# Cigdem Beyan

## Personal Details


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|---|---|
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## Current Position

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| Position: | Associate Professor (INFO-01/A – Informatics) |
| Department: | Computer Science |
| Institution: | University of Verona, Verona, Italy |

## Education

### Doctor of Philosophy (Ph.D.)

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|---|---|
| Institution: | University of Edinburgh, Edinburgh, United Kingdom |
| School: | School of Informatics |
| Department: | Perception, Action and Behaviour (IPAB) |
| Thesis title: | *Detection of Unusual Fish Trajectories from Underwater Videos* |
| Thesis link: | https://era.ed.ac.uk/handle/1842/10561 |
| First Supervisor: | Prof. Robert (Bob) Fisher |
| Second Supervisor: | Prof. Vittorio Ferrari |
| Duration: | 01/09/2011 – 12/05/2015 |

### Master of Science

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|---|---|
| Institution: | Middle East Technical University (METU), Ankara, Turkey |
| School: | Graduate School of Informatics |
| Department: | Information Systems |
| GPA: | 3.88/4.00 |
| Thesis title: | *Object Tracking for Surveillance Applications Using Thermal and Visible Band Video Data Fusion* |
| Thesis link: | https://tez.yok.gov.tr/UlusalTezMerkezi/tezDetay.jsp?id=ton9HvXgwpdtN9ZRhi-krg&no=HrcNI15lsvz_ErcOlI0IFw |
| Supervisor: | Prof. Alptekin Temizel |
| Duration: | 09/2008 – 12/2010 |

## Research Activities at Institutes and Participation in Research Groups (8)

• **[Ongoing] Associate Professor**. Co-leading the Vision, Images, Patterns and Signals (VIPS) Research Group, Department of Computer Science, University of Verona, Verona, Italy. https://www.di.univr.it/?ent=grupporic&id=4

• From 01/09/2023 to 29/02/2024. **Tenure Track Assistant Professor** (*Ricercatore a tempo determinato - ai sensi dell'art. 24 comma 3 lettera b della Legge 30/12/2010 n. 240*), Department of Management Information and Production Engineering, University of Bergamo, Bergamo, Italy.

• From 01/03/2021 to 31/08/2023. **Assistant Professor** (*Ricercatore a tempo determinato - ai sensi dell'art. 24 comma 3 lettera a della Legge 30/12/2010 n. 240*), Department of Information Engineering and Computer Science, University of Trento, Trento, Italy. https://webapps.unitn.it/du/it/Persona/PER0233089/Curriculum Carried out activities: participation in the research activities of the "Multimedia and Human Understanding Group", directed by Prof. Niculae Sebe and Prof. Elisa Ricci (http://mhug.disi.unitn.it/#/people). Main responsibilities included conducting research within the EU Horizon 2020 projects SPRING (n. 871245), AI4Media (n. 951911), and ARTEMIS (funded by Fondazione Valorizzazione Ricerca, VRT); co-supervision of Ph.D. and Master students (e.g. Francesco Tonino and Martina Rama); involvement in national project proposals including PRIN, SMACT (scientific responsible, not funded), and VRT (co-PI, funded); and participation in the Research Council of Norway-funded project CoastVision as local PI and fundraiser for the University of Trento.

• From 26/04/2021 to 31/08/2023. **Affiliated Researcher**. Italian Institute of Technology (Istituto Italiano di Tecnologia), Genoa, Italy, within the Pattern Analysis and Computer Vision research line, for the project "Understanding human behaviour through (egocentric) action recognition and the study of human-object interactions from acquired image sequences".

• From 02/09/2015 to 28/02/2021. **Research Collaborator (Post-doc equivalent)**. Italian Institute of Technology, Genoa, Italy, within the Pattern Analysis and Computer Vision research line, directed by Prof. Vittorio Murino (02/09/2015 – 31/08/2019) and Dr. Alessio Del Bue (01/09/2019 – 28/02/2021). https://pavis.iit.it/ Carried out activities: research on human behaviour understanding, particularly nonverbal communication analysis in human–human social interactions (social signal processing). These activities involved processing multimodal data and developing novel machine and deep learning architectures achieving state-of-the-art performance. Additional activities included co-supervision of Ph.D. students (Nicolò Carissimi, Muhammad Shahid, Giancarlo Paoletti, Sanket Kumar Thakur), as well as co-organisation, planning, and management of EU projects. The candidate was actively involved in the planning, management, and proposal writing of two EU Horizon 2020 projects (both not funded): OUTFIT (RIA, proposal id: 832944) and WHALE DEAL (IA, proposal id: 101037558).

• From 01/09/2011 to 12/05/2015. **Ph.D. Student**. University of Edinburgh, Edinburgh, United Kingdom. https://homepages.inf.ed.ac.uk/rbf/ Carried out activities: participation in the EU FP7 Fish4Knowledge project (n. 257024), aimed at automatically detecting unusual fish behaviour (trajectories) in unconstrained underwater videos, including video processing and the development of novel supervised and unsupervised learning methods; and development of the Ph.D. thesis, including novel machine learning techniques related to active/online learning, imbalanced data classification, and anomaly detection.

• From 01/01/2009 to 01/03/2010. **Research Fellow**. Middle East Technical University, Ankara, Turkey, within the "Computer Vision and Remote Sensing" laboratory directed by Prof. Alptekin Temizel. https://ii.metu.edu.tr/metu-computer-vision-and-remote-sensing-\research-group Carried out activities: participation in the project "Abandoned Object Detection With Information Fusion of Thermal and Visible Band Images," funded by the Scientific Research Projects Coordination Unit of Middle East Technical University; this work resulted in one publication in an international journal.

• From 01/01/2010 to 31/12/2010. **Research Assistant**. Baskent University, Ankara, Turkey, within the laboratory directed by Prof. Hasan Ogul, working on the project "MicroRNA target

recognition." http://www.hasanogul.com/projects.html

## Research Projects (11)

[*M.Sc. and Ph.D. (co-)supervised projects (see Sec. Thesis Supervision), are not included here.*]

• From 01/05/2024 to 30/10/2025. *Project name: Transfer and Adaptive Learning in Imperfect Multimodal Data Scenarios (TALIM). Role:* **Co-Principal Investigator**. *Funding body:* Ministry of University and Research (MUR). *Short description:* The TALIM project focuses on investigating multimodal learning with imperfect data, including scenarios such as unlabelled, partially labelled, noisy, or imbalanced data. It proposes the development of methods such as self-supervised learning, domain adaptation, and data augmentation to enhance model robustness and adaptability in challenging real-world applications, such as industrial control, behaviour analysis, and healthcare. https://www.di.univr.it/?ent=progetto&id=5994&lang=en

• From 01/11/2021 to 31/12/2025. *Project name: Computer Vision to Expand Monitoring and Accelerate Assessment of Coastal Fish (CoastVision). Role:* **Local PI, fundraiser**. *Funding body:* Research Council of Norway. *Total budget:* Approximately 1,200,000 Euro. *Budget (UNIVR):* Approximately 100,000 Euro. *Number of partners:* 6. *Short description:* CoastVision uses deep learning to refine and extend a computer vision pipeline for detecting, classifying, and sizing key fish species in shallow-water coastal ecosystems, facilitating a transition to fully automated video analysis. Computer vision for re-identifying individuals solely based on their unique visible features is also developed. https://www.hi.no/en/hi/forskning/projects/coastvision

• From 01/04/2021 to 31/08/2023. *Project name: Assistive Robots wiTh EMotIonal Skills (ARTEMIS). Role:* **Co-Principal Investigator** (with Prof. Elisa Ricci and Dr. Federica Arrigoni, University of Trento). *Funding body:* Fondazione Valorizzazione Ricerca (VRT). *Total budget:* 24,900 Euro. *Short description:* ARTEMIS aims to develop new approaches based on artificial intelligence methods that allow social robots to interpret the emotional states of patients and assess their level of comfort in interacting with the robot. https://www.fondazionevrt.it/7-next-generation-2021

• From 01/03/2021 to 31/08/2023. *Project name: FAIR – Future AI Research (PE00000013). Role:* **RTD-a Collaborator** (University of Trento). *Funding body:* MUR PNRR, NextGenerationEU.

