

# CIGDEM BEYAN

*GitHub:* cbeyan

*ORCID ID:* 0000-0002-9583-0087

*SCOPUS Author ID:* 43260919000

*Web of Science ResearcherID:* AAA-4235-2019

## EDUCATION

---

### 2015 PhD.

University of Edinburgh, UK

School of Informatics

Institute of Perception, Action and Behaviour (IPAB)

*Thesis Title:* Detection of Unusual Fish Trajectories from Underwater Videos

*First Supervisor:* Prof. Dr. Robert Fisher

*Second Supervisor:* Dr. Vittorio Ferrari

### 2010 MSc.

Middle East Technical University (METU), TURKEY

Graduate School of Informatics

Department of Information Systems

*GPA:* 3.88/4.00

*Thesis Title:* Object Tracking for Surveillance Applications Using Thermal and Visible Band Video Data Fusion

*Supervisor:* Prof. Dr. Alptekin Temizel

### 2008 BEng.

Baskent University, TURKEY

Faculty of Engineering

Department of Computer Engineering

*GPA:* 3.64/4.00 (High Honour , ranked 2<sup>nd</sup> among the graduates of that year)

*Thesis Title:* Cancer Diagnosis with Gene Expression Data

*Supervisor:* Prof. Dr. Hasan Ogul

## CURRENT WORK POSITION

---

### September 2015-

Postdoctoral Researcher

Department of Pattern Analysis & Computer Vision (PAVIS)  
Istituto Italiano di Tecnologia (IIT), Genoa, Italy

*Major Responsibilities:* carrying out research on nonverbal behaviour analysis of human-human social interactions (social signal processing), co-supervising PhD students, organizing, planning and management of EU and national project proposals.

## PREVIOUS WORK POSITIONS

---

### May 2015- July 2015

Course Assistant for preparing practical assignments for Introduction to Vision and Robotics <http://www.inf.ed.ac.uk/teaching/courses/ivr/>

University of Edinburgh  
School of Informatics  
Edinburgh, UK

### September 2011- May 2015

Guest Lecturer, Teaching Assistant, Tutor, Marker and Demonstrator

University of Edinburgh  
School of Informatics  
Edinburgh, UK

### September 2008- 2011

Research & Teaching Assistant

Baskent University  
Department of Computer Engineering  
Ankara, Turkey

### June 2007

Intern

Meteksan System Corporate Resolution and Software Development  
Ankara, Turkey

**June 2006**

Intern

Siemens Business  
Ankara, Turkey

## **RESEARCH INTEREST**

---

- Multimodal Analysis of Nonverbal Social Interactions & Social Signal Processing (e.g., Leadership Identification, Personality Trait Analysis, Deception Detection, Affect Classification, etc.)
- Computer Vision & Multimedia (e.g., human/animal behaviour understanding, action recognition, trajectory analysis, anomaly detection, active speaker detection, etc.)
- Machine & Deep Learning (e.g., classification of imbalanced data, active learning, unsupervised learning, domain adaptation, self-supervision, representation learning, etc.)

## **RESEARCH PROJECTS\***

---

**February 2020-**

ProHome NET-2016-02361805

Autonomous Monitoring of Patients using Sensor Networks

<https://pavis.iit.it/projects/national-grants>

*Collaboration with:* Ospedali Galliera Genova (Italy), Dr. Lorenzo De Michieli (IIT Rehab, Italy), Dr. Diego Sona (FBK, IIT PAVIS, Italy) and Dr. Alessio Del Bue (IIT PAVIS, Italy)

**September 2019-**

Multimodal Nonverbal Behavior Analysis of Public Speakers

*Collaboration with:* Omer Sumer (Uni. of Tübingen, Germany), Prof. Dr. Ulrich Trautwein (Uni. of Tübingen, Germany) and Prof. Dr. Enkelejda Kasneci (Uni. of Tübingen, Germany)

## **September 2015- 2019**

Multimodal Identification of Emergent Leaders in Small Group Social Interactions  
<https://www.iit.it/datasets/leadership-corpus-dataset>

