

# Stefanos Gkikas



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Born in 1993 in Greece and currently living in Heraklion, Greece

Stefanos is a Ph.D. candidate focusing on Affective Computing and Emotion AI. His doctoral research specifically addresses automatic pain assessment using multimodal data sources. He is interested in emotion recognition and human behavior analysis, employing advanced deep-learning methods for video data and biosignals.

## EDUCATION

<b>Doctoral Studies   Major focus: Affective Computing</b> Hellenic Mediterranean University, Department of Electrical & Computer Engineering	2021 – Today Heraklion, Greece
• <i>Dissertation: A Pain Assessment Framework based on multimodal data and Deep Machine Learning methods</i>	
<b>Master of Science (joint MSc)   Major focus: Computer Vision</b> Université de Bourgogne	2019 – 2020 Le Creusot, France
• <i>Thesis: Image Quality Estimation: Fundus quality assessment for overall image quality, artifacts, clarity and field definition</i>	
<b>Master of Science (joint MSc)   Major focus: Machine Learning</b> Hellenic Mediterranean University, Department of Electrical & Computer Engineering	2018 – 2019 Heraklion, Greece
<b>Bachelor of Science   Major focus: Image Processing</b> Technological Educational Institute of Crete, Department of Informatics Engineering	2013 – 2018 Heraklion, Greece
• <i>Thesis: Person Identification with image and voice</i>	

## PUBLICATIONS

- 2024 Gkikas. S., Tsiknakis. M., "Twins-PainViT: Towards a Modality-Agnostic Vision Transformer Framework for Multimodal Automatic Pain Assessment using Facial Videos and fNIRS," in 12th International Conference on Affective Computing and Intelligent Interaction (ACII), Glasgow, UK. [Accepted-Pending Publication, arXiv](#)
- 2024 Gkikas. S., Tsiknakis. M., "Synthetic Thermal and RGB Videos for Automatic Pain Assessment utilizing a Vision-MLP Architecture," in 12th International Conference on Affective Computing and Intelligent Interaction (ACII), Glasgow, UK. [Accepted-Pending Publication, arXiv](#)
- 2024 Gkikas. S., Tachos N. S., Andreadis S., Pezoulas V. C., Zaridis D., Gkois G., Matonaki A., Stavropoulos T. G., Fotiadis D. I., "Multimodal automatic assessment of acute pain through facial videos and heart rate signals utilizing transformer-based architectures," in Frontiers in Pain Research. [10.3389/fpain.2024.1372814](https://doi.org/10.3389/fpain.2024.1372814)
- 2023 Gkikas. S., Tsiknakis. M., "A Full Transformer-based Framework for Automatic Pain Estimation using Videos," in 45th Annual International Conference of the IEEE Engineering in Medicine & Biology Society (EMBC), Sydney, Australia. [10.1109/EMBC40787.2023.10340872](https://doi.org/10.1109/EMBC40787.2023.10340872)
- 2023 Gkikas. S., Chatzaki. C., Tsiknakis. M., "Multi-task Neural Networks for Pain Intensity Estimation Using Electrocardiogram and Demographic Factors," in Information and Communication Technologies for Ageing Well and e-Health, ICT4AWE 2021-2022, Communications in Computer and Information Science. [10.1007/978-3-031-37496-8\\_17](https://doi.org/10.1007/978-3-031-37496-8_17)

- 2023 Gkikas. S., Tsiknakis. M., "Automatic assessment of pain based on deep learning methods: A systematic review," in Computer Methods and Programs in Biomedicine. [10.1016/J.CMPB.2023.107365](https://doi.org/10.1016/J.CMPB.2023.107365)
- 2022 Gkikas. S., Chatzaki. C., Pavlidou. E., Verigou. F., Kalkanis. K., Tsiknakis. M., "Automatic Pain Intensity Estimation based on Electrocardiogram and Demographic Factors," in 8th International Conference on Information and Communication Technologies for Ageing Well and E-Health. [10.5220/0010971700003188](https://doi.org/10.5220/0010971700003188)