• From 01/03/2021 to 31/08/2023. *Project name: AI4Media. Role:* **RTD-a Collaborator** (University of Trento). *Funding body:* EU Horizon 2020 Research and Innovation Programme (GA No. 951911). *Total budget:* Approximately 12,000,000 Euro. *Number of partners:* 30. *Short description:* AI4Media aims to deliver the next generation of core AI advances and training to serve the media sector, while ensuring that European values of ethical and trustworthy AI are embedded in future deployments. https://www.ai4media.eu/consortium/

• From 01/03/2021 to 31/08/2023. *Project name: Socially Pertinent Robots in Gerontological Healthcare (SPRING). Role:* **RTD-a Collaborator** (University of Trento). *Funding body:* EU H2020-ICT Research and Innovation Action (GA No. 871245). *Total budget:* Approximately 8,500,000 Euro. *Number of partners:* 8. *Short description:* SPRING focuses on Socially Assistive Robots (SARs) and their applications in healthcare and psychological well-being. The goal is to develop socially aware robots based on modern statistical and deep-learning methods, supported by state-of-the-art algorithms for computer vision, audio processing, sensor-based control, and spoken dialogue systems. https://spring-h2020.eu/

• From 02/09/2015 to 01/09/2019. *Project name: Multimodal Identification of Emergent Leaders in Small Group Social Interactions. Role:* **Post-Doc**. *Funding body:* Istituto Italiano di

Tecnologia, Genova. *Short description:* The aim of this project was to automatically detect emergent leaders from audio-visual recordings of group interactions. The project investigated machine learning methods for identifying emergent leaders in meeting environments using non-verbal features. https://www.iit.it/web/pattern-analysis-and-computervision/leadership-corpus *Collaborations:* Francesca Capozzi (McGill University), Prof. Cristina Becchio (University of Turin), Prof. Antonio Pierro (Sapienza University of Rome), Sebastiano Vascon (Ca' Foscari University), Prof. Andrew P. Bayliss (University of East Anglia).

• From 01/09/2019 to 29/09/2021. *Project name: Multimodal Nonverbal Behavior Analysis of Public Speakers. Role:* **External Collaborator**. *Collaboration with:* Dr. Omer Sumer, Prof. Ulrich Trautwein, Prof. Enkelejda Kasneci (University of Tübingen). *Funding body:* Leibniz-WissenschaftsCampus Tübingen "Cognitive Interfaces". *Short description:* This project investigated the contribution of nonverbal behavioural cues to estimating presentation competence. Analyses were performed on videos of 251 students and compared to manual ratings according to the Tübingen Instrument for Presentation Competence framework. https://arxiv.org/abs/2105.02636

• From 08/09/2011 to 30/09/2013. *Project name: Fish4Knowledge. Role:* **Ph.D. Student**. *Funding body:* EU Seventh Framework Programme (GA No. 257024). *Number of partners:* 4. *Short description:* Fish4Knowledge developed computer vision techniques for marine ecology. The project analysed 524,000 videos, detecting and classifying 1.4 billion fish instances. https://homepages.inf.ed.ac.uk/rbf/Fish4Knowledge/

• From 01/01/2009 to 31/12/2009. *Project name: Abandoned-Object Detection System Using Thermal and Visible Band Video Cameras. Role:* **Research Fellow**. *Funding body:* METU Scientific Research Projects. *Short description:* Development of an automated system using thermal and RGB video for detecting abandoned objects in indoor environments to assist surveillance operators. https://blog.metu.edu.tr/atemizel/projects/

• From 01/01/2010 to 31/12/2010. *Project name: Probabilistic Modelling of miRNA mRNA Duplexes. Role:* **Research Assistant**. *Funding body:* TUBITAK (Grant No. 110E160). *Short description:* Development of machine learning methods to predict miRNA target genes using dimer and trimer frequency features from miRNA–mRNA duplexes. http://www.hasanogul.com/projects.html

## University-level Teaching Activities in Italy

[*Teaching activities in Turkey and the United Kingdom can be provided upon request.*]

• *Course name:* Human-Computer Interaction: Multimodal Systems. *Role:* **Lecturer**. *Institution:* University of Verona. *CFU:* 4 *Hours:* 12 face-to-face teaching (theory) *Program:* LM in Artificial Intelligence. *Language:* English. *A.A.:* 2025/2026.

• *Course name:* Foundations of Multimodal Learning. *Role:* **Coordinator and Lecturer**. *Institution:* Sapienza University of Rome. *Hours:* 4 face-to-face teaching *Program:* Ph.D. *Language:* English. *A.A:* 2024/2025

• *Course name:* Advanced Programming for AI. *Role:* **Coordinator and Lecturer**. *Institution:* University of Verona. *CFU:* 4 (theory) + 2 (lab) *Hours:* 48 (24+24) face-to-face teaching *Program:* LM in Artificial Intelligence. *Language:* English. *A.A.:* 2024/2025 & 2025/2026.

• *Course name: Machine Learning and Deep Learning: Deep Learning Theory. Role:* **Lecturer**. *Institution:* University of Verona. *CFU:* 4 (theory) *Hours:* 12 face-to-face teaching *Program:* LM in Artificial Intelligence. *Language:* English. *A.A.:* 2024/2025 & 2025/2026.

• *Course name:* Machine Learning and Deep Learning: Machine Learning Theory and Laboratory. *Role:* **Coordinator and Lecturer**, machine learning part. *Institution:* University of Verona. *CFU:* 4 (theory) + 2 (lab) *Hours:* 48 (24+24) face-to-face teaching *Program:* LM in Artificial Intelligence. *Language:* English. *A.A.:* 2024/2025 & 2025/2026.

• *Course name:* Human-Computer Interaction and Interface. *Role:* **Lecturer**. *Institution:* University of Verona. *CFU:* 4 *Hours:* 12 face-to-face teaching (theory) *Program:* LM in Artificial Intelligence. *Language:* English. *A.A.:* 2024/2025.

• *Course name:* Multimodal Learning. *Role:* **Coordinator and Lecturer**. *Institution:* University of Verona. *Hours:* 20 face-to-face teaching *Program:* Ph.D. *Language:* English. *Date:* 17/06/2024–21/06/2024.

• *Course name:* Machine Learning and Artificial Intelligence. *Role:* **Lecturer**. *Institution:* University of Verona. *CFU:* 7 *Hours:* 24 face-to-face teaching *Language:* English. *Program:* LM in Computer Engineering for Robotics and Smart Industry *A.A.:* 2023/2024.

• *Course name:* Introduction to Machine Learning. *Role:* **Lecturer**. *Institution:* University of Trento. *CFU:* 6 *Hours:* 24 face-to-face teaching *Language:* English. *Program:* LM in Data Science program *A.A.:* 2022/2023.

• *Course name:* Introduction to Machine Learning. *Role:* **Lecturer**. *Institution:* University of Trento. *CFU:* 6 *Hours:* 24 face-to-face teaching *Language:* English. *# Registered Students:* 61 *Program:* LM in Data Science program *A.A.:* 2021/2022.

• *Course name:* Human Behavior Analysis with a Social Signal Processing Perspective. *Role:* **Coordinator and Lecturer**, International AI Doctoral Academy (AIDA), https://www.i-aida.org/. *Hours:* 4 online teaching *Level:* Ph.D candidate in AI and higher level AI researcher *Language:* English. *# Registered Students:* 104 *Date:* 23/02/2022–24/02/2022.

• *Course name:* Multimodal Machine Learning. *Role:* **Lecturer**. *Institution:* University of Trento. *CFU:* 3 *Hours:* 10 online teaching *Program* Ph.D. *Language:* English. *# Registered Students:* 52 *A.A:* 2021/2022.

## Presentations at (Inter-)national Conferences, Congresses, and Events

### Presentations at International Conferences and Workshops (14)

• 23rd International Conference on Image Analysis and Processing (ICIAP 2025) to present the paper "MadCLIP: Few-shot Medical Anomaly Detection with CLIP". Date: 18/09/2025. https://sites.google.com/view/iciap25

• **Keynote Speaker** at the Expressive Encounters Workshop held in conjunction with the European Conference on Computer Vision (ECCV) 2024. Date: 29/09/2024. https://expressive-encounters-workshop.github.io/2024/

• 17th International Conference on Advanced Visual Interfaces (AVI 2024) to present the paper "Diffusion-Based Unsupervised Pre-training for Automated Recognition of Vitality Forms" (doi: 10.1145/3656650.3656689).

• 22nd ACM International Conference on Multimodal Interaction (ACM ICMI 2020), to present the paper "Analysis of Face-Touching Behavior in Large Scale Social Interaction Dataset" (doi: 10.1145/3382507.3418876).

• 10th International Workshop on Human Behavior Understanding (HBU) held in conjunction with International Conference on Computer Vision (ICCV 2019) to present the paper "Voice Activity Detection by Upper Body Motion Analysis and Unsupervised Domain Adaptation" (doi: 10.1109/ICCVW.2019.00159).

• 26th ACM Multimedia (ACM MM 2018), to present the paper "Investigation of Small Group Social Interactions Using Deep Visual Activity-Based Nonverbal Features" (doi: 10.1145/3240508.3240685).

• 19th ACM International Conference on Multimodal Interaction (ACM ICMI 2017), to present the paper "Multi-task Learning of Social Psychology Assessments and Nonverbal Features for Automatic Leadership Identification" (doi:10.1145/3136755.3136812).

• 25th ACM Multimedia (ACMMM 2017), to present the paper "Moving as a Leader: Detecting Emergent Leadership in Small Groups using Body Pose" (doi: 10.1145/3123266.3123404).