*Collaboration with:* Dr. Francesca Capozzi (McGill University, Canada), Prof. Dr. Cristina Becchio (IIT C'MON, Uni. of Turin, Italy), and Prof. Dr. Vittorio Murino (IIT PAVIS, Italy)

## **September 2011- May 2015**

Fish4Knowledge (EU 7<sup>th</sup> Framework Programme [FP7/2007-2013] under grant agreement 257024, 2011-2013)

Behaviour analysis of fish in live undersea video recordings (a part of PhD. Thesis)  
<http://groups.inf.ed.ac.uk/f4k/>

*Collaboration with:* Dr. Bastiaan J. Boom (Uni. of Edinburgh, UK), Dr. Simone Palazzo (Uni. of Catania, Italy), Dr. Concetto Spampinato (Uni. of Catania, Italy), and Prof. Dr. Robert Fisher (Uni. of Edinburgh, UK)

## **September 2009- December 2010**

METU Scientific Research Project Funding (BAP)  
Abandoned-Object Detection System Using Thermal and Visible Band Video Cameras  
<https://blog.metu.edu.tr/atemizel/projects/>  
METU Computer Vision and Remote Sensing research Group  
<https://ii.metu.edu.tr/metu-computer-vision-and-remote-sensing-research-group>

*Collaboration with:* Dr. Ahmet Yigit (METU, Turkey) and Prof. Dr. Alptekin Temizel (METU, Turkey)

## **September 2009- 2011**

Probabilistic Modelling of miRNA mRNA Duplexes  
Bioinference Research Group  
<http://www.baskent.edu.tr/~hogul/research.htm>

*Collaboration with:* Prof. Dr. Hasan Ogul (Baskent Uni., Turkey)

*\*PhD., MSc. and BEng. thesis (see section “Education”) as well as PhD co-supervised projects (see section “supervision experience”) are excluded from this section.*

## AWARDS AND DISTINCTIONS

---

- Became **Associate Fellow of the Higher Education Academy** in recognition of attainment against the UK Professional Standards Framework for teaching and learning support in higher education (18/11/2014). <http://www.heacademy.ac.uk/>
- Received **Edinburgh Global Overseas Research Scholarship**  
<http://www.ed.ac.uk/schools-departments/student-funding/postgraduate/international/global/research>
- Received **Principal Career Development Scholarship, University of Edinburgh**  
<http://www.ed.ac.uk/schools-departments/student-funding/postgraduate/uk-eu/university-scholarships/development>  
<https://www.ed.ac.uk/student-funding/postgraduate/scholar-case-studies>
- Received **Best Thesis Award** for MSc. Thesis  
Given by Prof. Dr. Mustafa N. Parlar Education and Research Foundation, Middle East Technical University (METU), Ankara, Turkey, Thesis of the year award, 2011.  
<https://parlar.org.tr/>
- Received **2010-2011 Academic year Best Thesis Award** for MSc. Thesis  
Given by Middle East Technical University to Postgraduate Thesis including all institutes.  
<https://ii.metu.edu.tr/graduate-awards>
- Received **Alper Atalay Best Student Paper Award, first place**  
19th IEEE Conference on Signal Processing and Communications Applications, April 2011,  
<http://vpa.sabanciuniv.edu/links/bupam/alper/odul.htm>
- Received **SPIE Student Travel Grant**, SPIE Defense, Security, and Sensing Symposium, April 2011.
- Received **2007-2008 Academic Year Baskent University Academic Achievement Scholarship**, High Honour (GPA: 3.72/4.00)
- Received **2006-2007 Academic Year Baskent University Academic Achievement Scholarship**, High Honour (GPA: 3.73/4.00)

## SCIENTIFIC ACTIVITIES

---

### Associate Editor

- *ICES Journal of Marine Science* (18 September 2018- ):
  - Covering area of applications of computer vision and machine learning in marine science. [https://academic.oup.com/icesjms/pages/Editorial\\_Board](https://academic.oup.com/icesjms/pages/Editorial_Board)
  - Motivated, developed and edited article theme set: Applications of machine learning and artificial intelligence in marine science, published on 20.07.2020, (received 850 reads until 04.08.2020), together with Dr. Howard I Browman (fishlarvae.org, Norway).  
<https://academic.oup.com/icesjms/article/77/4/1267/5873749>

