

Esam Ghaleb

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My research is focused on Human-centered AI, specifically on affective computing, eXplainable AI (XAI), and human behavior recognition. My primary interest is to advance AI by developing transparent and explainable methodologies that aim at improving people's lives, using insights into human behaviors coming from domain knowledge.

Education

Maastricht University <i>Ph.D., Affective Computing and Machine Learning</i> Doctoral Thesis: Bimodal Emotion Recognition Through Audio-Visual Cues	Maastricht, the Netherlands <i>March 2016–July 2021</i>
Istanbul Technical University <i>M.Sc., Computer Engineering</i> Master Thesis: Face Track Retrieval and Recognition Across Age	Istanbul, Turkey <i>September 2013–August 2015</i>
Istanbul Technical University <i>B.Sc., Computer Engineering</i>	Istanbul, Turkey <i>September 2009–July 2013</i>

Current Position

University of Amsterdam Postdoctoral Researcher <i>Dialogue Modelling Group</i> ○ Advisors: Prof. Dr. Raquel Fernández ○ Research Area: Computer Vision and NLP. My current research focuses on developing state-of-the-art computational approaches to model multimodal communication in face-to-face dialogue. Two main modalities, namely, language and bodily gestures, will be utilized for the computational modeling. The research benefits from domain knowledge (coming from the fields of cognitive science and computational linguistics) to understand the emergence and maintenance of cross-modal convergence in dialogue, especially, of people talking about novel objects. ○ The research is conducted within the: Language in Interaction consortium	Amsterdam, the Netherlands <i>September 2022–Present</i>
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Previous Work Experience: Academic Positions

Maastricht University Postdoctoral Researcher <i>Robots, Agents and Interaction (RAI) Group</i> ○ Advisors: Prof. Dr. Gerhard Weiss ○ Research Area: Machine Learning, Explainable AI (XAI), and Human Behavioral Analysis. ○ The research is conducted within the EU H2020 project: PeRsOnalized Integrated CARE Solution for Elderly facing several short or long term conditions & enabling a better quality of LIFE (ProCare4Life)	Maastricht, the Netherlands <i>January 2020–August 2022</i>
Doctoral Researcher <i>Robots, Agents and Interaction (RAI) Group</i> ○ Advisors: Dr. Mirela Popa, Dr. Enrique Hortal, Dr. Stylianos Asteriadis, and Prof. Dr. Gerhard Weiss ○ Research Area: Computer Vision, Machine Learning, and Bimodal Emotion Recognition. ○ The research is carried out within the EU H2020 project: Managing Affective-learning THrough Intelligent atoms and Smart InteractionS (MaTHiSiS)	Maastricht, the Netherlands <i>March 2016–January 2020</i>
Karlsruhe Institute of Technology Research Intern <i>Computer Vision for Human-Computer Interaction (CVHCI) Lab</i> ○ Advisor: Dr. Makarand Tapaswi ○ Research Area: Computer Vision, Human-computer Interaction.	Karlsruhe, Germany <i>June–August in 2014 and 2015</i>

Istanbul Technical University.....

Researcher

Istanbul, Turkey

Smart Interaction and Machine Intelligence Technologies (SiMiT) Lab

July 2013–February 2016

- **Advisor:** Prof. Dr. Hazim Kemal Ekenel
- **Research Area:** Computer Vision, Human-computer Interaction, Mobile Gaming.
- Research within [the European CHIST-ERA project](#) : Collaborative Annotation of multi-MOdal, multi-Lingual and multi-mEdia documents (CAMOMILE)

Teaching Experience

- Graduate TA. **Computer Vision (KEN4255)**. Department of Data Science and Knowledge Engineering, Maastricht University. *Period 5, in 2017, 2018 and 2019.*
- Undergraduate TA. **Programming (PRA2003)**. University College Maastricht (UCM), Maastricht University. *Period 4, 2016.*
- Tutor in DKE's bachelor projects in 2022.

Supervision

MSc Students (daily supervisor).....

- 2021 - **Andre Mertens:** Explainable and Interpretable Features of Emotion in Human Body Expressions
- 2020 - **Jan Lucas:** Deep, Dimensional and Multimodal Emotion Recognition Using Attention Mechanisms

PhD candidates (daily supervisor).....

- 2020-present - **Bulat Khaertdinov:** Deep Learning, Self-supervised Learning, and Activity Recognition

Selected Publications

The full list of publications is available in [my Google scholar profile](#).

Conference Proceedings.....