• 18th ACM International Conference on Multimodal Interaction (ACM ICMI 2016), to present the paper "Detecting emergent leader in a meeting environment using nonverbal visual features only" (doi:10.1145/2993148.2993175).

• 2nd Workshop on Advancements in Social Signal Processing for Multimodal Interaction 2016 (ASSP4MI2016) held in conjunction with the 18th ACM International Conference on Multimodal Interaction (ACM ICMI 2016), to present the paper "Identification of Emergent Leaders in a Meeting Scenario Using Multiple Kernel Learning" (doi: 10.1145/3005467.3005469).

• 20th IEEE International Conference on Image Processing (IEEE ICIP 2013), to present the paper "Detecting Abnormal Fish Trajectories Using Clustered and Labeled Data" (doi: 10.1109/ICIP.2013.6738303).

• 24th British Machine Vision Conference (BMVC 2013), to present the paper "Detection of Abnormal Fish Trajectories Using a Clustering Based Hierarchical Classifier" (doi:10.5244/C.27.21).

• SPIE Defense, Security, and Sensing 2010, to present the paper "Mean-Shift Tracking for Surveillance Applications Using Thermal and Visible Band Data Fusion" (doi: 10.1117/12.882838).

• 3rd International Symposium on Health Informatics and Bioinformatics (HIBIT) 2008, to present the paper "A fuzzy k-NN approach for cancer diagnosis with microarray gene expression data".

**Invited Talks (7)**

• *Title: Unlocking Computer Vision for Automated Behavior Understanding. Venue:* Department of Management Information and Production Engineering, University of Bergamo. *Date:* 03/10/2023.

• *Title: Bridging The Gap Between Target Detection and Socially-Aware Behavior Analysis. Venue:* Department of Science and Technological Innovation (DISIT), University of Eastern Piedmont. *Date:* 12/07/2023. https://disit.uniupo.it/it/media/8736/download?inline

• *Title: On the Way of Automated Behavior Understanding: From Target Detection to Socially-Aware Behavior Analysis. Venue:* Department of Computer Science, University of Verona. *Date:* 20/06/2023. https://www.di.univr.it/?ent=seminario&id=6004&lang=en

• *Title: Recent Advances in Automatic Human Behavior Understanding. Venue:* Department of Computer Science, University of Ankara Yildirim Beyazit University, Turkey. *Date:* 18/11/2022.

• *Title: Machine Learning for Human Behavior Understanding. Venue:* Nonverbal Behavior and Interaction course, Master's in Human-Computer Interaction program, Department of Psychology and Cognitive Science, University of Trento. *Date:* 18/11/2022.

• *Title: Investigation of Social Interactions through Visual Data Analysis. Venue:* Department of Information Engineering and Computer Science, University of Trento. *Date:* 14/10/2020.

• *Title: Social Signal Processing Approaches for Emergent Leadership. Venue:* Department of Multimedia Informatics, Graduate School of Informatics, Middle East Technical University, Ankara, Turkey. *Date:* 27/12/2017. https://ii.metu.edu.tr/announcement/social-signa

l-processing-approaches-dr-cigdem-beyan

## Awards and Distinctions (16)

• Caianiello ICIAP **Paper Award** at 23rd International Conference on Image Analysis and Processing (ICIAP) 2025, for the paper "MADPOT: Medical anomaly detection with CLIP adaptation and partial optimal transport". https://sites.google.com/view/iciap25

• **Outstanding Reviewer Award** (top 5.6%) at IEEE International Conference on Computer Vision and Pattern Recognition (CVPR), 2025. https://cvpr.thecvf.com/Conferences/2025/ProgramCommittee#all-outstanding-reviewer

• Winner of the Associate Professor (PA) selection at the University of Verona, Department of Computer Science (14/02/2024). https://www.univr.it/it/concorsi/personale-docente/professore-associato/chiamata-professore-associato-2023-procedure-selettive/11823

• Winner of the Researcher Type B (RTD-B) selection at the University of Bergamo, Department of Management, Information and Production Engineering (30/06/2023). https://www.unibg.it/bandi/procedura-pubblica-n-3-posti-ricercatore-tempo-determinato-tipo-b-codice-pica-23rtdb001

• Winner of the Researcher Type B (RTD-B) selection at the University of Eastern Piedmont, Department of Science and Technological Innovation (26/06/2023). https://www.uniupo.it/it/concorsi/concorsi-il-personale-docente-e-ricercatore-e-asn/ricercatori-tempo-determinato/codice-bando-2023-rtdb-001-secs-p02-m-sto02-l-lin04-inf01

• Ego4D **Challenge Winner** at the Joint International 3rd Ego4D and 11th EPIC Workshop (CVPR 2023), 1st place in the Forecasting: Short-term hand-object prediction track (19/06/2023). https://sites.google.com/view/ego4d-epic-cvpr2023-workshop/?pli=1 https://ego4d-data.org/workshops/cvpr23/#

• ELLIS (European Laboratory for Learning and Intelligent Systems) Membership (20/06/2022). https://ellis.eu/members

• **Outstanding Reviewer Award** at IEEE International Conference on Computer Vision and Pattern Recognition (CVPR), 2022. https://cvpr2022.thecvf.com/outstanding-reviewers

• Winner of the Researcher Type A (RTD-A) selection at the University of Trento, Department of Information Engineering and Computer Science. https://www.unitn.it/ateneo/bando-dr-valcomp/64256/valutazione-comparativa-a-n-1-posto-di-ricercatore-post-doc-art-24-co-3-lett-a-l-2402010-settore-c

• **Associate Fellow** of the United Kingdom Higher Education Academy in recognition of attainment against the UK Professional Standards Framework for teaching and learning support in higher education (18/11/2014). The recognition confirms knowledge of teaching methodologies and experience in higher education teaching in the UK and abroad. https://www.advance-he.ac.uk/fellowship/associate-fellowship

• Edinburgh Global Overseas **Research Scholarship**, University of Edinburgh (01/09/2011 – 31/08/2014).

• Principal **Career Development Scholarship**, University of Edinburgh (01/09/2011 – 31/08/2014).

• **Best Thesis Award** for Master of Science Thesis, Prof. Dr. Mustafa N. Parlar Education and Research Foundation, METU, 2011. https://parlar.org.tr/

• **Best Thesis Award** for Postgraduate Thesis (MSc and PhD), Middle East Technical Uni-

versity, Academic Year 2010–2011. https://ii.metu.edu.tr/graduate-awards

• Alper Atalay **Best Student Paper Award** (1st place), 19th IEEE SIU 2011, for the paper "Detection of Abandoned Objects Using Thermal and Visible Band Tracking" (22/04/2011). https://ieeexplore.ieee.org/stamp/stamp.jsp?arnumber=5929600 http://vpa.sabanciuniv.edu/links/bupam/alper/odul.htm

• SPIE Student **Travel Grant**, SPIE Defense, Security, and Sensing Symposium (April 2011).

## Participation in Editorial Boards and Program Committees

### Editorial Board Memberships (5)

• **Associate Editor**, Pattern Recognition Journal (SJR ranking: Q1). *Period:* From 02/2026 – Ongoing. https://www.sciencedirect.com/journal/pattern-recognition/about/editorial-board

• **Associate Editor**, IEEE Transactions on Affective Computing (SJR ranking: Q1). *Period:* From 05/2025 – Ongoing. https://www.computer.org/csdl/journal/ta/about/107327

• **Guest Editor**, International Journal of Social Robotics (SJR ranking: Q1). *Period:* From 03/2023 – 08/2024. *Special issue: Social and Cognitive Interactions in the Open World. Co-editors:* Dr. Yiming Wang (Fondazione Bruno Kessler, Italy), Prof. Fei Chen (The Chinese University of Hong Kong, Hong Kong), Dr. Séverin Lemaignan (PAL Robotics, Spain). https://link.springer.com/collections/djhhbeicdb

• **Associate Editor**, ICES Journal of Marine Science (SJR ranking: Q1). *Period:* From 18/09/2018 – Ongoing. https://academic.oup.com/icesjms/pages/Editorial_Board ICES JMS has an impact factor of 3.9 (SJR ranking: Q1) and was ranked 13th out of 113 Marine and Freshwater Biology journals in 2022. Cigdem Beyan handles submissions related to computer vision and machine learning applications in marine science, corresponding to approximately 20 articles per year. Additionally, together with Dr. Howard I. Browman (Institute of Marine Research, Norway), she developed and edited the special issue *Applications of Machine Learning and Artificial Intelligence in Marine Science* (March 2019 – August 2020). https://academic.oup.com/icesjms/article/77/4/1267/5873749

• **Guest Editor**, Frontiers in Robotics and AI (SJR ranking: Q1). *Period:* 2018–2020. *Research topic: Computational Approaches for Human-Human and Human-Robot Social Interactions. Co-editors:* Prof. Vittorio Murino (University of Verona, Italy; Huawei Technologies, Ireland), Dr. Gentiane Venture (Tokyo University of Agriculture and Technology, Japan), Dr. Agnieszka Wykowska (IIT S4HRI, Italy). https://www.frontiersin.org/research-topics/8447/computational-approaches-for-human-human-and-human-robot-social-interactions