### Guest Editor

- *Frontiers in Robotics and AI* (2018-2020):
  - Motivated, developed and edited research topic: Computational Approaches for Human-Human and Human-Robot Social Interactions (37773 total views and 2171 article downloads accessed on 06.04.2020), together with Prof. Dr. Vittorio Murino (IIT PAVIS, Italy, Uni. Of Verona, Italy, Huawei Technologies, Ireland), Dr. Gentiane Venture (Tokyo Uni. of Agriculture and Technology, Japan) and Dr. Agnieszka Wykowska (IIT S4HRI, Italy).  
<https://www.frontiersin.org/research-topics/8447/computational-approaches-for-human-human-and-human-robot-social-interactions>

### Workshop Co-organizer

- *2<sup>nd</sup> Workshop on Applications of Egocentric Vision (EgoApp)* in conjunction with International Conference on Pattern Recognition (ICPR) 2020, Milan, Italy, together with Maya Aghaei (IIT PAVIS, Italy), 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).  
<https://egoappworkshop2020.wordpress.com/>
- *Applications of Egocentric Vision Workshop (EgoApp)* in conjunction with British Machine Vision Conference (BMVC) 2019, Cardiff, UK, together with Maya Aghaei (IIT PAVIS, Italy), Fernando De la Torre (Facebook Research, USA) and Vittorio Murino (IIT PAVIS, Italy).  
<https://egoappworkshop.wordpress.com/>

### **Journal Reviewer (15)**

- IEEE Transactions on Multimedia
- IEEE Transactions on Affective Computing
- IEEE Transactions on Knowledge and Data Engineering
- Pattern Recognition
- Machine Vision and Applications
- 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

### **International Conference / Workshop Reviewer (8)**

- European Conference on Computer Vision (ECCV) 2020
- ACM International Conference on Multimedia (ACMMM) 2019, 2020
- ACM International Conference on Multimodal Interaction (ICMI) 2019, 2020
- International Conference on Pattern Recognition (ICPR) 2014, 2016, 2018, 2020
- International Conference on Affective Computing and Intelligent Interaction (ACII) 2019
- International Conference on Motion and Computing (MOCO) 2018
- ICCV Workshop on Action Recognition with a Large Number of Classes (THUMOS) 2013
- ECCV Workshop on Multimodal Learning and Applications (MULA) 2018

### **Program Committee Member**

- ACM International Conference on Multimedia (ACMMM) 2019, 2020
- International Conference on Human Computer Interaction Theory and Applications (HUCAPP) 2019, 2020  
HUCAPP is a part of VISIGRAPP (Int. Joint Conf. on Computer Vision, Imaging and Computer Graphics Theory and Applications)  
<http://www.hucapp.visigrapp.org/ProgramCommittee.aspx?y=2019>
- Doctoral Consortium of the Int. Conf. on Affective Computing and Intelligent Interaction (ACII) 2019

## Invited Speaker

- Social Signal Processing Approaches for Emergent Leadership  
In Department of Multimedia Informatics, Graduate School of Informatics,  
Middle East Technical University, Ankara, Turkey, December 27, 2017.  
<https://ii.metu.edu.tr/announcement/social-signal-processing-approaches-dr-cigdem-beyan>

## SUPERVISION EXPERIENCE

---

### 2015- 2019

Nicolò Carissimi  
PhD Thesis *co-supervising* together with Prof. Dr. Vittorio Murino  
*PhD Thesis Title:* Investigating Social Interactions Using Multimodal Nonverbal Features

### 2017-

Muhammad Shahid  
PhD Thesis *co-supervising* together with Prof. Dr. Vittorio Murino  
*PhD Topic:* Social Interactions Analysis through Deep Visual Nonverbal Features

### 2019 -

Giancarlo Paoletti  
PhD Thesis *co-supervising* with Dr. Jacopo Cavazza and Dr. Alessio Del Bue  
*PhD Topic:* Unsupervised Learning for Human Action Recognition

## TEACHING EXPERIENCE

---

### September 2011- May 2015

*Tutor, Lab Demonstrator, Teaching Assistant, Marker and Guest Lecturer*  
in University of Edinburgh School of Informatics, Edinburgh, UK.  
All courses were delivered in English.

