

Assoc. Prof. Cihan Topal

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[Google Scholar](#) • [LinkedIn](#) • [GitHub](#)

SHORT BIO

Cihan Topal is currently an associate professor in the [Department of Artificial Intelligence and Data Engineering](#) at [Istanbul Technical University](#), Turkey. Previously, he was a faculty member in the Department of EEE, at [Eskisehir Technical University](#), Turkey. He worked as a research fellow in the Centre for Vision, Speech and Signal Processing ([CVSSP](#)), University of Surrey, UK in 2019-2020; and worked as a research intern in Real-time Vision and Modeling Department, Siemens Corporate Research, Princeton, NJ, USA in 2008. He received his BSc degree in EEE from Anadolu University, Eskisehir, Turkey in 2005 and joined the faculty as a research assistant in the same department. He received his MSc and PhD degrees in the department of computer engineering in 2008 and 2014, where both of his theses were supported by The Scientific & Technological Research Council of Turkey (TUBITAK).

In 2014, he founded [Visea](#), a tech start-up aims to develop computer vision systems with the scientific and technical know-how acquired by ongoing research activities. Among others, Visea primarily focuses on applications of machine vision, human-computer interaction and augmented reality. In 2016, Cihan received a scholarship from the Newton Fund to participate in the Leaders in Innovation Fellowships (LIF) program, an entrepreneurship and technology commercialization program run by the Royal Academy of Engineering in London. In 2021, the image feature extraction and validation [algorithms](#) that Dr. Topal contributed to the development were integrated into the popular computer vision library OpenCV.

Dr. Topal has more than 60 publications published in refereed journals and conferences, four international patents and 1500+ citations to them.

RESEARCH INTERESTS

- Computer Vision
- Machine Learning
- Augmented Reality
- Biometric Systems
- Human-Computer Interaction
- Geometric Feature Extraction

WORK EXPERIENCE

[Istanbul Technical University](#) [Dept. Artificial Intelligence and Data Engineering](#)
Associate Professor Jun 2023 to present

[Eskisehir Technical University](#) [Dept. Electrical & Electronics Engineering](#)
Associate Professor Sep 2021 to May 2023
Assistant Professor May 2015 to Oct 2021

Courses Taught:

- BİM122 Discrete Computational Structures
- EEM463 Introduction to Image Processing
- EEM528 GPU Computing
- EEM561 Machine Vision

[Centre for Vision, Speech & Signal Processing \(CVSSP\)](#) [University of Surrey, UK](#)
Research Fellow Jan 2019 to Jul 2020

- Contributed several EU and EPSRC funded research projects.
- Co-advised PhD students.

Visea Innovative Information Technologies

Founder & Director

Eskisehir, Turkey

Nov 2014 to present

- Conceiving, planning and developing R&D projects,
- Leading and managing a team consisting of researchers and engineers,
- Consulting companies on new technologies related to CV & ML.

Research Assistant

Oct 2005 to May 2014

Anadolu University, Eskisehir, Turkey

Dept. Electrical and Electronics Engineering

Assisted Courses:

- Advanced Computer Programming, Digital Systems II, Microprocessors I, DSP Hardware, Computer Architecture, Algorithms and Complexity.

Research Intern

2008

Siemens Corporate Research, Princeton, NJ

Real-time Vision and Modeling Department

- DESIRE Project: Implementing a new test platform for learning appearance characteristics of objects from their 3D scans and images.
- Video Conferencing Project: Extending the existing visualization platform to a prototype video conferencing system with intelligent video analysis functionalities.

Undergrad Intern

2004

ASELSAN, Ankara, Turkey

Dept. Communication Systems

- Testing procedures of military grade RF communication devices were performed.

EDUCATION

Ph.D., Computer Engineering

2009-2014

Anadolu University, Eskisehir, Turkey

Dissertation Title: *Design and Implementation of A Real-time Video-Oculographic Gaze Detection and Tracking System*

Advisor: [Prof. Dr. Cuneyt Akinlar](#)

Supported by TUBITAK 1001 - Grant No: 111E053.

M.Sc., Computer Engineering

2005-2008

Anadolu University, Eskisehir, Turkey

Dissertation Title: *Design and Implementation of A Border Router For Seamless Peer-To-Peer (P2P) UDP Communication Using IPv4+4 Addresses*

Advisor: [Prof. Dr. Cuneyt Akinlar](#)

Supported by TUBITAK 1002 - Grant No: 107E166.

