs:** Alper Yilmaz, Karina Schafer)
- 10/2011-9/2012 "View Geometric Approach to Tracking Scene Features." NSF/AFRL/Industry Center for Surveillance Consortium. \$44,000.00. (**PI:** Alper Yilmaz, **CoI:** Randolph Moses, Lee Potter)
- 4/2011-9/2012 "Identifying Groups and Their Leaders in in IED Burying Scenario Acquired from a Camera Mounted on a Pole." Air Force Research Laboratory. \$85,000.00. *Contract number: FA8650-07-D-1220-Task #6.* (**PI:** Alper Yilmaz, **CoI:** Randolph Moses)
- 11/2010-9/2012 "Wide Area Multimodal Sensor Exploitation for Detecting Human Threat Signatures." Air Force Research Laboratory. \$43,000.00. *Contract number: FA8650-07-D-1220-Task #6.* (**PI:** Alper Yilmaz, **CoI:** Randolph Moses)
- 3/2010-9/2011 "Method and tool development to support systematic quantification of uncertainties." Idaho National Labs/Battelle Energy Alliance, LLC. \$369,986.00. *Contract Number: Cont 42898 Task Rel 21.* (**PI:** Tunc Aldemir, **CoIs:** Richard Denning, Carol Smidts, Xiadong Sun, Umit Catalyurek, Alper Yilmaz)
- 4/2010-7/2011 "Image Georegistration, Camera Calibration and Dismount Categorization In Support of DEBU from Layered Sensing." Air Force Research Laboratory. \$328,980.00. *Contract number:*

- FA8650-07-D-1220-Task #5. (**PI:** Alper Yilmaz, **CoIs:** Mateen Rizki, Charles Toth)
- 8/2008-7/2011 "Enhancement of spatial orientation capability of astronauts on the lunar surface." NASA-National Space Biomedical Research Institute. \$1,200,000.00. *Contract Number: NCC 9-58-351.* (**PI:** Ron Li, **CoI:** Alper Yilmaz, Kaichang Di, Martin Banks)
- 9/2007-1/2009 "Real-time analysis of urban and rural environments for source assessment from a network of video cameras." DOD Counterintelligence Field Activity Behavioral Science Directorate. \$111,247.00. *Contract Number: H9C104-07-C-0009.* (**PI:** Alper Yilmaz)

Editorial Activities

Journal Editorial Board

- 2016-present **Editor-In-Chief.** ASPRS Photogrammetric Engineering and Remote Sensing Journal.
- 2017 **Editor,** Proceedings of the ISPRS Hannover Workshop.
- 2017-2019 **Editorial Board Member.** International Journal Engineering and Geosciences
- 2014-2020 **Associate Editor.** Computer Vision and Image Understanding, Elsevier.
- 2015 **Guest editor.** ISPRS International Journal of Geo-Information. Special issue on Tracking and Imaging.
- 2015 **Field Editor** on Sensor Fusion for GPS-denied Environments, Springer, Encyclopedia of GIS
- 2006-2011 **Associate Editor.** Machine Vision and Applications.

Professional Activities

- 04/2021 **Proposal Reviewer,** Research Council of Hong Kong
- 04/2021 **Review Panel Member,** DoE Consolidated Innovative Nuclear Research Program
- 04/2021 **Proposal Reviewer,** Natural Sciences and Engineering Research Council of Canada
- 03/2017 **Review Panel Member,** National Science Foundation (Environmental Monitoring Panel)
- 2016, 2019 **Proposal Reviewer,** ETH Zurich Research Commission
- 2016-now **Selection Committee Member,** ASPRS 2016-2017 Paper Awards
- 2016-now **Selection Committee Member,** ASPRS Altenhofen Scholarship
- 04/2016 **Advisory Committee Member,** Intelligent Transportation Systems University Grand Challenge
- 04/2014 **Proposal Reviewer,** NASA Postdoctoral Program (NPP)
- 04/2014 **Proposal Reviewer,** ETH Zurich Research Commission
- 03/2014 **Proposal Reviewer,** National Science Foundation (Division of Information and Intelligent Systems Smart Health Program)

- 11/2012 **Proposal Reviewer**, Portuguese Foundation for Science and Technology (FCT)
- 07/2012 **Review Panel Member**, National Science Foundation (Division of Information and Intelligent Systems Smart Health Program)
- 03/2012 **Review Panel Member**, National Science Foundation (Robust Intelligence Program)
- 03/2010 **Proposal Reviewer**, National Science Foundation (Division of Engineering Education and Centers)
- 03/2009 **Review Panel Member**, National Science Foundation (Robust Intelligence Program)
- 02/2009 **Proposal reviewer**, National Science Foundation (Information Integration and Informatics Program)

Student Life Activities

- 08/2017 Mentor, OSU Office of Diversity and Inclusion, Post-Baccalaureate Preparation Program
- 03/2014 Evaluator, OSU University Fulbright Campus Evaluation Committee
- 03/2013 Evaluator, OSU University Fulbright Campus Evaluation Committee
- 04/2011 Evaluator, OSU College of Engineering Denman Undergraduate Research Forum