- Advanced Vision (Year 4 Undergraduate & MSc):  
Marker (33+33 hours) & Guest Lecturer (2 hours)  
<http://www.inf.ed.ac.uk/teaching/courses/av/>
- Introductory Applied Machine Learning (Year 3 Undergraduate):  
Tutor (8+8 hours)  
<http://www.inf.ed.ac.uk/teaching/courses/iaml/>



- Database Systems (Year 3 Undergraduate):  
Tutor (24 hours) & Marker (55 hours)  
<http://homepages.inf.ed.ac.uk/libkin/teach/dbs13/>
- INF-1-DA: Informatics 1 - Data and Analysis (Year 1 Undergraduate):  
Tutor (16+16+16 hours) & Marker (25+25+25 hours)  
<http://www.inf.ed.ac.uk/teaching/courses/inf1/da/2013-2014/>
- INF-1-CP: Computer Programming: Skills and Concepts (Year 1 Undergraduate):  
Demonstrator (20 hours) & Teaching Assistant (42+36 hours)  
<http://www.inf.ed.ac.uk/teaching/courses/cp/>

### **September 2008- September 2011**

*Teaching Assistant (equivalent to Tutor, Lab Demonstrator and Marker)*  
in Baskent University, Department of Computer Engineering, Ankara, Turkey.  
All courses were delivered in Turkish.

- BIL105 Programming Laboratory 1  
Programming with C (Year 1 Undergraduate):  
28 practice hours per section and year  
<http://angora.baskent.edu.tr/bilgipaketi/?dil=EN&menu=akademik&inner=katalog&birim=501&ders=501105>
- BIL106 Programming Laboratory 2  
Programming with C++ (Year 1 Undergraduate):  
28 practice hours per section and year  
<http://angora.baskent.edu.tr/bilgipaketi/?dil=EN&menu=akademik&inner=katalog&birim=503&ders=501106>
- BIL231 Discrete Structures (Year 2 Undergraduate):  
14 practice hours per year  
<http://angora.baskent.edu.tr/bilgipaketi/?dil=EN&menu=akademik&inner=katalog&birim=501&ders=501231>
- BIL240 Programming Languages (Year 2 Undergraduate):  
14 practice hours per year  
<http://angora.baskent.edu.tr/bilgipaketi/?dil=EN&menu=akademik&inner=katalog&birim=501&ders=501240>
- BIL284 Assembly Languages (Year 2 Undergraduate):  
14 practice hours per year
- BIL364 Automata Theory (Year 3 Undergraduate):  
14 practice hours per year
- BIL218 Computer Organization (Year 2 Undergraduate):  
14 practice hours per year  
<http://angora.baskent.edu.tr/bilgipaketi/?dil=EN&menu=akademik&inner=katalog&birim=501&ders=501218>

- BIL344 Database Systems (Year 3 Undergraduate):  
28 practice hours per year  
<http://angora.baskent.edu.tr/bilgipaketi/?dil=EN&menu=akademik&inner=katalog&birim=501&ders=501344>
- BIL429 Computer Networks (Year 4 Undergraduate):  
28 practice hours per year  
<http://angora.baskent.edu.tr/bilgipaketi/?dil=EN&menu=akademik&inner=katalog&birim=501&ders=501429>
- BIL464 Multimedia Systems (Year 4 Undergraduate):  
14 practice hours per year  
<http://angora.baskent.edu.tr/bilgipaketi/?dil=EN&menu=akademik&inner=katalog&birim=501&ders=501489>

## OTHER COMPETENCES

---

### Programming Languages and Tools:

Python, MATLAB, C/C++, Java, SQL, Assembly, PERL, Haskell, HTML, CSS, LaTeX, Anaconda, TensorFlow, PyCharm, Git, OpenCV, Weka, R, MS Visual Studio

### Operating Systems:

Windows, Linux-based systems

### Languages:

Turkish (Native), English (Advanced), Italian (Intermediate)

## MEMBERSHIPS

---

**2018 -**

- Association for Computing Machinery (ACM)

**2014 -**

- Associate Fellow of the UK Higher Education Academy

**2013 -**

- Institute of Electrical and Electronics Engineers (IEEE)
- The British Machine Vision Association (BMVA) Student Membership (terminated in 2014).

