

Asst. Prof. ÖZGÜR ERKENT

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International Researcher IDs

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Biography

Ozgur Erkent is an assistant professor at [Department of Artificial Intelligence](#) at [Hacettepe University](#). His research interests include autonomous vehicles, robotics, object pose estimation, attentive vision, place recognition, semantic segmentation, object recognition, scene classification, machine learning, human-robot interaction, localization, SLAM, mechanical and electrical design of robots. He is also an external collaborator at [Team Chroma](#) at INRIA. He was working as the Starting Research Position at [Team Chroma](#) working with Christian Laugier and Christian Wolf. He was a Post-doc at [Intelligent and Interactive Systems](#) at [University of Innsbruck](#) under the supervision of Prof. Dr. Justus Piater from 2013 until 2017 August. He received his PhD in 2013 from [Department of Electrical and Electronics Engineering](#) at [Boğaziçi University](#), MSc in 2004 from [Cognitive Science Department](#) and BS from [Mechanical Engineering](#) in 2001, both from [Middle East Technical University](#).

Education Information

Doctorate, Bogazici University, Institute Of Science, Elektrik-Elektronik Mühendisliği, Turkey 2007 - 2013

Postgraduate, Middle East Technical University, Graduate School Of Informatics, Cognitive Science, Turkey 2001 - 2004

Undergraduate, Middle East Technical University, Faculty Of Engineering, Department Of Mechanical Engineering, Turkey 1997 - 2001

Foreign Languages

German, B1 Intermediate

English, C2 Mastery

Russian, A1 Beginner

French, A2 Elementary

Dissertations

Doctorate, Scene Exploration and Recognition with an Attentive Robot, Bogazici University, Institute Of Science, Elektrik-Elektronik Mühendisliği, 2013

Postgraduate, An Eye Movement Analysis Of Chess Players Across Levels Of Expertise: An Electrooculography Study, Middle East Technical University, Graduate School Of Informatics, Cognitive Science, 2004

Research Areas

Robotics and Mechatronics Systems, Image and Video Processing, Pattern Recognition and Analysis, Computer Learning, Human Computer Interaction, Pattern Recognition and Image Processing, Neural Networks, Robotics, Mechatronics

Academic Titles / Tasks

Assistant Professor, Hacettepe University, Mühendislik Fakültesi, Bilgisayar Mühendisliği Bölümü, 2021 - Continues
Other, INRIA Grenoble-Alpes, Chroma, Chroma, 2017 - 2021
Other, Universitaet Innsbruck, Enformatik ve Matematik, Bilgisayar Muhendisliđi, 2013 - 2017

Courses

Introduction to Robotics, Undergraduate, 2021 - 2022
Robotics, Doctorate, 2022 - 2023, 2021 - 2022
Computer Organization, Undergraduate, 2021 - 2022
Logic Design, Undergraduate, 2022 - 2023, 2021 - 2022

Advising Theses

Erkent Ö., YOLO-Based Panoptic Segmentation, Postgraduate, M.Alejandro(Student), 2020

Published journal articles indexed by SCI, SSCI, and AHCI

- I. **Semantic Segmentation With Unsupervised Domain Adaptation Under Varying Weather Conditions for Autonomous Vehicles**
ERKENT Ö., Laugier C.
IEEE ROBOTICS AND AUTOMATION LETTERS, vol.5, no.2, pp.3580-3587, 2020 (SCI-Expanded)
- II. **Learning Semantics of Gestural Instructions for Human-Robot Collaboration**
Shukla D., ERKENT Ö., Piater J.
FRONTIERS IN NEUROROBOTICS, vol.12, 2018 (SCI-Expanded)
- III. **Hierarchically self-organizing visual placememory**
ERKENT Ö., Karaoguz H., Bozma H. I.
ADVANCED ROBOTICS, vol.31, no.16, pp.865-879, 2017 (SCI-Expanded)
- IV. **RGB-D based place representation in topological maps**
Karaoguz H., ERKENT Ö., Bozma H. I.
MACHINE VISION AND APPLICATIONS, vol.25, no.8, pp.1913-1927, 2014 (SCI-Expanded)
- V. **Bubble space and place representation in topological maps**
ERKENT Ö., Bozma H. I.
INTERNATIONAL JOURNAL OF ROBOTICS RESEARCH, vol.32, no.6, pp.672-689, 2013 (SCI-Expanded)
- VI. **Artificial potential functions based camera movements and visual behaviors in attentive robots**
ERKENT Ö., Bozma H. I.
AUTONOMOUS ROBOTS, vol.32, no.1, pp.15-34, 2012 (SCI-Expanded)
- VII. **Attentive mobile robot visual maps via bubble memory**
Cayci S., ERKENT Ö., Bozma H. I.
PERCEPTION, vol.38, pp.47-48, 2009 (SCI-Expanded)