### Organization of International Conferences (6)

• **Doctoral Consortium Co-chair**, 19th European Conference on Computer Vision (ECCV 2026). https://eccv2024.ecva.net/Conferences/2026/Committees

• **Doctoral Consortium Co-chair**, 18th European Conference on Computer Vision (ECCV 2024). https://eccv2024.ecva.net/Conferences/2024/Committees

• **Social Media Co-chair**, 33rd IEEE International Conference on Robot and Human Interactive Communication (RO-MAN 2024). https://www.ro-man2024.org/overview/organizingcommittee

• **Publicity Co-chair**, 20th IEEE International Conference on Advanced Robotics and its

Social Impacts (IEEE ARSO 2024). https://ieeexplore.ieee.org/stamp/stamp.jsp?arnumber=10557796

• **Proceedings Co-chair**, 17th International Conference on Advanced Visual Interfaces (AVI 2024). https://avi2024.dibris.unige.it/committees

• **Demo and Exhibition Chair**, 18th IEEE International Conference on Automatic Face and Gesture Recognition (FG 2024). https://fg2024.ieee-biometrics.org/

**Area Chair (Senior Committee Member) at the International Conferences (15)**

• 28th ACM International Conference on Multimodal Interaction (ACM ICMI) 2026, Napoli, Italy.

• The IEEE/CVF Conference on Computer Vision and Pattern Recognition (CVPR) 2026, Denver, USA.

• 20th IEEE Conference on Automatic Face and Gesture Recognition (FG) 2026, Kyoto, Japan.

• 36th British Machine Vision Conference (BMVC) 2025, Sheffield, UK.

• 27th ACM International Conference on Multimodal Interaction (ACM ICMI) 2025.

• IEEE International Conference on Robotics and Automation (ICRA) 2025, Atlanta, USA.

• 35th British Machine Vision Conference (BMVC) 2024, Glasgow, UK.

• 12th International Conference on Affective Computing & Intelligent Interaction (ACII) 2024, Glasgow, UK. https://acii-conf.net/2024/people/senior-program-committee/

• 26th ACM International Conference on Multimodal Interaction (ACM ICMI) 2024, San José, Costa Rica. https://icmi.acm.org/2024/people/

• 18th European Conference on Computer (ECCV) 2024, Milan, Italy. https://eccv.ecva.net/Conferences/2024/AreaChairs

• IEEE International Conference on Robotics and Automation (ICRA) 2024, Yokohama, Japan.

• 34th British Machine Vision Conference (BMVC) 2023, Aberdeen, UK. https://bmvc2023.org/people/area-chairs/

• 33rd British Machine Vision Conference (BMVC) 2022, London, UK. https://bmvc2022.org/people/area-chairs/

• 24th ACM International Conference on Multimodal Interaction (ACM ICMI) 2022, Bangalore, India. https://icmi.acm.org/2022/people/

• 32nd British Machine Vision Conference (BMVC) 2021, Virtual, UK https://www.bmvc2021-virtualconference.com/people/area-chairs/

**Session Chair in International Conferences (1)**

• The chair of the Social Signal Processing Breakout Discussion Session on 27/10/2020 at the 22nd ACM International Conference on Multimodal Interaction (ACM ICMI) 2020. https://twitter.com/AcmIcmi/status/1321089713629966340

**Program / Technical Committee Member / Reviewer of International Conferences/Workshops (53)**

• IEEE International Conference on Robotics & Automation (ICRA) 2026

• Conference on Neural Information Processing Systems (NeurIPS) 2022, 2024, 2026

- IEEE / CVF Computer Vision and Pattern Recognition (CVPR) 2022, 2023, 2024, 2025
- European Conference on Computer Vision (ECCV) 2020
- International Conference on Computer Vision (ICCV) 2023, 2025
- ACM International Conference on Multimedia (ACM MM) 2019, 2020, 2021, 2022, 2024, 2025, 2026
- International Conference on Machine Learning (ICML) 2022, 2023, 2025
- International Conference on Learning Representations (ICLR) 2022, 2024, 2025, 2026
- IEEE / RSJ International Conference on Intelligent Robots and Systems (IROS) 2022, 2023
- ACM International Conference on Multimodal Interaction (ACM ICMI) 2019, 2020, 2021
- IEEE/CVF Winter Conference on Applications of Computer Vision (WACV) 2021, 2023
- ACM / IEEE International Conference on Human-Robot Interaction (HRI) 2023
- International Conference on Pattern Recognition (ICPR) 2014, 2016, 2018, 2020
- International Conference on Affective Computing and Intelligent Interaction (ACII) 2019, 2021, 2024
- International Conference on Image Analysis and Processing (ICIAP) 2021
- International Conference on Motion and Computing (MOCO) 2018, 2020
- International Conference on Human-Computer Interaction Theory and Applications (HUCAPP) 2019, 2020, 2021, 2022
- Doctoral Consortium of the Int. Conf. on Affective Computing and Intelligent Interaction (ACII) 2019, 2024
- First Multimodal Banquet: Exploring Innovative Technology for Commensality and Human-Food Interaction (CoFI2024) ICMI 2024 https://cofi2024.github.io/committees.html
- International Workshop on Corpora and Tools for Social skills annotation @ICMI2021 https://sites.google.com/view/cats2021workshop/people?authuser=0
- ECCV Workshop on Multimodal Learning and Applications (MULA) 2018
- ICCV Workshop on Action Recognition with a Large Number of Classes (THUMOS) 2013

**Reviewer in International Journals (20)**

- IEEE Transactions on Pattern Analysis and Machine Intelligence
- IEEE Transactions on Multimedia
- IEEE Transactions on Affective Computing
- IEEE Transactions on Knowledge and Data Engineering
- IEEE Transactions on Cognitive and Developmental Systems
- International Journal of Computer Vision
- Pattern Recognition
- Computer Vision and Image Understanding
- Machine Vision and Applications
- Multimedia Systems
- IEEE Access
- PLOS ONE
- IET Image Processing

- Expert Systems with Applications
- EURASIP Journal on Image and Video Processing
- ICES Journal of Marine Science
- Frontiers Psychology
- Electronics Letters
- IEEE Robotics and Automation Letters
- Encyclopedia of Image Processing

## Reviewer of Research Funding Proposals (1)

[Only the research projects that are not restricted from being disclosed are included.]

• Grant Provider: National Science Centre Poland. Funding Scheme: OPUS-26. Proposal Title: Adapting Visual Generative Models for Pattern Discovery and Data Manipulation. Review submission date: 13/03/2024.

## External Reviewer of the Doctoral Thesis and Participation in Postgraduate Committees (5)

• Ahmet Pala, *Advanced Machine Learning Methods for Multifrequency Acoustic Data*, University of Bergen, Norway. (Discussion date: 12/05/2025).

• Elia Peruzzo, *Interactive and Controlled Visual Content Generation*, University of Trento, Italy. (Discussion date: 28/03/2025).

• Yasin Yari, *Machine Learning and Ultrasound for Smart Monitoring of the Maturation State in Atlantic Salmon*, Norwegian University of Science and Technology, Trondheim, Norway. (Discussion date: 10/10/2024).

• Nicola Webb, *From Simulation to Real-World: Measuring Social Engagement for Social Robots*, The University of The West of England, Bristol, UK. (Discussion date: 01/08/2024).

• Muhammad Najam Dar, *Deep Learning based Emotion Charting for Healthy and Cognitively Impaired Subjects using Physiological Signals*, National University of Sciences and Technology (NUST), Pakistan. (Discussion date: 08/12/2022).

## Workshop Organizer in International Conferences (3)

• **Main Organizer** of Workshop on Social and Cognitive Interactions for Assistive Robotics (SCIAR) held in conjunction with the 2022 IEEE/RSI International Conference on Intelligent Robots and Systems (IROS 2022) on 27/10/2022 in Kyoto, Japan. Co-organizers: Yiming Wang (Fondazione Bruno Kessler, Italy), Fei Chen (The Chinese University of Hong Kong, Hong Kong SAR), Séverin Lemaignan (PAL Robotics, Spain), Elisa Ricci (University of Trento, Fondazione Bruno Kessler, Italy). The workshop was sponsored by the EU Horizon 2020 Spring project and PAL Robotics, endorsed by 4 IEEE RAS Technical Committees: Cognitive Robotics, Robot Learning, Neuro-Robotics Systems, and Human-Robot Interaction and Coordination. It included 7 distinguished keynote speakers and 11 papers' oral presentations. More information can be found at: https://sciar-workshop.github.io/.