- [1] E. Ghaleb, A. Mertens, S. Asteriadis, and G. Weiss, "Skeleton-based explainable bodily expressed emotion recognition through graph convolutional networks," in *2021 16th IEEE International Conference on Automatic Face and Gesture Recognition (FG 2021)*, IEEE, 2021.
- [2] A. Mertens, E. Ghaleb, and S. Asteriadis, "Explainable and interpretable features of emotion in human body expressions," in *BNAIC/BeneLearn 2021*, 2021.
- [3] B. Khaertdinov, E. Ghaleb, and S. Asteriadis, "Contrastive self-supervised learning for sensor-based human activity recognition," in *2021 IEEE International Joint Conference on Biometrics (IJCB)*, IEEE, 2021, 1–8 (**second runner up award**).
- [4] B. Khaertdinov, E. Ghaleb, *et al.*, "Deep triplet networks with attention for sensor-based human activity recognition," in *2021 IEEE International Conference on Pervasive Computing and Communications (PerCom)*, IEEE, Mar. 2021, pp. 1–10.
- [5] J. Lucas, E. Ghaleb, and S. Asteriadis, "Deep, dimensional and multimodal emotion recognition using attention mechanisms," in *BNAIC/BeneLearn 2020*, 2020, p. 130.
- [6] E. Ghaleb, J. Niehues, and S. Asteriadis, "Multimodal attention-mechanism for temporal emotion recognition," in *2020 IEEE International Conference on Image Processing (ICIP)*, IEEE, 2020, pp. 251–255.
- [7] D. Dotti, E. Ghaleb, and S. Asteriadis, "Temporal triplet mining for personality recognition," in *2020 15th IEEE International Conference on Automatic Face and Gesture Recognition (FG 2020)*, IEEE, 2020, pp. 379–386.
- [8] E. Ghaleb, M. Popa, and S. Asteriadis, "Multimodal and temporal perception of audio-visual cues for emotion recognition," in *2019 8th International Conference on Affective Computing and Intelligent Interaction (ACII)*, IEEE, 2019, pp. 552–558.

- [9] E. Ghaleb, M. Tapaswi, Z. Al-Halah, H. K. Ekenel, and R. Stiefelbogen, "Accio: A data set for face track retrieval in movies across age," in *Proceedings of the 5th ACM on International Conference on Multimedia Retrieval*, ACM, 2015, pp. 455–458.
- [10] U. Demir, E. Ghaleb, and H. K. Ekenel, "A face recognition based multiplayer mobile game application," in *IFIP International Conference on Artificial Intelligence Applications and Innovations*, Springer, 2014, pp. 214–223.
- [11] A. Aydeger, E. Ghaleb, and S. Oktug, "An energy efficient routing technique and implementation in wsns," in *Signal Processing and Communications Applications Conference (SIU), 2014 22nd*, IEEE, 2014, pp. 1359–1362.

Journal Articles.....

- [12] E. Ghaleb, M. Popa, and S. Asteriadis, "Metric learning-based multimodal audio-visual emotion recognition," *Ieee Multimedia*, vol. 27, no. 1, pp. 37–48, 2019.
- [13] E. Ghaleb, G. Ozbulak, H. Gao, and H. K. Ekenel, "Deep representation and score normalization for face recognition under mismatched conditions," vol. 33, pp. 43–46, 3 2018, *Trends and Controversies, IEEE Intelligent Systems*.
- [14] N. Vretos, P. Daras, S. Asteriadis, E. Hortal, E. Ghaleb, E. Spyrou, H. C. Leligou, P. Karkazis, P. Trakadas, and K. Assimakopoulos, "Exploiting sensing devices availability in ar/vr deployments to foster engagement," *Virtual Reality*, vol. 23, no. 4, pp. 399–410, 2019.
- [15] E. Ghaleb, J. Niehues, and S. Asteriadis, "Joint modelling of audio-visual cues using attention mechanism for emotion recognition," *Multimedia Tools and Applications*, (accepted) 2022.
- [16] B. Khaertdinov, S. Asteriadis, and E. Ghaleb, "Dynamic temperature scaling in contrastive self-supervised learning for sensor-based human activity recognition," *IEEE Transactions on Biometrics, Behavior, and Identity Science*, 2022.

Honors & Achievements

- o Ranked 1st in the [International Challenge on Biometric Recognition in the Wild 2016 \(ICB-RW\)](#)
- o 2013 - 2016 ITU Scholarship as project assistant within the scope of the (CAMOMILE) project
- o 2007 - 2013: Awarded scholarships from the Ministries of Higher Education in Yemen and Turkey, in the scope of supporting talented Yemeni students
- o Among the top 1000 students in the 2006 General Secondary School Exams in Yemen Republic

Additional Skills

Programming languages.....

Python (Pytorch); Matlab, C, C++

Languages

Arabic (Native); English and Turkish (Fluent); Dutch (Intermediate/B1+)