B.Sc., Electrical and Electronics Engineering

2000-2005

Anadolu University, Eskisehir, Turkey

Dissertation Title: *Predictive Image Coding*

Advisor: [Prof. Dr. Omer Nezh Gerek](#)

PUBLICATIONS *Journal Publications*

14. S. Shakir, C. Topal, *Unsupervised fabric defect detection with local spectra refinement (LSR)*, Neural Computing and Applications, vol. 36, pg. 1091–1103, 2024.
[\[paper\]](#) [\[dataset\]](#) [\[code\]](#)
13. C. Akinlar, H.K. Kucukkartal, C. Topal, *Accurate CNN-based Pupil Segmentation with an Ellipse Fit Error Regularization Term*, Expert Systems with Applications, vol. 188, February 2022.
[\[paper\]](#)
12. Ll. Cerkezi, C. Topal, *Towards More Discriminative Features for Texture Recognition*, Pattern Recognition, vol.107, November 2020.
[\[paper\]](#) [\[code\]](#)
11. B. Benligiray, C. Topal, C. Akinlar, *S_Tag: A Stable Fiducial Marker System*, Image and Vision Computing, vol.89, pp.158-169, September 2019.
[\[paper\]](#) [\[arXiv\]](#) [\[code\]](#) [\[video\]](#)
10. C. Topal, H.I. Cakir, C. Akinlar, *APPD: Adaptive and Precise Pupil Boundary Detection using Entropy of Contour Gradients*, arXiv preprint arXiv:1709.06366v2.
[\[paper\]](#) [\[video\]](#)
9. B. Benligiray, C. Topal, C. Akinlar, *SliceType: Fast Gaze Typing with a Merging Keyboard*, Journal on Multimodal User Interfaces, vol.13, iss.4, pp.321-334, 2019.
[\[paper\]](#) [\[arXiv\]](#) [\[code\]](#) [\[video1\]](#) [\[video2\]](#)
8. C. Akinlar, C. Topal, *ColorED: Color Edge and Segment Detection by Edge Drawing (ED)*, Journal of Visual Communication and Image Representation, vol.44, pp.82-94, April 2017.
[\[paper\]](#) [\[code\]](#)
7. C. Topal, S. Gunal, O. Koçdeviren, A. Doğan, and Ö.N. Gerek, *A Low-Computational Approach on Gaze Estimation with Eye Touch System*, IEEE Transactions on Cybernetics, vol.44, no.2, Feb. 2014.
[\[paper\]](#) [\[video\]](#)
6. C. Akinlar, C. Topal, *EDCircles: A Real-time Circle Detector with a False Detection Control*, Pattern Recognition, 46(3), 725-740, March 2013.
[\[paper\]](#) [\[code\]](#)
5. C. Topal, C. Akinlar, *Edge Drawing: A Combined Real-Time Edge and Segment Detector*, Journal of Visual Communication and Image Representation, vol.23, no.6, pp.862-872, August 2012. (Recognized by ScienceDirect as one of the Top25 Hottest Articles in the journal in multiple years.)
[\[paper\]](#) [\[code\]](#) [\[video\]](#)
4. C. Akinlar, C. Topal, *EDPF: A Real-time Parameter-free Edge Segment Detector with a False Detection Control*, Int'l Journal of Pattern Recognition and Artificial Intelligence, vol.26, no.1, 2012.
[\[paper\]](#) [\[code\]](#)

3. C. Akinlar, C. Topal, *EDLines: A Real-time Line Segment Detector with a False Detection Control*, Pattern Recognition Letters, vol.32, iss.13, pg. 1633-1642, October 2011. (Recognized by ScienceDirect as one of the Top25 Hottest Articles in the journal in multiple years.)
[\[paper\]](#) [\[code\]](#)
2. C. Topal, C. Akinlar, *Secure Seamless Peer-to-Peer (P2P) UDP Communication Using IPv4 LSRR Option and IPv4+4 Addresses*, Computers and Electrical Engineering, vol.35, no.1, pp. 115-125, January 2009.
[\[paper\]](#)
1. C. Topal, C. Akinlar, *Enabling peer-to-peer communication for hosts in private address realms using IPv4 LSRR option and IPv4+4 addresses*, IET Communications, vol. 3, iss.4, pp. 512–519, 2009.
[\[paper\]](#)