• **Co-organizer** of the 2nd Workshop on Applications of Egocentric Vision (EgoApp), held in conjunction with the International Conference on Pattern Recognition (ICPR) 2020 on 10/01/2021 in Milan, Italy. The workshop was organized together with Maya Aghaei (NHL

Stenden University, The Netherlands), Fernando De la Torre (Facebook Research, USA), Vittorio Murino (Huawei Technologies, Ireland), Lorenzo Natale (IIT Humanoid Sensing and Perception, Italy) and Alessio Del Bue (IIT PAVIS, Italy). More information can be found at: https://egoappworkshop2020.wordpress.com/.

• **Co-organizer** of Applications of Egocentric Vision Workshop (EgoApp), held in conjunction with the British Machine Vision Conference (BMVC) 2019 on 12/09/2019 in Cardiff, United Kingdom. The workshop was organized together with Maya Aghaei (IIT PAVIS, Italy), Fernando De la Torre (Facebook Research, USA), and Vittorio Murino (IIT PAVIS, Italy). More information can be found at: https://egoappworkshop.wordpress.com/.

## Thesis Supervision

### Ph.D Thesis Supervision (12)

• From 11/2025 Ph.D co-supervisor of Yu Han (IIT, UNIGE) with Prof. Vittorio Murino (UNIVR, IIT).

• From 11/2025 Ph.D co-supervisor of Ludovica Genovese (IIT, UNIGE) with Prof. Vittorio Murino (UNIVR, IIT).

• From 10/2025 Ph.D supervisor of Navid Aslan Khani Khameneh (UNIVR).

• From 11/2024 Ph.D co-supervisor of Fanqi Yu (IIT, UNIGE) with Prof. Vittorio Murino (UNIVR, IIT).

• From 10/2024 Ph.D co-supervisor of Francesco Dibitonto (UNIVR) with Prof. Vittorio Murino (UNIVR).

• From 10/2024 Ph.D co-supervisor of Alessandro Venaruzzo (UNIVR) with Prof. Matteo Cristani (UNIVR).

• From 11/2022 Ph.D co-supervisor of Francesco Tonini (UNITN) with Prof. Elisa Ricci (UNITN).

• From 05/2024 to 12/2025 Ph.D co-supervisor of Andrea Toaiari (UNIVR) with Prof. Marco Cristani (UNIVR). Thesis title: Deep Learning for Human Behaviour Understanding: A Comprehensive Study of Trajectory, Pose, and Gaze in Social and Human-Robot Interaction Scenarios https://tesidottorato.depositolegale.it/handle/20.500.14242/202922

• From 11/2020 to 04/2024 Ph.D co-supervisor of Sanket Thakur with Alessio Del Bue (IIT). Thesis title: Social-Physical Interaction Analysis for Egocentric Videos https://iris.unige.it/handle/11567/1168815

• From 11/2019 to 03/2023 Ph.D co-supervisor of Giancarlo Paoletti (IIT, UNIGE) together with Alessio Del Bue (IIT) and Jacopo Cavazza (IIT). Thesis title: Unsupervised Human Action Recognition Using 3D Skeleton Poses https://iris.unige.it/handle/11567/1109462

• From 11/2017 to 03/2021 Ph.D co-supervisor of Muhammad Shahid (IIT, UNIGE) with Prof. Vittorio Murino (IIT). Thesis title: Social Interactions Analysis through Deep Visual Nonverbal Features https://iris.unige.it/handle/11567/1040976

• From 11/2015 to 02/2019 Ph.D co-supervisor of Nicolò Carissimi (IIT, UNIGE) with Prof. Vittorio Murino (IIT). Thesis title: Investigating Social Interactions Using Multi-Modal Nonverbal Features https://iris.unige.it/handle/11567/940931

### Master of Science Thesis Supervision (7)

• From 06/2025 to 03/2026, supervisor of Chiara Venturi (Laurea Magistrale in Artificial Intelligence) at the University of Verona. Thesis title: AMA ROOT CAUSE: an AI based system for defect cause identification and process optimization in eyewear production.

• From 03/2025 to 10/2025, supervisor of Emil Alizada (Laurea Magistrale in Artificial Intelligence) at the University of Verona. Thesis title: Leveraging Clip for Multimodal Medical Anomaly Classification: A Continual Learning Approach.

• From 09/2023 to 03/2024, supervisor of Andrea Appiani (Laurea Magistrale in Informatica) at the University of Bergamo. Thesis title: Analisi sull'Efficacia di Vision Language Models per attività di Visual Voice Activity Detection.

• From 02/2023 to 03/2024, co-supervisor of Gianmarco Antignani (Laurea Magistrale in Human Computer Interaction) at the University of Trento. Thesis title: Measuring the Engagement in Human-Robot Interaction Using Computer Vision and Machine Learning.

• From 04/2023 to 12/2023, supervisor of Noemi Canovi (Laurea Magistrale in Artificial Intelligence) at the University of Trento. Thesis title: Fish Behavior Classification through Trajectory-based Generative Model Pretraining https://webapps.unitn.it/Biblioteca/it/Web/TesiDocente/195573

• From 07/2022 to 10/2022, co-supervisor of Martina Rama (Laurea Magistrale in Matematica) at the University of Trento with Prof. Elisa Ricci (UNITN) and Federica Arrigoni (UNITN). Thesis title: Automatic Social Group Matching in Dynamic Crowded Environments https://webapps.unitn.it/du/it/Persona/PER0233089/Tesi

• From 09/2021 to 03/2022, co-supervisor of Francesco Tonini (Master thesis, Laurea Magistrale in Informatica) at the University of Trento with Prof. Elisa Ricci (UNITN). Thesis title: I know where you are looking at: detecting people's gaze with a multimodal approach https://webapps.unitn.it/du/it/Persona/PER0233089/Tesi

### Internship Supervisor (5)

• From 07/2025 to 07/2025, supervisor of Ehsan Karimi (UNIVR): Animal re-identification.

• From 05/2025 to 05/2025, supervisor of Chiara Venturi (UNIVR, Luxottica): Understanding Galvanic Deposition in Eyewear Frame Manufacturing Through Explainable Machine Learning.

• From 03/2023 to 06/2023, supervisor of Kheder Yazgi (UNITN): Modeling of commensal activities of individuals and groups.

• From 03/2023 to 04/2023, supervisor of Noemi Canovi (UNITN): Analysis on fish's behavior using deep learning.

• From 10/2021 to 03/2022, supervisor of Martina Rama (UNITN): Studio e implementazione di soluzioni per analizzare comportamenti umani non verbali e dedurre modelli sociali/emotivi rilevanti.

## Institution Activities (7)

• [Ongoing] Member of the Faculty Board of the PhD in Computer Science, University of Verona.

• [Ongoing] Member of the Faculty Board of the National PhD Program in Biodiversity (40th cycle).

• [Ongoing] Member of the Teaching College of Computer Science, Department of Computer

Science, University of Verona.

• From 01/03/2024 to 30/09/2024, member of the Interuniversity Teaching College of Information Engineering, Department of Engineering for Medicine and Innovation, University of Verona.

• From 23/10/2023 to 29/02/2024, member of the Interdisciplinary Working Group on Artificial Intelligence, representing the Department of Management, Information, and Production Engineering, University of Bergamo. https://www.unibg.it/node/16191

• From 01/09/2023 to 29/02/2024, member of the Interuniversity Teaching College of Information Engineering, Department of Management, Information, and Production Engineering, University of Bergamo.

• From 01/09/2023 to 29/02/2024, member of the Council of the Department of Management, Information, and Production Engineering, University of Bergamo.

## The List of Publications

**Google Scholar (based on 14/05/2026)**
https://scholar.google.com/citations?user=VmjUxckAAAAJ&hl=en # of citations: 2093 H-index: 27 i10-index: 46

**SCOPUS (based on 14/05/2026)**
https://www.scopus.com/authid/detail.uri?origin=resultslist&authorId=43260919000&zone= # of citations: 1259 H-index: 21

### Editorial Activity (2)

[**E02**] **Beyan, C.** & Browman, H. I. (2020). Setting the stage for the machine intelligence era in marine science. *ICES Journal of Marine Science, 77*(4), 1267–1273.
https://doi.org/10.1093/icesjms/fsaa084 (SJR: Q1)

[**E01**] **Beyan, C.**, Murino, V., Venture, G., & Wykowska, A. (2020). Editorial: Computational approaches for human-human and human-robot social interactions. *Frontiers in Robotics and AI, 7*, 55.
https://doi.org/10.3389/frobt.2020.00055 (SJR: Q2)

### Book Chapters (3)

[**B03**] **Beyan, C.** Unusual trajectory detection: Advances. In P. A. Laplante (Ed.), *Encyclopedia of Image Processing* (pp. 766–781). Taylor & Francis Group.
https://doi.org/10.1201/9781351110273-140000116
https://books.google.it/books?hl=en&lr=&id=jIqADwAAQBAJ&oi=fnd&pg=PP1&ots=b5PMSYAnrU&sig=2TgoqTo6iwDgoOOkAka5BJdve7g&redir_esc=y#v=onepage&q&f=false