Articles Published in Other Journals

- I. **Multi-Modal Multi-Task (3MT) Road Segmentation**
Milli E., ERKENT Ö., Yılmaz A. E.
IEEE Robotics and Automation Letters, vol.8, no.9, pp.5408-5415, 2023 (Scopus)
- II. **End-to-End Learning of Semantic Grid Estimation Deep Neural Network with Occupancy Grids**
ERKENT Ö., Wolf C., Laugier C.
UNMANNED SYSTEMS, vol.7, no.3, pp.171-181, 2019 (ESCI)

Refereed Congress / Symposium Publications in Proceedings

- I. **ANLAMSAL BÖLÜTLEME İLE PİKSEL SEVİYESİNDE ANOMALİ TESPİTİNDE DAĞILIM DIŞI VE DEĞİŞEN BAĞLAMLARDA FARKLI VERİ SETİ KULLANIMI**
YILDIZ M. F., SAYGIN A., ERKENT Ö.
8. Uluslararası Mühendislik Bilimleri ve Multidisipliner Yaklaşımlar Kongresi, İstanbul, Turkey, 7 - 08 December 2024
- II. **LAPTNet-FPN: Multi-Scale LiDAR-Aided Projective Transform Network for Real Time Semantic Grid Prediction**
Diaz-Zapata M., Sierra-Gonzalez D., ERKENT Ö., Laugier C., Dibangoye J.
2023 IEEE International Conference on Robotics and Automation, ICRA 2023, London, England, 29 May - 02 June 2023, vol.2023-May, pp.712-718
- III. **LAPTNet: LiDAR-Aided Perspective Transform Network**
Diaz-Zapata M., ERKENT Ö., Laugier C., Dibangoye J., Sierra-Gonzalez D.
ICARCV 2022 - 17th International Conference on Control, Automation, Robotics and Vision, Singapore, 11 December 2022
- IV. **TransFuseGrid: Transformer-based Lidar-RGB fusion for semantic grid prediction**
Salazar-Gomez G., Sierra-Gonzalez D., Diaz-Zapata M., Paigwar A., Liu W., ERKENT Ö., Laugier C.
ICARCV 2022-17th International Conference on Control, Automation, Robotics and Vision, Singapore, 11 December 2022
- V. **Frustum-PointPillars: A Multi-Stage Approach for 3D Object Detection using RGB Camera and LiDAR**
Paigwar A., Sierra-Gonzalez D., ERKENT Ö., Laugier C.
IEEE/CVF International Conference on Computer Vision (ICCV) Workshops, United States Of America, 17 October 2021 - 18 October 2022, pp.2926-2933
- VI. **MultiLane: Lane Intention Prediction and Sensible Lane-Oriented Trajectory Forecasting on Centerline Graphs**
Sierra-Gonzalez D., Paigwar A., Erkent O., Laugier C.
25th IEEE International Conference on Intelligent Transportation Systems, ITSC 2022, Macau, China, 8 - 12 October 2022, vol.2022-October, pp.3657-3664
- VII. **YOLO-based Panoptic Segmentation Network**
Diaz-Zapata M., ERKENT Ö., Laugier C.
IEEE 45TH ANNUAL COMPUTERS, SOFTWARE, AND APPLICATIONS CONFERENCE (COMPSAC 2021), Spain, 12 July 2021
- VIII. **GndNet: Fast ground plane estimation and point cloud segmentation for autonomous vehicles**
Paigwar A., Erkent Ö., Sierra-Gonzalez D., Laugier C.
2020 IEEE/RSJ International Conference on Intelligent Robots and Systems, IROS 2020, Nevada, United States Of America, 24 October 2020 - 24 January 2021, pp.2150-2156
- IX. **Recognize Moving Objects Around an Autonomous Vehicle Considering a Deep-learning Detector Model and Dynamic Bayesian Occupancy**
Hernandez A. E. G., Erkent Ö., Laugier C.
16th IEEE International Conference on Control, Automation, Robotics and Vision (ICARCV), Shenzhen, China, 13 -