## OTHER ROLES

---

### **23-27 July 2018**

Voluntary Work in DeepLearn 2018: International Summer School on Deep Learning, Genoa, Italy  
Welcoming the participants, management of the meeting rooms, technical support. Interaction with participants from more than 80 countries, for a total of 72 hours of activities.

### **November 2011- July 2014**

Voluntary Work  
Turkish teacher for children and adults in Speak Turkish Edinburgh, a registered charity (SC043391) dedicated to fostering a wider understanding of Turkish language and culture in Edinburgh, Scotland, UK.  
This duty covered various levels of classes such as age of 10-18 and adults.

### **October 2014- April 2015**

President of University of Edinburgh Turkish Society

### **April 2014- October 2014**

Secretary of University of Edinburgh Turkish Society  
Actively worked on establishment (February 2014) of the society.

### **2008**

Yearbook Preparation Community Department Coordinator  
Baskent University Faculty of Engineering  
Department Of Computer Engineering

### **2007**

Baskent University Computer Society Secretary of Administrative Body

## PUBLICATION LIST

---

### SCOPUS

Citations: 293, h-index: 9, access on 05.08.2020  
<https://www.scopus.com/authid/detail.uri?authorId=43260919000>

### Google Scholar

Citations: 476, h-index: 11, i10-index: 11, access on 05.08.2020  
<https://scholar.google.com/citations?user=VmjUxckAAAAJ&hl=en>

### Refereed Book Chapters (3)

[B03]	<b>C. Beyan</b> , "Unusual Trajectory Detection: Advances", In Encyclopedia of Image Processing, 1st Edition, Phillip A. Laplante (Editor), Taylor & Francis Group: New York, pp: 766-781. doi: 10.1201/9781351110273-140000116
[B02]	<b>C. Beyan</b> , "Fish Behavior Analysis", In Fish4Knowledge: Collecting and Analyzing Massive Coral Reef Fish Video Data, Chen-Burger et al. (Editors), Springer. doi: 10.1007/978-3-319-30208-9
[B01]	<b>C. Beyan</b> , and R. B. Fisher, "Hierarchal Decomposition for Unusual Fish Trajectory Detection", In Computer Vision and Pattern Recognition in Environmental Informatics, Zhou et al. (Editors), IGI Global. doi: 10.4018/978-1-4666-9435-4.ch001

### Refereed International Journal Papers (16)

[J16]	<b>C. Beyan*</b> , M. Shahid* and V. Murino, " RealVAD: A Real-world Dataset for Voice Activity Detection", IEEE Transactions on Multimedia, Early Access 2020. doi: 10.1109/TMM.2020.3007350 <i>* indicates equal contribution</i>
[J15]	<b>C. Beyan</b> , and H. I. Browman, "Setting the stage for the machine intelligence era in marine science", ICES Journal of Marine Science, vol. 77, no. 4, pp. 1267–1273, June 2020. doi: 10.1093/icesjms/fsaa084