[**B02**] **Beyan, C.** Fish behavior analysis. In Chen-Burger et al. (Eds.), *Fish4Knowledge: Collecting and analyzing massive coral reef fish video data*. Springer.
https://doi.org/10.1007/978-3-319-30208-9

[**B01**] **Beyan, C.**, & Fisher, R. B. (Year not specified). Hierarchical decomposition for unusual fish trajectory detection. In Zhou et al. (Eds.), *Computer vision and pattern recognition in environmental informatics*. IGI Global.
https://doi.org/10.4018/978-1-4666-9435-4.ch001

**Peer-reviewed International Journal Publications (26)**

[**IJ26**] **Beyan, C.**, Tur, A. O., & Karimi, E. (2026). From species-specific models to universal re-ID: A survey of animal re-identification. *Information Fusion, 133*, 104323. https://doi.org/10.1016/j.inffus.2026.104323 (SJR: Q1)

[**IJ25**] Sørdalen, T. K., Malde, K., Sauvaitre, C., Skiftesvik, A. B., **Beyan, C.**, Larsen, T., & Halvorsen, K. T. (2026). A wild fish image dataset for individual re-identification and phenotyping. *Scientific Data*. https://doi.org/10.1038/s41597-026-07045-1 (SJR: Q1)

[**IJ24**] Alameda-Pineda, X., Addlesee, A., Hernández García, D., et al. (2025). Socially pertinent robots in gerontological healthcare. *International Journal of Social Robotics, 17*, 3047–3068. https://doi.org/10.1007/s12369-025-01330-6 (SJR: Q1)

[**IJ23**] Appiani, A., & **Beyan, C.** (2025). VAD-CLVA: Integrating CLIP with LLaVA for voice activity detection. *Information, 16*(3), 233. https://doi.org/10.3390/info16030233 (SJR: Q2)

[**IJ22**] Canovi, N., Ellis, B. A., Sørdalen, T. K., Allken, V., Halvorsen, K. T., Malde, K., & **Beyan, C.** (2024). Trajectory-based fish event classification through pre-training with diffusion models. *Ecological Informatics, 82*, 102733. https://doi.org/10.1016/j.ecoinf.2024.102733 (SJR: Q1)

[**J21**] Thakur, S., **Beyan, C.**, Morerio, P., Murino, V., & Del Bue, A. (2024). Anticipating next active objects for egocentric videos. *IEEE Access, 12*, 61767–61779. https://doi.org/10.1109/ACCESS.2023.0322000 (SJR: Q1)

[**J20**] **Beyan, C.**, Vinciarelli, A., & Del Bue, A. (2023). Co-located human-human interaction analysis using nonverbal cues: A survey. *ACM Computing Surveys, 56*(5), 1–41. https://doi.org/10.1145/3626516 (SJR: Q1)

[**J19**] D'Inca, M.$^\star$, **Beyan, C.**$^\star$, Niewiadomski, R., Barattin, S., & Sebe, N. (2023). Unleashing the transferability power of unsupervised pre-training for emotion recognition in masked and unmasked facial images. *IEEE Access, 11*, 90876–90890. https://doi.org/10.1109/ACCESS.2023.3308047 (SJR: Q1) $^\star$ equal contribution

[**J18**] Paoletti, G., **Beyan, C.**, & Del Bue, A. (2023). SKELTER: Unsupervised skeleton action denoising and recognition using transformers. *Frontiers in Computer Science, 5*. https://doi.org/10.3389/fcomp.2023.1203901 (SJR: Q2)

[**J17**] Niewiadomski, R., **Beyan, C.**, & Sciutti, A. (2023). Affect recognition in hand-object interaction using object-sensed tactile and kinematic data. *IEEE Transactions on Haptics, 16*(1), 112–117. https://doi.org/10.1109/TOH.2022.3230643 (SJR: Q2)

[**J16**] Paoletti, G., **Beyan, C.**, & Del Bue, A. (2022). Graph Laplacian-improved convolutional residual autoencoder for unsupervised human action and emotion recognition. *IEEE Access, 10*, 131128–131143. https://doi.org/10.1109/ACCESS.2022.3229478 (SJR: Q1)

[**J15**] **Beyan, C.**, Karumuri, S., Volpe, G., Camurri, A., & Niewiadomski, R. (2023). Modeling multiple temporal scales of full-body movements for emotion classification. *IEEE Transactions on Affective Computing, 14*(2), 1070–1081. https://doi.org/10.1109/TAFFC.2021.3095425 (SJR: Q1)

[**J14**] **Beyan, C.**, Shahid, M., & Murino, V. (2021). RealVAD: A real-world dataset and method for voice activity detection by body motion analysis. *IEEE Transactions on Multimedia, 23*, 2071–2085. https://doi.org/10.1109/TMM.2020.3007350 (SJR: Q1)

[**J13**] **Beyan, C.**, Zunino, A., Shahid, M., & Murino, V. (2021). Personality traits classification using deep visual activity-based nonverbal features. *IEEE Transactions on Affective Computing, 12*(4), 1084–1099. https://doi.org/10.1109/TAFFC.2019.2944614 (SJR: Q1)

[**J12**] Capozzi, F., **Beyan, C.**, Pierro, A., Koul, A., Murino, V., Livi, S., Bayliss, A. P., & Becchio, C. (2019). Tracking the leader: Gaze behavior in group interactions. *iScience, 16*, 242–249. https://doi.org/10.1016/j.isci.2019.05.035 (SJR: Q1)

[**J11**] **Beyan, C.**, Katsageorgiou, V. M., & Murino, V. (2019). A sequential data analysis approach to detect emergent leaders. *IEEE Transactions on Multimedia, 21*(8), 2107–2116. https://doi.org/10.1109/TMM.2019.2895505 (SJR: Q1)

[**J10**] **Beyan, C.**, Katsageorgiou, V. M., & Fisher, R. (2018). Extracting statistically significant behaviour from fish tracking data. *IET Computer Vision, 12*(2), 162–170. https://doi.org/10.1049/iet-cvi.2016.0462 (SJR: Q2)

[**J09**] **Beyan, C.**, Capozzi, F., Becchio, C., & Murino, V. (2018). Prediction of leadership style using audio and visual nonverbal features. *IEEE Transactions on Multimedia, 20*(2), 441–456. https://doi.org/10.1109/TMM.2017.2740062 (SJR: Q1)

[**J08**] **Beyan, C.**, Boom, B. J., Liefhebber, J., Shao, K. T., & Fisher, R. (2015). Natural swimming speed of *Dascyllus reticulatus* increases with water temperature. *ICES Journal of Marine Science, 72*(8), 2506–2511. https://doi.org/10.1093/icesjms/fsv104 (SJR: Q1)

[**J07**] **Beyan, C.**, & Fisher, R. (2015). Classifying imbalanced data sets using similarity-based hierarchical decomposition. *Pattern Recognition, 48*(5), 1653–1672. https://doi.org/10.1016/j.patcog.2014.10.032 (SJR: Q1)

[**J06**] **Beyan, C.**, & Temizel, A. (2015). A multimodal approach for tracking people and belongings. *Imaging Science Journal, 63*(4), 192–202. https://doi.org/10.1179/1743131X14Y.0000000101 (SJR: Q3)

[**J05**] McDonagh, S., **Beyan, C.**, Huang, P. X., & Fisher, R. (2015). Applying semi-synchronised task farming to large-scale vision problems. *International Journal of High Performance Computing Applications, 29*(4), 437–460. https://doi.org/10.1177/1094342014532965 (SJR: Q2)

[**J04**] Boom, B. J., He, J., Palazzo, S., Huang, P. X., **Beyan, C.**, Chou, H., Lin, F., Spampinato, C., & Fisher, R. (2014). A research tool for long-term fish analysis. *Ecological Informatics, 23*, 83–97. https://doi.org/10.1016/j.ecoinf.2013.10.006 (SJR: Q2)

[**J03**] Spampinato, C., Beauxis-Aussalet, E., Palazzo, S., **Beyan, C.**, van Ossenbruggen, J., He, J., Boom, B., & Huang, X. (2014). A rule-based event detection system for underwater domain. *Machine Vision and Applications, 25*(1), 99–117. https://doi.org/10.1007/s00138-013-0509-x (SJR: Q2)

[**J02**] **Beyan, C.**, & Temizel, A. (2012). Adaptive mean-shift for automated multi-object tracking. *IET Computer Vision, 6*(1), 1–12. https://doi.org/10.1049/iet-cvi.2011.0054 (SJR: Q3)

[**J01**] **Beyan, C.**, Yigit, A., & Temizel, A. (2011). Fusion of thermal and visible band video for abandoned object detection. *Journal of Electronic Imaging, 20*(3), 1–13. https://doi.org/10.1117/1.3602204 (SJR: Q3)

**Peer-reviewed International Conference (35) and Workshop (8) Publications**

[**IC43**] Khameneh, N. A., Carletti, M., & **Beyan, C.** (2026). Geometry-conditioned diffusion for occlusion-robust in-bed pose estimation. In *Proceedings of the 20th IEEE International Conference on Automatic Face and Gesture Recognition (FG 2026).*