International Conference Publications

27. M. Tharmakulasingam, C. Topal, A. Fernando, and R. La Ragione, *Backward Feature Elimination for Accurate Pathogen Recognition Using Portable Electronic Nose*, IEEE International Conference on Consumer Electronics (ICCE), 2020. [\[paper\]](#)
26. M. Tharmakulasingam, C. Topal, A. Fernando, and R. La Ragione, *Improved Pathogen Recognition using Non-Euclidean Distance Metrics and Weighted kNN*, 6th Int'l Conf. Biomedical and Bioinformatics Engineering, pp. 118-124. 2019. [\[paper\]](#)
25. H.I. Cakir, C. Topal, *An Euclidean Ellipse Comparison Metric for Quantitative Evaluation*, IEEE Int'l Conf. Acoustics, Speech and Signal Processing (**ICASSP**), Calgary, AB, CANADA, 2018. [\[paper\]](#)
24. C. Gacav, B. Benligiray, C. Topal, *Greedy Search for Descriptive Spatial Face Features*, IEEE Int'l Conf. Acoustics, Speech and Signal Processing (**ICASSP**), New Orleans, LA, USA, 2017. [\[paper\]](#)
23. H.I. Cakir, C. Topal, C. Akinlar, *An Occlusion-Resistant Ellipse Detection Method by Joining Coelliptic Arcs*, European Conference on Computer Vision (**ECCV**), Amsterdam, The Netherlands, 2016. [\[paper\]](#)
22. H.I. Cakir, B. Benligiray, C. Topal, *Combining Feature-based and Model-based Approaches for Robust Ellipse Detection*, European Signal Processing Conference (**EUSIPCO**), Budapest, HUNGARY, 2016. [\[paper\]](#)
21. B. Benligiray, C. Topal, *Blind Rectification of Radial Distortion by Line Straightness*, European Signal Processing Conference (**EUSIPCO**), Budapest, HUNGARY, 2016. [\[paper\]](#)
20. H. Gunduz, C. Topal, C. Akinlar, *A Quantitative Assessment of Edge Preserving Smoothing Filters for Edge Detection*, 6th World Conference on Soft Computing (WConSC), Berkeley, USA, May 2016. [\[paper\]](#)
19. B. Benligiray, C. Topal, *Lens Distortion Rectification Using Triangulation Based Interpolation*, 11th Symposium on Visual Computing (ISVC), Las Vegas, USA, December 2015.
[\[paper\]](#) [\[code\]](#)