List of Offices Held and Services to Professional Societies

- 2022-present **President, Technical Commission II**, International Society for Photogrammetry and Remote Sensing (ISPRS)
- 2022-present **Vice Chair**, Standards Committee on Photogrammetry in Polar coordinates, IEEE Standards Association
- 2020-2022 **Interim President, Technical Commission II**, International Society for Photogrammetry and Remote Sensing (ISPRS)
- 2018-present **Chair, Publications Committee**, American Society for Photogrammetry and Remote Sensing (ASPRS)
- 2016-present **Member, Scholarship Committee**, American Society for Photogrammetry and Remote Sensing (ASPRS)
- 2016-present **Member**, IEEE Computer Society Technical Committee on Intelligent Informatics
- 2016-present **Member**, IEEE Computer Society Technical Committee on Multimedia Computing
- 2010-present **Member**, IEEE Computer Society Technical Committee on Pattern Analysis and Machine Intelligence
- 2016-present **Member**, IEEE Computer Society Technical Committee on Social Networking
- 2016-present **Member**, IEEE Computer Society Technical Committee on Wearable and Ubiquitous Computing
- 2016-2020 **Chair, Commission II WG II/5**, International Society for Photogrammetry and Remote Sensing (ISPRS)

2014-2017	Committee Member, Publications and Publicity Committee, International Association for Pattern Recognition (IAPR)
2012-2016	Co-Chair, Commission III WG III/3, International Society for Photogrammetry and Remote Sensing (ISPRS)
2010-present	Active Member, American Society for Photogrammetry and Remote Sensing (ASPRS)
2009-2010	Treasurer, Special Group on Health Informatics, Association for Computing Machinery (ACM)
2003-present	Active Member, Association for Computing Machinery (ACM)
2001-present	Active Member, IEEE Computer Society
1999-present	Active Member, Institute of Electrical and Electronics Engineers (IEEE)

Service

Depositions for expert testimony

9/30/2020	Courtney Jayne v. City Of Sioux Falls, Sioux Falls, SD
1/31/2024	Crichlow Gregory v. State of Connecticut, Hartford, CT

Administrative

Academic Unit Committees

2023-present	Member, CAE Geodetics, Dept. of Civil Environmental and Geodetic Engineering, The Ohio State University.
2023-present	Member, Promotion and Tenure Committee, Dept. of Civil Environmental and Geodetic Engineering, The Ohio State University.
2021-present	Member, Graduate Studies Committee, Dept. of Civil Environmental and Geodetic Engineering, The Ohio State University.
2021-2022	Member, CEGE Research Advisory Committee, Dept. of Civil Environmental and Geodetic Engineering, The Ohio State University.
2018-present	Member, Grad Curriculum Renewal, Dept. of Civil Environmental and Geodetic Engineering, The Ohio State University.
2018-2020	Chair, Promotion and Tenure Committee, Dept. of Civil Environmental and Geodetic Engineering, The Ohio State University.
2017-2018	Member, Promotion and Tenure Committee, Dept. of Civil Environmental and Geodetic Engineering, The Ohio State University.
2016-2017	Chair, Workload committee, Dept. of Civil Environmental and Geodetic Engineering, The Ohio State University.
2016-2017	Member, Mentoring committee, Dept. of Civil Environmental and Geodetic Engineering, The Ohio State University.
2013-2020	Member, Executive Committee, Dept. of Civil Environmental and Geodetic Engineering, The Ohio State University.
2015-2016	Chair, Faculty search committee, Dept. of Civil Environmental and Geodetic Engineering, The Ohio State University.
2014-2015	Chair, Faculty search committee, Dept. of Civil Environmental and Geodetic Engineering, The Ohio State University.

- 2012-2014 **Member, Scholarship Committee**, Dept. of Civil Environmental and Geodetic Engineering, The Ohio State University.
- 2011-2014 **Member, Undergraduate Studies Committee**, Dept. of Civil Environmental and Geodetic Engineering, The Ohio State University.
- 2009-2011 **Member, Graduate Studies Committee**, Dept. of Civil Environmental and Geodetic Engineering, The Ohio State University.
- 2011 **Member, Ad-hoc Committee on Organization of Geodetic Science and Remote Sensing Courses for Semester Conversion**, Dept. of Civil Environmental and Geodetic Engineering, The Ohio State University.
- 2007-2009 **Member, Computer Committee**, Dept. of Civil Environmental and Geodetic Engineering, The Ohio State University.

Academic Program Committees

- 2010-2014 **Member, Graduate Studies Committee**, Geodetic Science Graduate Program, The Ohio State University.
- 2010-2011 **Graduate Interdisciplinary Specialization Semester Conversion Committee**, The Ohio State University.
- 2009 **PPAT, Ad-hoc committee on restructuring of Geodetic Science Graduate Program**, Geodetic Science Graduate Program, The Ohio State University.

Academic College Committees

- 2023-present **Member, Fellowships Review Committee**, Engineering College, The Ohio State University.
- 2023-present **Member, Masters Global Engineering Leadership**, Engineering College, The Ohio State University.
- 2017-2020 **Member, Promotion and Tenure Committee**, Engineering College, The Ohio State University.
- 2017 **Procedures Oversight Designee (POD)**, Engineering College, The Ohio State University.

Academic University Committees

- 2023 **Proposal Reviewer, TDAI**, The Ohio State University.
- 2014-2017 **Member, University Research Committee**, The Ohio State University.
- 2013-2016 **Senator, University Senate**, The Ohio State University.
- 2013-2016 **Member, Faculty Council**, The Ohio State University.
- 2015-2016 **Member, Council on the Physical Environment (COPE)**, The Ohio State University.
- 2011, 2013 **Faculty Member, Fulbright Campus Evaluation Panel**, The Ohio State University.