[**IC42**] Tonini, F., Conti, A., Vaquero, L., **Beyan, C.**, & Ricci, E. (2026). Towards unconstrained human-object interaction. In *Proceedings of the 20th IEEE International Conference on Automatic Face and Gesture Recognition (FG 2026).*

[**IC41**] Dibitonto, F., **Beyan, C.**, & Murino, V. (2026). HAC: Parameter-efficient hyperbolic adaptation of CLIP for zero-shot VQA. In *Proceedings of the International Conference on Pattern Recognition (ICPR 2026).*

[**IC40**] Olivato, F., **Beyan, C.**, & Murino, V. (2026). Discriminator-guided adaptive diffusion for source-free test-time adaptation under image corruptions. In *Proceedings of the International Conference on Pattern Recognition (ICPR 2026).*

[**IC39**] Yu, F., Tiezzi, M., Apicella, T., **Beyan, C.**, & Murino, V. (2026). Lifelong imitation learning with multimodal latent replay and incremental adjustment. In *Proceedings of the IEEE/CVF Conference on Computer Vision and Pattern Recognition (CVPR 2026).*

[**IC38**] Tonini, F., Vaquero, L., Conti, A., **Beyan, C.**, & Ricci, E. (2025). Dynamic scoring with enhanced semantics for training-free human-object interaction detection. In *Proceedings of the ACM Multimedia* (pp. 2801–2810). https://doi.org/10.1145/3746027.3754770
Oral presentation, 24% acceptance rate, # of submitted valid papers: 5300
GII-GRIN-SCIE Conf. Rating: A++

[**IC37**] Shiri, M., **Beyan, C.**, & Murino, V. (2025). MADPOT: Medical anomaly detection with CLIP adaptation and partial optimal transport. In *Proceedings of the 23rd International Conference on Image Analysis and Processing (ICIAP)* (pp. 247–259). https://doi.org/10.1007/978-3-032-10185-3_20
Received the **Caianiello ICIAP Paper Award**.
Oral presentation.
GII-GRIN-SCIE Conf. Rating: B

[**IC36**] Shiri, M., **Beyan, C.**, & Murino, V. (2025). MadCLIP: Few-shot medical anomaly detection with CLIP. In *Proceedings of Medical Image Computing and Computer Assisted Intervention (MICCAI)* (pp. 416–426).
Early acceptance: selected as top 9% out of 3667 submissions.
GII-GRIN-SCIE Conf. Rating: A+

[**IC35**] Niewiadomski, R., & **Beyan, C.** (2025). Toward modeling commensal interactions in human dyads. In *Proceedings of the Designing Interactive Systems Conference (DIS'25 Companion)* (pp. 403–408). https://doi.org/10.1145/3715668.3736334

[**IC34**] Toaiari, A., Murino, V., Cristani, M., & **Beyan, C.** (2024). Upper-body pose-based gaze estimation for privacy-preserving 3D gaze target detection. In *Proceedings of the European Conference on Computer Vision (ECCV) Workshops* (pp. 359–376). https://doi.org/10.1007/978-3-031-91575-8_22

[**IC33**] Yazgi, K., **Beyan, C.**, Mancini, M., & Niewiadomski, R. (2024). Automatic recognition of commensal activities in co-located and online settings. In *Companion Proceedings of the 26th*

*ACM International Conference on Multimodal Interaction (ICMI Companion'24)* (pp. 117–121). https://doi.org/10.1145/3686215.3686219
Oral presentation

**[IC32]** Tonini, F., Dall'Asen, N., Vaquero, L., **Beyan, C.**, & Ricci, E. (2024). AL-GTD: Deep active learning for gaze target detection. In *Proceedings of the 32nd ACM International Conference on Multimedia (ACM MM'24)* (pp. 2360–2369). https://doi.org/10.1145/3664647.3680952
25% overall acceptance rate, # of submitted valid papers: 4300
GII-GRIN-SCIE Conf. Rating: A++

**[IC31]** Tur, A., Conti, A., **Beyan, C.**, Boscaini, D., Larcher, R., Messelodi, S., Poiesi, F., & Ricci, E. (2024). Exploring fine-grained retail product discrimination with zero-shot object classification using vision-language models. In *IEEE 8th Forum on Research and Technologies for Society and Industry Innovation (RTSI)* (pp. 97–102).
https://doi.org/10.1109/RTSI61910.2024.10761839

**[IC30]** Canovi, N., Montagna, F., Niewiadomski, R., Sciutti, A., Di Cesare, G., & **Beyan, C.** (2024). Diffusion-based unsupervised pre-training for automated recognition of vitality forms. In *Proceedings of the International Conference on Advanced Visual Interfaces (AVI)* (pp. 1–9).
https://doi.org/10.1145/3656650.3656689

**[IC29]** Thakur, S., **Beyan, C.**, Morerio, P., Murino, V., & Del Bue, A. (2024). Leveraging next-active objects for context-aware anticipation in egocentric videos. In *Proceedings of the IEEE/CVF Winter Conference on Applications of Computer Vision (WACV)* (pp. 8657–8666).
42% overall acceptance rate, # of submitted valid papers: 2042
GII-GRIN-SCIE Conf. Rating: A

**[IC28]** Tonini, F., Dall'Asen, N., **Beyan, C.**, & Ricci, E. (2023). Object-aware gaze target detection. In *Proceedings of the IEEE/CVF International Conference on Computer Vision (ICCV)* (pp. 21860–21869).
26% overall acceptance rate, # of submitted valid papers: 8260
GII-GRIN-SCIE Conf. Rating: A++

**[IC27]** Tur, A. O., Dall'Asen, N., **Beyan, C.**, & Ricci, E. (2023). Exploring diffusion models for unsupervised video anomaly detection. In *Proceedings of the 22nd International Conference on Image Analysis and Processing (ICIAP)* (pp. 49–62). https://doi.org/10.1007/978-3-031-43153-1_5 https://link.springer.com/chapter/10.1007/978-3-031-43153-1_5
Oral presentation. GII-GRIN-SCIE Conf. Rating: B

**[IC26]** Thakur, S., **Beyan, C.**, Morerio, P., Murino, V., & Del Bue, A. (2023). Enhancing next active object-based egocentric action anticipation with guided attention. In *Proceedings of the IEEE International Conference on Image Processing (ICIP)* (pp. 1450–1454).
https://doi.org/10.1109/ICIP49359.2023.10222445 https://ieeexplore.ieee.org/document/10222445
GII-GRIN-SCIE Conf. Rating: A-

**[IC25]** Tur, A. O., Dall'Asen, N., **Beyan, C.**, & Ricci, E. (2023). Exploring diffusion models for unsupervised video anomaly detection. In *Proceedings of the IEEE International Conference on Image Processing (ICIP)* (pp. 2540–2544).
https://doi.org/10.1109/ICIP49359.2023.10222594 https://ieeexplore.ieee.org/document/10222594
Oral presentation. GII-GRIN-SCIE Conf. Rating: A-

[**IC24**] Tonini, F., **Beyan, C.**, & Ricci, E. (2022). Multimodal across domains gaze target detection. In *Proceedings of ACM International Conference on Multimodal Interaction (ACM ICMI)* (pp. 420–431). https://doi.org/10.1145/3536221.3556624
33% overall acceptance rate. GII-GRIN-SCIE: A-

[**IC23**] Franceschini, R., Fini, E., **Beyan, C.**, Conti, A., Arrigoni, F., & Ricci, E. (2022). Multimodal emotion recognition with modality-pairwise unsupervised contrastive loss. In *Proceedings of the 26th International Conference on Pattern Recognition (ICPR)* (pp. 2589–2596). https://doi.org/10.1109/ICPR56361.2022.9956589
Oral presentation. GII-GRIN-SCIE: A-

[**IC22**] Paoletti, G., Cavazza, J., **Beyan, C.**, & Del Bue, A. (2021). Unsupervised human action recognition with skeletal graph Laplacian and self-supervised viewpoints invariance. In *Proceedings of the 32nd British Machine Vision Conference (BMVC).*
https://www.bmvc2021-virtualconference.com/assets/papers/0842.pdf
Oral presentation. GII-GRIN-SCIE: A

[**IC21**] Thakur, S. K., **Beyan, C.**, Morerio, P., & Del Bue, A. (2021). Predicting gaze from egocentric social interaction videos and IMU data. In *Proceedings of ACM International Conference on Multimodal Interaction (ACM ICMI)* (pp. 717–722).
https://doi.org/10.1145/3462244.3479954
37.5% overall acceptance rate. GII-GRIN-SCIE: A-

[**IC20**] Shahid, M., **Beyan, C.**, & Murino, V. (2021). S-VVAD: Visual voice activity detection by motion segmentation. In *Proceedings of IEEE Winter Conference on Applications of Computer Vision (WACV)* (pp. 23332–2341). https://doi.org/10.1109/WACV48630.2021.00238
GII-GRIN-SCIE: A