18. B. Benligiray, H.I. Cakir, C. Topal, C. Akinlar, *Counting Turkish Coins with a Calibrated Camera*, 18th Int'l Conf. Image Analysis and Processing (ICIAP), Genoa, Italy, September 2015. [\[paper\]](#) [\[video\]](#)
17. H. Rahmani, C. Topal, C. Akinlar, *A Parallel Huffman Coder on the CUDA Architecture*, IEEE Int'l Conf. Visual Communication and Image Processing (VCIP), Valetta, MALTA, December 2014. [\[paper\]](#)
16. C. Topal, K. Özkan, B. Benligiray, C. Akinlar, *A Robust CSS Corner Detector Based on The Turning Angle Curvature of Image Gradients*, IEEE Int'l Conf. Acoustics, Speech and Signal Processing (ICASSP), Vancouver, CANADA, May 2013. [\[paper\]](#) [\[video\]](#)
15. H. Sar, C. Topal, N. At, O. N. Gerek, *Improving The Efficiency of Predictive Coders via Adaptive Multiple Predictor Cooperation*, IEEE Int'l Conf. Acoustics, Speech and Signal Processing (ICASSP), Vancouver, CANADA, May 2013. [\[paper\]](#)
14. B. Benligiray, C. Topal, C. Akinlar, *Video-based Lane Detection using a Fast Vanishing Point Estimation Method*, IEEE Int'l Symposium on Multimedia (ISM), Irvine, CA, USA, December 2012. [\[paper\]](#) [\[video\]](#)
13. C. Akinlar, C. Topal, *EDContours: High-Speed Parameter-Free Contour Detection Using EDPF*, IEEE Int'l Symposium on Multimedia (ISM), Irvine, CA, USA, December 2012. [\[paper\]](#)
12. C. Topal, B. Benligiray, C. Akinlar, *On the Efficiency Issues of Virtual Keyboard Design*, IEEE Int'l Conf. Virtual Environments, Human-Computer Interfaces and Measurement Systems (VECIMS), Tianjin, CHINA, 2012. [\[paper\]](#)
11. C. Akinlar, C. Topal, *EDCircles: Real-time Circle Detection by Edge Drawing (ED)*, IEEE Int'l Conf. Acoustics, Speech and Signal Processing (ICASSP), Kyoto, JAPAN, 2012. [\[paper\]](#)
10. O. Ozsen, C. Topal and C. Akinlar, *Parallelizing Edge Drawing Algorithm on CUDA*, IEEE Int'l Conf. Emerging Signal Processing Applications (ESPA), Las Vegas, USA, 2012. [\[paper\]](#)
9. C. Akinlar, C. Topal, *EDLines: Realtime Line Segment Detection by Edge Drawing (ED)*, IEEE Int'l Conf. Image Processing (ICIP), Brussels, BELGIUM, 2011. [\[paper\]](#)
8. C. Topal, O. Ozsen, C. Akinlar, *Real-time Edge Segment Detection with Edge Drawing Algorithm*, IEEE Int'l Symp. Image and Signal Processing and Analysis (ISPA), Dubrovnik, CROATIA, 2011. [\[paper\]](#)
7. K. Ozkan, C. Topal, C. Akinlar, *Corner Detection via Trilateral Filtering of Chain Codes*, Int'l Symp. Innovations in Intelligent Systems and Applications (INISTA), Istanbul, TURKEY, 2011. [\[paper\]](#)
6. C. Topal, C. Akinlar, Y. Genc, *Edge Drawing: A Heuristic Approach to Robust Real-Time Edge Detection*, Int'l Conf. Pattern Recognition (ICPR), Istanbul, TURKEY, 2010. [\[paper\]](#)
5. C. Topal, A. Dogan, O. N. Gerek, *A Wearable Head-Mounted Sensor-Based Apparatus for Eye Tracking Applications*, IEEE Int'l Conf. Virtual Environments, Human-Computer

- Interfaces and Measurement Systems (VECIMS), Istanbul, TURKEY, 2008. [\[paper\]](#)
4. C. Topal, O. N. Gerek, A. Dogan, *A Head-Mounted Sensor-Based Eye Tracking Device: Eye Touch System*, ACM Eye Tracking Research and Applications (ETRA), Savannah, GA, USA, 2008. [\[paper\]](#)
 3. C. Topal, C. Akinlar, *Implementing IPv4+4 Addressing Architecture with IPv4 LSRR Option for Seamless Peer-to-Peer (P2P) Communication*, Int'l Symp. Parallel and Distributed Processing with Applications (ISPA), Niagara Falls, ON, CANADA, 2007. [\[paper\]](#)
 2. C. Topal, O. N. Gerek, *A Novel Lossless Image Compression Approach: "Cooperative Prediction"*, Picture Coding Symposium (PCS), Lisbon, PORTUGAL, 2007. [\[paper\]](#)
 1. C. Topal, O. N. Gerek, *PDF Sharpening for Multichannel Predictive Coders*, European Signal Processing Conference (**EUSIPCO**), Florence, ITALY, 2006. [\[paper\]](#)

National Conference Publications (* indexed by IEEEExplore)