[J14]	<b>C. Beyan</b> , V. Murino, G. Venture and A. Wykowska, "Editorial: Computational Approaches for Human-Human and Human-Robot Social Interactions", <i>Frontiers in Robotics and AI</i> , vol. 7, no. 55, 2020. doi: 10.3389/frobt.2020.00055.
[J13]	<b>C. Beyan</b> , A. Zunino, M. Shahid and V. Murino, "Personality Traits Classification Using Deep Visual Activity-based Nonverbal Features of Key-Dynamic Images", <i>IEEE Transactions on Affective Computing</i> , Early Access 2019. doi: 10.1109/TAFFC.2019.2944614.
[J12]	F. Capozzi, <b>C. Beyan</b> , A. Pierro, A. Koul, V. Murino, S. Livi, A. P. Bayliss, L. Ristic, C. Becchio, "Tracking The Leader: Gaze Behaviour In Group Interactions", <i>ISCIENCE</i> , 16, pp. 242-249, 2019. doi: 10.1016/j.isci.2019.05.035.
[J11]	<b>C. Beyan</b> , V. M. Katsageorgiou, V. Murino, "A Sequential Data Analysis Approach to Detect Emergent Leaders in Small Groups", <i>IEEE Transactions on Multimedia</i> , vol. 21, no. 8, pp. 2107-2116, 2019. doi: 10.1109/TMM.2019.2895505.
[J10]	<b>C. Beyan</b> , V. M. Katsageorgiou, R. Fisher, "Extracting Statistically Significant Behaviour from Fish Tracking Data With and Without Large Dataset Cleaning", <i>IET Computer Vision</i> , vol. 12, no. 2. pp. 162-170, 2018. doi: 10.1049/iet-cvi.2016.0462.
[J09]	<b>C. Beyan</b> , F. Capozzi, C. Becchio, and V. Murino, "Prediction of the Leadership Style of an Emergent Leader Using Audio and Visual Nonverbal Features", <i>IEEE Transactions on Multimedia</i> , vol. 20, no. 2, pp. 441-456, 2018. doi: 10.1109/TMM.2017.2740062.
[J08]	<b>C. Beyan</b> , B. Boom, J. Liefhebber, K-T Shao, and R. Fisher, "Natural Swimming Speed of <i>Dascyllus reticulatus</i> Increases with Water Temperature", <i>ICES Journal of Marine Science</i> , vol. 72, no. 8, pp. 2506-2511, 2015. doi: 10.1093/icesjms/fsv104.
[J07]	<b>C. Beyan</b> , R. Fisher, "Classifying Imbalanced Data Sets Using Similarity Based Hierarchical Decomposition", <i>Pattern Recognition</i> , vol. 48, no. 5, pp. 1653-1672, 2015. doi: 10.1016/j.patcog.2014.10.032.
[J06]	<b>C. Beyan</b> , A. Temizel, "A Multimodal Approach for Individual Tracking of People and Their Belongings", <i>Imaging Science Journal</i> , vol. 63, no. 4, pp. 192-202, 2015. doi: 10.1179/1743131X14Y.0000000101.

[IJ05]	S. McDonagh, <b>C. Beyan</b> , P. X. Huang and R. B. Fisher, "Applying semi-synchronised task farming to large-scale computer vision problems", International Journal of High Performance Computing Applications, vol. 29. no. 4, pp. 1-24, 2015. doi: 10.1177/1094342014532965.
[IJ04]	B. J. Boom, J. He, S. Palazzo, P. X. Huang, <b>C. Beyan</b> , H. Chou, F. Lin, C. Spampinato, R. B. Fisher, "A research tool for long-term and continuous analysis of fish assemblage in coral-reefs using underwater camera footage", Ecological Informatics, vol. 23, pp. 83-97, 2014. doi: 10.1016/j.ecoinf.2013.10.006.
[IJ03]	C. Spampinato, E. Beauxis-Aussalet, S. Palazzo, <b>C. Beyan</b> , J. van Ossenbruggen, J. He, B. Boom, X. Huang, "A rule-based event detection system for real-life underwater domain", Machine Vision and Applications, vol. 25, no. 1, pp. 99-117, 2014. doi: 10.1007/s00138-013-0509-x.
[IJ02]	<b>C. Beyan</b> , A. Temizel, "Adaptive Mean-Shift for Automated Multi Object Tracking", IET Computer Vision, vol. 6 no.1 pp. 1-12, 2012. doi: 10.1049/iet-cvi.2011.0054.
[IJ01]	<b>C. Beyan</b> , A. Yigit, A. Temizel, "Fusion of Thermal and Visible Band Video for Abandoned Object Detection", SPIE Journal of Electronic Imaging, vol. 20, no. 3, 033001, 2011. doi: 10.1117/1.3602204.