[**IC19**] **Beyan, C.**, Bustreo, M., Shahid, M., Bailo, G. L., Carissimi, N., & Del Bue, A. (2020). Analysis of face-touching behavior in large scale social interaction dataset. In *Proceedings of ACM International Conference on Multimodal Interaction (ACM ICMI)* (pp. 24–32).
https://doi.org/10.1145/3382507.3418876
37.5% overall acceptance rate
GII-GRIN-SCIE: A-

[**IC18**] Paoletti, G., Cavazza, J., **Beyan, C.**, & Del Bue, A. (2020). Subspace clustering for action recognition with covariance representations and temporal pruning. In *Proceedings of International Conference on Pattern Recognition (ICPR)* (pp. 6035–6042).
https://doi.org/10.1109/ICPR48806.2021.9412060
Accepted in first review round, which has 35.6% acceptance rate; overall acceptance rate = 43.4%; oral presentation; overall oral presentation acceptance rate = 4.4%
GII-GRIN-SCIE: A-

[**IC17**] Shahid, M.$^\star$, **Beyan, C.**$^\star$, & Murino, V. (2019). Voice activity detection by upper body motion analysis and unsupervised domain adaptation. In *Proceedings of International Conference on Computer Vision (ICCV) Workshops, 10th International Workshop on Human Behavior Understanding (HBU).* https://doi.org/10.1109/ICCVW.2019.00159
$^\star$equal contribution

[**IC16**] Shahid, M.$^\star$, **Beyan, C.**$^\star$, & Murino, V. (2019). Comparisons of visual activity primitives for voice activity detection. In E. Ricci, S. Rota Bulo, C. Snoek, O. Lanz, S. Messelodi, & N. Sebe (Eds.), *Image Analysis and Processing (ICIAP), Lecture Notes in Computer Science* (Vol. 11751, pp. 48–59). Springer. https://doi.org/10.1007/978-3-030-30642-7_5
∼56% overall acceptance rate. GII-GRIN-SCIE: B $^\star$ equal contribution

[**IC15**] Carissimi, N., Rota, P., **Beyan, C.**, & Murino, V. (2018). Filling the gaps: Predicting missing joints of human poses using denoising autoencoders. In *Proceedings of European Conference on Computer Vision (ECCV) Workshops, 9th International Workshop on Human Behavior Understanding (HBU)* (pp. 364–379). https://doi.org/10.1007/978-3-030-11012-3_29
Oral presentation.

[**IC14**] **Beyan, C.**, Shahid, M., & Murino, V. (2018). Investigation of small group social interactions using deep visual activity-based nonverbal features. In *Proceedings of the 26th ACM Multimedia (ACMMM)* (pp. 311–319). https://doi.org/10.1145/3240508.3240685
∼27.5% overall acceptance rate. GII-GRIN-SCIE: A++

[**IC13**] Carissimi, N., **Beyan, C.**, & Murino, V. (2018). A multi-view learning approach to deception detection. In *Proceedings of the 13th IEEE International Conference on Automatic Face and Gesture Recognition (IEEE FG)* (pp. 599–606).
https://doi.org/10.1109/FG.2018.00095
∼47% overall acceptance rate, oral presentation. GII-GRIN-SCIE: A-

[**IC12**] **Beyan, C.**, Capozzi, F., Becchio, C., & Murino, V. (2017). Multi-task learning of social psychology assessments and nonverbal features for automatic leadership identification. In *Proceedings of ACM International Conference on Multimodal Interaction (ACM ICMI)* (pp. 451–455). https://doi.org/10.1145/3136755.3136812
∼43% overall acceptance rate. GII-GRIN-SCIE: A-

[**IC11**] **Beyan, C.**, Katsageorgiou, V. M., & Murino, V. (2017). Moving as a leader: Detecting emergent leadership in small groups using body pose. In *Proceedings of the 25th ACM Multimedia (ACMMM)* (pp. 1425–1433). https://doi.org/10.1145/3123266.3123404
∼28% overall acceptance rate. GII-GRIN-SCIE: A++

[**IC10**] **Beyan, C.**, Capozzi, F., Becchio, C., & Murino, V. (2016). Identification of emergent leaders in a meeting scenario using multiple kernel learning. In *Proceedings of the 2nd International Workshop on Advancements in Social Signal Processing for Multimodal Interaction (ASSP4MI), in conjunction with ACM International Conference on Multimodal Interaction (ACM ICMI)* (pp. 3–10). https://doi.org/10.1145/3005467.3005469
Oral presentation.

[**IC09**] **Beyan, C.**, Carissimi, N., Capozzi, F., Vascon, S., Bustreo, M., Pierro, A., Becchio, C., & Murino, V. (2016). Detecting emergent leader in a meeting environment using nonverbal visual features only. In *Proceedings of ACM International Conference on Multimodal Interaction (ACM ICMI)* (pp. 317–324). https://doi.org/10.1145/2993148.2993175
∼38% overall acceptance rate. GII-GRIN-SCIE: A-

[**IC08**] **Beyan, C.**, & Fisher, R. B. (2013). Detection of abnormal fish trajectories using a clustering-based hierarchical classifier. In *Proceedings of British Machine Vision Conference (BMVC)* (pp. 1–11). https://doi.org/10.5244/C.27.21
∼30% overall acceptance rate. GII-GRIN-SCIE: A

[**IC07**] **Beyan, C.**, & Fisher, R. B. (2013). Detecting abnormal fish trajectories using clustered and labeled data. In *Proceedings of the 20th IEEE International Conference on Image Processing (IEEE ICIP)* (pp. 1476–1480). https://doi.org/10.1109/ICIP.2013.6738303
∼44.5% overall acceptance rate, oral presentation. GII-GRIN-SCIE Conf. Rating: A-

[**IC06**] **Beyan, C.**, & Fisher, R. B. (2012). A filtering mechanism for normal fish trajectories. In *Proceedings of the 21st International Conference on Pattern Recognition (ICPR)* (pp. 2286–2289). ∼48.5% overall acceptance rate. GII-GRIN-SCIE: A-

[**IC05**] Boom, B. J., Huang, P. X., **Beyan, C.**, Spampinato, C., Palazzo, S., He, J., Beauxis-Aussalet, E., Lin, S.-I., Chou, H.-M., Nadarajan, G., Chen-Burger, Y.-H., van Ossenbruggen, J., Giordano, D., Hardman, L., Lin, F.-P., & Fisher, R. B. (2012). Long-term underwater camera surveillance for monitoring and analysis of fish populations. In *International Workshop on Visual Observation and Analysis of Animal and Insect Behavior (VAIB), in conjunction with the 21st International Conference on Pattern Recognition.*
Oral presentation.

[**IC04**] Palazzo, S., Spampinato, C., & **Beyan, C.** (2012). Event detection in underwater domain by exploiting fish trajectory clustering. In *Proceedings of the 1st ACM International Workshop on Multimedia Analysis for Ecological Data (MAED), in conjunction with ACM Multimedia (ACMMM)* (pp. 31–36). https://doi.org/10.1145/2390832.2390840
Oral presentation.

[**IC03**] **Beyan, C.**, & Temizel, A. (2011). Mean-shift tracking for surveillance applications using thermal and visible band data fusion. In *Proceedings of SPIE Vol. 8020, Defense, Security and Sensing: Airborne Intelligence, Surveillance, Reconnaissance (ISR) Systems and Applications VIII* (802010, pp. 1–13). https://doi.org/10.1117/12.882838

[**IC02**] Ogul, H., **Beyan, C.**, Eren, O., Yildiz, K., Ercelebi, T., & Sonmez, B. (2010). MicroRNA target recognition from compositional features of aligned microRNA-mRNA duplexes. In *Proceedings of International Symposium on Innovations in Intelligent Systems and Applications (INISTA).*
Oral presentation.

[**IC01**] **Beyan, C.**, & Ogul, H. (2008). A fuzzy k-NN approach for cancer diagnosis with microarray gene expression data. In *Proceedings of the 3rd International Symposium on Health Informatics and Bioinformatics (HIBIT).*
Oral presentation.

### Peer-reviewed National Conference Publications (in Turkish) (2)

[**NC2**] **Beyan, Ç.**, & Temizel, A. (2011). Detection of abandoned objects using thermal and visible band tracking. In *Proceedings of the 19th IEEE Conference on Signal Processing and Communications Applications (IEEE SIU)* (pp. 114–117). https://doi.org/10.1109/SIU.2011.5929600
Oral presentation. Alper Atalay Best Student Paper Award.

[**NC1**] **Beyan, Ç.**, & Temizel, A. (2011). A hybrid multi object tracker using mean-shift and background subtraction. In *Proceedings of the 19th IEEE Conference on Signal Processing and Communications Applications (IEEE SIU)* (pp. 110–113). https://doi.org/10.1109/SIU.2011.5929599