15 December 2020, pp.414-420

- X. **Leveraging Dynamic Occupancy Grids for 3D Object Detection in Point Clouds**
Sierra-Gonzalez D., Paigwar A., Erkent Ö., Dibangoye J., Laugier C.
16th IEEE International Conference on Control, Automation, Robotics and Vision (ICARCV), Shenzhen, China, 13 - 15 December 2020, pp.1188-1193
- XI. **Instance Segmentation with Unsupervised Adaptation to Different Domains for Autonomous Vehicles**
Diaz-Zapata M., Erkent Ö., Laugier C.
16th IEEE International Conference on Control, Automation, Robotics and Vision (ICARCV), Shenzhen, China, 13 - 15 December 2020, pp.421-427
- XII. **Attentional PointNet for 3D-Object Detection in Point Clouds**
Paigwar A., Erkent Ö., Wolf C., Laugier C.
32nd IEEE/CVF Conference on Computer Vision and Pattern Recognition (CVPR), California, United States Of America, 16 - 20 June 2019, pp.1297-1306
- XIII. **Semantic Grid Estimation with Occupancy Grids and Semantic Segmentation Networks**
ERKENT Ö., Wolf C., Laugier C.
15th International Conference on Control, Automation, Robotics and Vision (ICARCV), Singapore, Singapore, 18 - 21 November 2018, pp.1051-1056
- XIV. **Modeling Driver Behavior From Demonstrations in Dynamic Environments Using Spatiotemporal Lattices**
Gonzalez D. S., ERKENT Ö., Romero-Cano V., Dibangoye J., Laugier C.
IEEE International Conference on Robotics and Automation (ICRA), Brisbane, Australia, 21 - 25 May 2018, pp.3384-3390
- XV. **Semantic Grid Estimation with a Hybrid Bayesian and Deep Neural Network Approach**
ERKENT Ö., Wolf C., Laugier C., Gonzalez D. S., Romero Cano V.
25th IEEE/RSJ International Conference on Intelligent Robots and Systems (IROS), Madrid, Spain, 1 - 05 October 2018, pp.888-895
- XVI. **It Gets Worse Before it Gets Better: Timing of Instructions in Close Human-Robot Collaboration**
Jensen L. C., Fischer K., Kirstein F., Shukla D., ERKENT Ö., Piater J.
2017 ACM/IEEE International Conference on Human-Robot Interaction, New York, United States Of America, 01 March 2017
- XVII. **Proactive, Incremental Learning of Gesture-Action Associations For Human-Robot Collaboration**
Shukla D., ERKENT Ö., Piater J.
26th IEEE International Symposium on Robot and Human Interactive Communication (RO-MAN), Lisbon, Portugal, 28 August - 01 September 2017, pp.346-353
- XVIII. **Supervised learning of gesture-action associations for human-robot collaboration**
Shukla D., ERKENT Ö., Piater J.
12th IEEE International Conference on Automatic Face and Gesture Recognition (FG), Washington, Kiribati, 30 May - 03 June 2017, pp.778-783
- XIX. **Visual Task Outcome Verification Using Deep Learning**
ERKENT Ö., Shukla D., Piater J.
IEEE/RSJ International Conference on Intelligent Robots and Systems (IROS) / Workshop on Machine Learning Methods for High-Level Cognitive Capabilities in Robotics, Vancouver, Canada, 24 - 28 September 2017, pp.4821-4827
- XX. **A Multi-View Hand Gesture RGB-D Dataset for Human-Robot Interaction Scenarios**
Shukla D., ERKENT Ö., Piater J.
25th IEEE International Symposium on Robot and Human Interactive Communication (IEEE RO-MAN), New York, United States Of America, 26 - 31 August 2016, pp.1084-1091
- XXI. **Integration of Probabilistic Pose Estimates from Multiple Views**
ERKENT Ö., Shukla D., Piater J.
14th European Conference on Computer Vision (ECCV), Amsterdam, Netherlands, 8 - 16 October 2016, vol.9911, pp.154-170

- XXII. **Human Smile Distinguishes between Collaborative and Solitary Tasks in Human-Robot Interaction**
Kirstein F., Fischer K., ERKENT Ö., Piater J.
Proceedings of the Tenth Annual ACM/IEEE International Conference on Human-Robot Interaction Extended Abstracts, New York, United States Of America, 02 March 2015
- XXIII. **The Effects of Social Gaze in Human-Robot Collaborative Assembly**
Fischer K., Jensen L. C., Kirstein F., Stabinger S., ERKENT Ö., Shukla D., Piater J.
7th International Conference on Social Robotics (ICSR), Paris, France, 26 - 30 October 2015, vol.9388, pp.204-213
- XXIV. **General Object Tip Detection and Pose Estimation for Robot Manipulation**
Shukla D., ERKENT Ö., Piater J.
10th International Conference on Computer Vision Systems (ICVS), Copenhagen, Denmark, 6 - 09 July 2015, vol.9163, pp.364-374
- XXV. **Probabilistic detection of pointing directions for human-robot interaction**
Shukla D., ERKENT Ö., Piater J.
International Conference on Digital Image Computing: Techniques and Applications, Adelaide, Australia, 23 - 25 November 2015, pp.601-608
- XXVI. **Long-Term Topological Place Learning**
ERKENT Ö., Bozma H. I.
IEEE International Conference on Robotics and Automation (ICRA), Washington, United States Of America, 26 - 30 May 2015, pp.5462-5467
- XXVII. **Integrating Cue Descriptors in Bubble Space for Place Recognition**
ERKENT Ö., BOZMA AYDIN H. I.
International Conference on Computer Vision Systems, St. Petersburg, Russia, 16 July 2013
- XXVIII. **Place Representation in Topological Maps Based on Bubble Space**
ERKENT Ö., Bozma I.
IEEE International Conference on Robotics and Automation (ICRA), Minnesota, United States Of America, 14 - 18 May 2012, pp.3497-3502
- XXIX. **Color in Attention Control**
ERKENT Ö., Bozma H. I.
IEEE 17th Signal Processing and Communications Applications Conference, Antalya, Turkey, 9 - 11 April 2009, pp.467-470
- XXX. **Saccades and fixating using artificial potential functions**
Ilhan B. D., ERKENT Ö., Bozma H. I.
IEEE/RSJ International Conference on Intelligent Robots and Systems, Beijing, China, 9 - 13 October 2006, pp.5819-5820

Metrics

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