



TITLE

Multimodal Framework for Emotions Classification

LAB & PEOPLE

- Name of the hosting lab: Laboratory of visual computing, Institute of Engineering
- General activities of the lab: Computer Vision, Data Science, Affective Computing, Machine Learning and Artificial Intelligence, Operational Research
- Number of staff / PhD: 3 (+3 Ph.D. & 2 M.Sc. students)
- Supervisor name and contact: Pedro J. S. Cardoso (pcardoso@ualg.pt) & João M. F. Rodrigues (jrodrig@ualg.pt)

TOPIC OF THE INTERSHIP

- Scientific context of the internship (max 20 lines)
 - Context: Humans are prepared to understand others' emotional expressions from subtle body movements, facial expressions, or the way they express themselves by text or sound. They change the way they communicate in function of those interactions/responses. To move from the traditional human-computer interaction to a human-machine collaboration, where the machine delivers relevant information and functionalities in a timely and appropriate manner, machines, user interfaces, and robots need to be equipped with such capabilities. This field of research falls within the scope of Affective Computing (AC).
 - Main goal: Develop a framework which will embody pre-trained methods to detect emotions from live captured data from a webcam or mobile's phone (camera and/or micro). The application should be able to update on the fly with new methods/models for each type of acquired data (e.g., image, text, or sound) and produce an ensembled result. More details on request.
- Keywords:
 - Affective Computing
 - Computer Vision
 - Human-Computer Interaction
 - Datasets
- Bibliography
 - Cardoso, P.J.S., Rodrigues, J.M.F., Novais, R. (2023). Multimodal Emotion Classification Supported in the Aggregation of Pre-Trained classification models Accepted in the 23rd Int. Conf. on Comp. Science, 3-5 July, Prague, Czech Republic
 - Novais, R., Cardoso, P.J.S., & Rodrigues, J.M.F. (2022). Facial Emotions Classification Supported in an Ensemble Strategy. In: Antona, M.,



2023 Master internship at University of Algarve

Stephanidis, C. (eds) Universal Access in Human-Computer Interaction. Novel Design Approaches and Technologies. HCII 2022. Lecture Notes in Computer Science, vol 13308. Springer, Cham. https://doi.org/10.1007/978-3-031-05028-2_32

- Tasks and duties entrusted to the student:
 - Develop a framework which will embody pre-trained methods to detect emotions from live captured data from a webcam or mobile's phone (camera and/or micro). The application should be able to update on the fly with new methods/models for each type of acquired data (e.g., image, text, or sound) and produce an ensemble result. More details on request.
 - Publish (at least) one paper on the internship's subject.
 - Produce a computational framework prompt to be used by other researchers.
 - Actively participate in the lab's activities and discussion meetings.

- Skills to be acquired or developed:
 - The subject requires and will develop broad knowledge, with particular emphasis on:
 - Computer vision.
 - Machine learning.
 - Affective computing.

PROFILE OF THE DESIRED STUDENT

- Minimum level of study required: B. Sc.
- Field(s) of study: Computer Science, Electrical Engineering, Data Science, or related.
- Scientific skills: Programming skills (preferably in Python)
- Language skills required: Portuguese, English or Spanish

THE INTERNSHIP ASSIGNMENT:

Desired duration of the internship (in months): 1 academic semester (minimum)

Desired Starting date of the mission: -- (no restrictions apply)

Indicative weekly schedule: 35h / week

Remuneration: Not Available

Erasmus grant: Application should be made by the student at the sending institution.

Internship agreement: an internship agreement will be signed.

To SEA-EU students:

If you're interested please send your CV and letter of motivation to the scientist in charge, pcardoso@ualg.pt.