### Refereed International Conference & Workshop Papers (19)

[IC19]	<b>C. Beyan</b> , M. Bustreo, M. Shahid, G. L. Bailo, N. Carissimi, A. Del Bue, "Analysis of Face-Touching Behavior in Large Scale Social Interaction Dataset". In Proceedings of ACM International Conference on Multimodal Interaction (ACM ICMI), Accepted. (~37.5% overall acceptance rate)
[IC18]	G. Paoletti, J. Cavazza, <b>C. Beyan</b> , A. Del Bue, "Subspace Clustering for Action Recognition with Covariance Representations and Temporal Pruning". In Proceedings of International Conference on Pattern Recognition (ICPR), 2020, Accepted. (~???% overall acceptance rate)

[IC17]	<p>M. Shahid*, <b>C. Beyan</b>*, V. Murino, “Voice Activity Detection by Upper Body Motion Analysis and Unsupervised Domain Adaptation“. In Proceedings of International Conference on Computer Vision (ICCV) Workshops, (10<sup>th</sup> International Workshop on Human Behavior Understanding), 2019. doi: 10.1109/ICCVW.2019.00159 <i>* indicates equal contribution</i></p>
[IC16]	<p>M. Shahid*, <b>C. Beyan</b>*, V. Murino, “Comparisons of Visual Activity Primitives for Voice Activity Detection“. In Proceedings of Image Analysis and Processing (ICIAP), Lecture Notes in Computer Science, vol. 11751, E. Ricci, S. Rota Bulò, C. Snoek, O. Lanz, S. Messelodi, N. Sebe (eds), Springer, Cham, pp. 48-59, 2019. doi:10.1007/978-3-030-30642-7_5 (~56% overall acceptance rate) <i>* indicates equal contribution</i></p>
[IC15]	<p>N. Carissimi, P. Rota, <b>C. Beyan</b>, V. Murino, “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), pp. 364-379, 2018. doi: 10.1007/978-3-030-11012-3_29</p>
[IC14]	<p><b>C. Beyan</b>, M. Shahid and V. Murino, “Investigation of Small Group Social Interactions Using Deep Visual Activity-Based Nonverbal Features“, In Proceedings of 26<sup>th</sup> ACM Multimedia (ACMMM), pp. 311-319, 2018. doi: 10.1145/3240508.3240685 (~27.5% overall acceptance rate)</p>
[IC13]	<p>N. Carissimi, <b>C. Beyan</b>, and V. Murino, “A Multi-View Learning Approach to Deception Detection“, In Proceedings of 13<sup>th</sup> IEEE International Conference on Automatic Face and Gesture Recognition (IEEE FG), pp. 599-606, 2018. doi: 10.1109/FG.2018.00095 (~47% overall acceptance rate)</p>
[IC12]	<p><b>C. Beyan</b>, F. Capozzi, C. Becchio, and V. Murino, “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, 2017 doi: 10.1145/3136755.3136812 (~43% overall acceptance rate)</p>
[IC11]	<p><b>C. Beyan</b>, V. M. Katsageorgiou, and V. Murino, “Moving as a Leader: Detecting Emergent Leadership in Small Groups using Body Pose“, In Proceedings of 25<sup>th</sup> ACM Multimedia (ACMMM), pp. 1425-1433, 2017. doi: 10.1145/3123266.3123404 (~28% overall acceptance rate)</p>