27. A. Solak, C. Topal, *Blind Domain Adaptation For Semantic Segmentation via Edge Attention*, IEEE Signal Processing and Communications Applications Conference (IEEE SİU), Istanbul, Turkey, 2023.* [\[paper\]](#)
26. A. E. Bayar, C. Topal, *Deepfake Detection via Combining Channel and Spatial Attention*, IEEE Signal Processing and Communications Applications Conference (IEEE SİU), Istanbul, Turkey, 2023.* [\[paper\]](#)
25. A. Solak, C. Topal, *DoG-Loss for Semantic Segmentation*, IEEE Signal Processing and Communications Applications Conference (IEEE SİU), Istanbul, Turkey, 2023.* [\[paper\]](#)
24. A. Karazor, A. E. Bayar, H. Cevikalp, C. Topal, *Gaze Estimation by Attention Using a Two-Stream Regression Network*, IEEE Signal Processing and Communications Applications Conference (IEEE SİU), Istanbul, Turkey, 2023.* [\[paper\]](#)
23. A. E. Bayar, C. Topal, *Face Liveness Detection Based on Stereo Imaging*, IEEE Signal Processing and Communications Applications Conference (IEEE SİU), Safranbolu, Turkey, 2022.* [\[paper\]](#)
22. D. Gozler, B. Isik, C. Topal, *A Real-time Queue Tracking Method for Waiting Time Estimation*, IEEE Signal Processing and Communications Applications Conference (IEEE SİU), Safranbolu, Turkey, 2022.* [\[paper\]](#) [\[video\]](#)
21. K. Serdar, H. Güven, C. Topal, *Effect of Loss Functions on Domain Adaptation in Semantic Segmentation*, IEEE Signal Processing and Communications Applications Conference (IEEE SİU), Online, 2021.* [\[paper\]](#)
20. C. Civir, C. Topal, *Robust Landmark Selection for 3D Face Pose Estimation*, IEEE Signal Processing and Communications Applications Conference (IEEE SİU), Sivas, TURKEY, 2019.* [\[paper\]](#) [\[video\]](#)
19. M. Senses, C. Topal, *Real Time Face Swap Based on Patch Warping*, IEEE Signal Processing and Communications Applications Conference (IEEE SİU), Sivas, TURKEY, 2019.* [\[paper\]](#) [\[video\]](#)

18. Ll. Cerkezi, C. Topal, *Gender Recognition with Uniform Local Binary Patterns*, IEEE Signal Processing and Communications Applications Conference (IEEE SİU), İzmir, TURKEY, 2018.* [\[paper\]](#)
17. N. Özbey, C. Topal, *Expression Recognition with Appearance-based Features of Facial Landmarks*, IEEE Signal Processing and Communications Applications Conference (IEEE SİU), İzmir, TURKEY, 2018.* [\[paper\]](#)
16. M. E. Erdem, C. Topal, *Patch Warping Based Face Frontalization*, IEEE Signal Processing and Communications Applications Conference (IEEE SİU), İzmir, TURKEY, 2018.* [\[paper\]](#) [\[video\]](#)
15. S. Shakir, C. Gacav, C. Topal, *Logo Recognition via Fusion of Spatial and Spectral Features*, IEEE Signal Processing and Communications Applications Conference (IEEE SİU), İzmir, TURKEY, 2018.* [\[paper\]](#)
14. M. Ç. Uysal, T. Karapinar, B. Benligiray, C. Topal, *Dataset Augmentation for Accurate Object Detection*, IEEE Signal Processing and Communications Applications Conference (IEEE SİU), İzmir, TURKEY, 2018.* [\[paper\]](#)
13. C. Gacav, B. Benligiray, K. Özkan, C. Topal, *Facial Expression Recognition with FHOG Features*, IEEE Signal Processing and Communications Applications Conference (IEEE SİU), İzmir, TURKEY, 2018.* [\[paper\]](#) [\[video\]](#)
12. U. C. Altın, N. At, C. Topal, *Effect of Distance Metrics on Positioning Accuracy*, IEEE Signal Processing and Communications Applications Conference (IEEE SİU), İzmir, TURKEY, 2018.* [\[paper\]](#)
11. H. Othman, N. At, C. Topal, *Effectiveness of Online RF Fingerprinting for Indoor Localization*, IEEE Signal Processing and Communications Applications Conference (IEEE SİU), İzmir, TURKEY, 2018.* [\[paper\]](#)
10. C. Gacav, B. Benligiray, C. Topal, *Sequential Forward Feature Selection for Facial Expression Recognition*, IEEE Signal Processing and Communications Applications Conference (IEEE SİU), Zonguldak, TURKEY, 2016.* [\[paper\]](#)
9. N. Kazak, M. Koç, B. Benligiray, C. Topal, *A Comparison of Classification Methods for Local Binary Patterns*, IEEE Signal Processing and Communications Applications Conference (IEEE SİU), Zonguldak, TURKEY, 2016.* [\[paper\]](#)
8. B. Benligiray, H.I. Cakir, C. Topal, C. Akinlar, *Geometrik Öznitelik Tabanlı Madeni Para Tanıma*, IEEE Signal Processing and Communications Applications Conference (IEEE SİU), Malatya, TURKEY, 2015.*
7. B. Benligiray, C. Topal, C. Akinlar, Y. Genc, *Quantification of Projective Distortion for Fiducial Markers*, IEEE Signal Processing and Communications Applications Conference (IEEE SİU), Girne, CYPRUS, 2013.* [\[paper\]](#) [\[video\]](#)
6. B. Benligiray, C. Topal, C. Akinlar, *Realtime Circular Object Detection Based on the Statistical Compactness Estimation*, IEEE Signal Processing and Communications Applications Conference, (IEEE SİU), Mugla, TURKEY, 2012.* [\[paper\]](#)
5. C. Topal, K. Ozkan, C. Akinlar, *Corner Detection with Bilateral Filtering of Freeman*