## REVIEWED FOR PEER-REVIEW JOURNALS

1. Sun. J., Portilla. J., Otero. A., "A Deep Learning Approach for Fear Recognition on the Edge based on Two-dimensional Feature Maps," in IEEE Journal of Biomedical and Health Informatics. [10.1109/JBHI.2024.3392373](https://doi.org/10.1109/JBHI.2024.3392373)
2. Huh. J., Park. S., Lee. J. E., Ye J. C., "Improving Medical Speech-to-Text Accuracy using Vision-Language Pre-training Models," in IEEE Journal of Biomedical and Health Informatics. [10.1109/JBHI.2023.3345897](https://doi.org/10.1109/JBHI.2023.3345897)
3. Chen. X., Ma. W., Gao. W., Fan. W., "BAFNet: Bottleneck Attention Based Fusion Network for Sleep Apnea Detection," in IEEE Journal of Biomedical and Health Informatics. [10.1109/JBHI.2023.3278657](https://doi.org/10.1109/JBHI.2023.3278657)

## EXPERIENCE

<b>Research Engineer   (Fixed-term employment contract)</b> Biomedical Research Institute, FORTH	April – December 2023 Ioannina, Greece
• Role: developing state-of-the-art AI methods for the AI4PA project, "A novel AI-empowered patient monitoring system for patients with Psoriatic Arthritis" <a href="#">Link</a>	
<b>Research Engineer   (Scholarship-PhD)</b> Computational BioMedicine Laboratory, Institute of Computer Science, FORTH	2022 – 2023 Heraklion, Greece
• Role: developing state-of-the-art methods for automatic pain assessment applied to videos and biological signals, i.e., ECG, EMG, and EDA	
<b>Research Engineer   (Scholarship-PhD)</b> Hellenic Mediterranean University, Biomedical Informatics & eHealth Laboratory	2021 – 2022 Heraklion, Greece
• Role: (1) developing affective computing-based algorithms (2) technical advisor to BSc and MSc students to accomplish their thesis	
<b>Research Engineer   (Internship-MSc)</b> Université de Bourgogne, Imagerie et Vision Artificielle Laboratoire (ImViA)	Spring 2020 Le Creusot, France
• Role: developing generative adversarial neural networks (GANs) to generate additional synthetic samples to enhance the fundus (eye) quality assessment pipeline	
<b>Research Engineer   (Internship-BSc)</b> Technological Educational Institute of Crete, Biomedical Informatics & eHealth Laboratory	Spring 2018 Heraklion, Greece
• Role: developing classical image and signal processing algorithms to establish a person-identification system	

## TEACHING

<b>Teaching assistant in Advanced Topics in Biomedical Informatics   (MSc course)</b> Hellenic Mediterranean University, Biomedical Informatics & eHealth Laboratory	2021 – Today Heraklion, Greece
• Role: introducing fundamental concepts of machine learning techniques as applied to biomedical data	
<b>Teaching assistant in Neural Networks   (BSc course)</b> Hellenic Mediterranean University, Intelligent Systems Laboratory	Spring 2019 Heraklion, Greece
• Role: developing the laboratory notes of the course	
<b>Teaching assistant in Pattern Recognition   (BSc course)</b> Hellenic Mediterranean University, Intelligent Systems Laboratory	Fall 2018 Heraklion, Greece
• Role: developing the laboratory notes of the course	

## SEMINARS & WORKSHOPS

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***Introduction to Clinical Psychopathology, Seminar (60h)***

2022

Hellenic Open University

Patras, Greece

***Deep Learning for Medical Imaging, Summer School***

2022

École de technologie supérieure

Montreal, Canada

## COMPETENCES

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**Languages:** Greek (Native), English (London Tests of English - Edexcel Level 3 - B2)

**Programming:** Python (NumPy, Matplotlib, Pandas, sklearn), MATLAB

**Deep Learning Frameworks:** PyTorch (primary), TensorFlow & Keras (familiar)

**Operating System:** Linux, macOS, Windows

**Document Creation:** L<sup>A</sup>T<sub>E</sub>X, Microsoft Office Suite

**Content Creation:** Adobe Creative Suite, Sketch, Lunacy

**Diving License:** B