[IC10]	<p><b>C. Beyan</b>, F. Capozzi, C. Becchio, and V. Murino, "Identification of Emergent Leaders in a Meeting Scenario Using Multiple Kernel Learning", In Proceedings of 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, 2016. doi: 10.1145/3005467.3005469</p>
[IC09]	<p><b>C. Beyan</b>, N. Carissimi, F. Capozzi, S. Vascon, M. Bustreo, A. Pierro, C. Becchio, and V. Murino, "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, 2016. doi: 10.1145/2993148.2993175 (~38% overall acceptance rate)</p>
[IC08]	<p><b>C. Beyan</b>, R. B. Fisher, "Detection of Abnormal Fish Trajectories Using a Clustering Based Hierarchical Classifier", In Proceedings of British Machine Vision Conference (BMVC), pp. 1-11, 2013. doi: 10.5244/C.27.21 (~30% overall acceptance rate)</p>
[IC07]	<p><b>C. Beyan</b>, R. B. Fisher, "Detecting abnormal fish trajectories using clustered and labeled data", In Proceedings of 20th IEEE International Conference on Image Processing (IEEE ICIP), pp. 1476-1480, 2013. doi: 10.1109/ICIP.2013.6738303 (~44.5% overall acceptance rate, presented in ORAL session)</p>
[IC06]	<p><b>C. Beyan</b>, R. B. Fisher, "A Filtering Mechanism for Normal Fish Trajectories", In Proceedings of the 21st International Conference on Pattern Recognition (ICPR), pp. 2286-2289, 2012. (~48.5% overall acceptance rate)</p>
[IC05]	<p>B. J. Boom, P. X. Huang, <b>C. Beyan</b>, C. Spampinato, S. Palazzo, J. He, E. Beauxis-Aussalet, S.-I. Lin, H.-M. Chou, G. Nadarajan, Y.-H. Chen-Burger, J. van Ossenbruggen, D. Giordano, L. Hardman, F.-P. Lin, R. B. Fisher, "Long-term underwater camera surveillance for monitoring and analysis of fish populations", International Workshop on Visual Observation and Analysis of Animal and Insect Behavior (VAIB), in conjunction with the 21st International Conference on Pattern Recognition, 2012.</p>
[IC04]	<p>S. Palazzo, C. Spampinato, <b>C. Beyan</b>, "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, 2012. doi: 10.1145/2390832.2390840</p>



[IC03]	<b>C. Beyan</b> , A. Temizel, "Mean-Shift Tracking for Surveillance Applications Using Thermal Infrared and Visible Band Data Fusion", In Proceedings of SPIE Vol. 8020, 802010, Defense, Security and Sensing: Airborne Intelligence, Surveillance, Reconnaissance (ISR) Systems and Applications VIII, pp. 1-13, 2011. doi: 10.1117/12.882838
[IC02]	H. Ogul, <b>C. Beyan</b> , O. Eren, K. Yildiz, T. Ercelebi, B. Sonmez, "MicroRNA target recognition from compositional features of aligned microRNA-mRNA duplexes", In Proceedings of International Symposium on Innovations in Intelligent Systems and Applications (INISTA), 2010.
[IC01]	<b>C. Beyan</b> , H. Ogul, "A fuzzy k-NN approach for cancer diagnosis with microarray gene expression data", In Proceedings of 3rd International Symposium on Health Informatics and Bioinformatics (HIBIT), 2008.

#### Refereed Conference Papers in Turkish (2)

[NC02]	<b>Ç. Beyan</b> , A. Temizel, "Detection of Abandoned Objects Using Thermal and Visible Band Tracking", In Proceedings of 19th IEEE Conference on Signal Processing and Communications Applications (IEEE SIU), pp. 114-117, 2011. doi: 10.1109/SIU.2011.5929600 <i>(Received Alper Atalay Best Student Paper Award, first place)</i>
[NC01]	<b>Ç. Beyan</b> , A. Temizel, "A Hybrid Multi Object Tracker Using Mean-shift and Background Subtraction", In Proceedings of 19th IEEE Conference on Signal Processing and Communications Applications (IEEE SIU), pp. 110-113, 2011. doi: 10.1109/SIU.2011.5929599

## REFERENCES

---

- **Prof. Dr. Robert Fisher** (PhD. Thesis Supervisor)  
rbf@inf.ed.ac.uk  
<http://homepages.inf.ed.ac.uk/rbf/>
- **Prof. Dr. Vittorio Murino** (Principal Investigator 2015-2019)  
vittorio.murino@iit.it  
vittorio.murino@univr.it  
<http://profs.sci.univr.it/~swan/>
- **Prof. Dr. Alptekin Temizel** (MSc. Thesis Supervisor)  
atemizel@metu.edu.tr  
<https://blog.metu.edu.tr/atemizel/>