- Codes*, IEEE Signal Processing and Communications Applications Conference (IEEE SÏU), Antalya, TURKEY, 2011.* [\[paper\]](#)
4. C. Topal, A. Dogan, O. N. Gerek, *An Eye-Glasses-Like Wearable Eye Gaze Tracking System*, IEEE Signal Processing and Communications Applications Conference (IEEE SÏU), Aydın, TURKEY, 2008.* [\[paper\]](#)
 3. C. Topal, O. N. Gerek, *Yerel Eşikleme ve Öngörüle Dayalı Kenar Tespiti*, Bilişim2006, Ankara, TURKEY, 2006.
 2. C. Topal, O. N. Gerek, *Yeni Bir Kayıpsız Görüntü Kodlama Tekniğı “Kooperatif Öngörü”*, Bilişim2006, Ankara, TURKEY, 2006.
 1. C. Topal, O. N. Gerek, *Prediction Error PDF Improvement in Multichannel Predictive Coders*, IEEE Signal Processing and Communications Applications Conference (IEEE SÏU), Antalya, TURKEY, 2006.* [\[paper\]](#)

Other Publications

1. C. Topal, C. Civir, *Fusion of Selected Multi-Modal Features For Accurate Face Recognition*, Journal of Engineering Sciences and Design, vol.9, iss.1, pp. 301 – 311, 2021. [\[paper\]](#)
2. M. Koc, C. Topal, *Histogram of Edge Segment Curvatures For Texture Recognition*, Eskişehir Technical University Journal of Science and Technology A- Applied Sciences and Engineering, DOI: 10.18038/aubtda.441568, 2018. [\[paper\]](#)

PATENTS

International Applications

6. **[Granted]** C. Topal, B. Benligiray, "Method and system for realizing character input by means of eye movement," EP3430497, 2022. [\[patent\]](#)
5. **[Granted]** C. Topal, B. Kirisken, "Method, System and Computer Program For Remotely Controlling A Display Device via Head Gestures," EP3572910B1, US11416078, 2022. [\[patent\]](#)
4. **[Granted]** C. Topal, "Augmented reality-based test mechanism," US10983066, 2021. [\[patent\]](#)
3. **[Granted]** C. Topal, B. Benligiray, "A fiducial marker, method for forming the fiducial marker, and system for sensing thereof", US10796183, 2020. [\[patent\]](#)
2. **[Pending]** C. Topal, C. A. Yildirim, M. Aslan, O. O. Ozden, "Retina image annotation, and related training methods and image processing models," 2021/007756.
1. **[Pending]** C. Topal, "Augmented reality based guide system," WO2018056919A1.

National Applications

2. **[Granted]** C. Topal, "Artırılmış Gerçeklik Tabanlı Bir Kılavuz Sistemi," Başvuru No: 2016/13171. [\[patent\]](#)

1. [Granted] C. Topal, B. Benligiray, "Göz Hareketi ile Karakter Girişi Yapma Yöntemi ve Sistemi," Başvuru No: 2016/03526. [patent]
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RESEARCH GRANTS

15. *Development of an Artificial Intelligence Based Driver Monitoring System (DMS) for Advanced Driving Safety*, PI, in conjunction with [Visea](#), TUBITAK¹ - TEYDEB 1501, Grant No: 3230381, 2024 - present.
14. *Artificial Intelligence Based Robotic Detection System for Leakage Control in White Goods Containing Pressurized Gas*, PI, in conjunction with [Visea](#), KOSGEB² R&D and Innovation, 2023 - present.
13. *Cloud Based Customer Counting System with Artificial Intelligence Supported Edge Computing Units in Locations with Person Traffic*, PI, in conjunction with VESTEL & Visea, TUBITAK¹ - TEYDEB 1707, Grant No: 3215136, 2021 - present.
12. *Development of A Cloud Based Predictive Maintenance Management Platform for Industrial Devices*, PI, in conjunction with ServisSoft & Visea, TUBITAK¹ - TEYDEB 1507, Grant No: 7210731, 2021 - 2023.
11. *A 3D Segmentation Network Based on 2D Convolutions for Lung Segmentation*, PI, Eskişehir Technical University - Scientific Research Fund, 2022 - 2023.
10. *A Surface Quality Inspection System for Home Appliances with Artificial Intelligence Supported Robotic Camera*, PI, in conjunction with [Visea](#), KOSGEB² R&D and Innovation, Grant No: 2020-68, 2020 - 2022.
9. *CONTENT4ALL: Personalised Content Creation for the Deaf Community in a Connected Digital Single Market*, Research Fellow, EU H2020-ICT-19-2017, Grant No: 762021, 2017 - 2020. [Project website](#).
8. *Photo Spoofing Sensitive Face Recognition for Mobile Device Authentication*, PI, in conjunction with VESTEL and [Visea](#), TUBITAK¹ - TEYDEB 1501, Grant No: 3180253, 2018 - 2020.
7. *An Analysis and Evaluation Tool for Eye Tracking based Human-Computer Interaction and Usability Studies*, PI, in conjunction with [Visea](#), KOSGEB², Grant No: 05.12.2017/9619, 2018 - 2020.
6. *Remote Interaction System for Digital Signage Displays based on Real-time 3D Face Pose Estimation*, PI, in conjunction with VESTEL and [Visea](#), TUBITAK¹ - TEYDEB 1501, Grant No: 3160404, 2016 - 2019.
5. *Designing an Occlusion-Resistant and Parameter-Free Method for Ellipse Detection in Real Images*, PI, TUBITAK¹ 1001, Grant No: 115E928, 2016 - 2018.
4. *Development of Assistive Systems for Disabled with Video-Oculographic Eye Tracking*, PI, TUBITAK¹ 1512, Grant No: 2140134, 2014.
3. *Design and Implementation of a Real-time Video-Oculographic Gaze Detection and Tracking System*, PhD scholar, Anadolu University, Scientific Research Fund (BAP), Grant No:

1207F113, 2012-2014.

TUBITAK¹ 1001, Grant No: 111E053, \$74.000 2011-2014.

2. *Eye Touch Project, An Eye Tracking System with A Sensor Based Head-Mounted Apparatus*, Researcher, Anadolu University, Scientific Research Fund - BAP, Grant No: 060213, 2006-2008.
1. *Design and Implementation of a Gateway Device for Seamless P2P UDP Communication*, MSc scholar, TUBITAK¹ 1002, Grant No: 107E166, 2007-2008.

¹ **TUBITAK**: The Scientific & Technological Research Council of Turkey.

² **KOSGEB**: Small and Medium Enterprises (SME) Development Organization of Turkey.

PROFESSIONAL ACTIVITIES

- Management Committee Member of Turkey for COST Action CA19142: *Leading Platform for European Citizens, Industries, Academia and Policymakers in Media Accessibility*.
 - Advisor to **Vestel Electronics Corporation**: The leading electronics R&D company of Turkey, one of the top global producers of electronic home appliances, 2017 - present.
 - Advisor to **ServisSoft**: A fast growing startup working on predictive maintenance services based on AI and IoT technologies, 2021 - 2023.
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COMMUNITY SERVICE

- Reviewer for several journals including:
 - Transactions on Image Processing
 - Pattern Recognition
 - Transactions on Cybernetics
 - Transactions on Human-Machine Systems
 - Machine Vision and Applications
 - Journal of Visual Communication and Image Representation
 - TUBITAK ARDEB Panelist for grant proposal evaluation.
 - TUBITAK TEYDEB pre & post-award reviewer.
-

TECHNICAL SKILLS

Proficient or familiar with a vast array of languages, concepts and technologies, including:

- Programming languages: C/C++, C#, Python,
 - CV & ML libraries: OpenCV, PyTorch, DLib, Eigen,
 - Parallel computing tools CUDA, MPI,
 - Object oriented analysis and design.
-