



TITLE

Framework for Human Attributes 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: João M. F. Rodrigues (jrodrig@ualg.pt) & Pedro J. S. Cardoso (pcardoso@ualg.pt)

TOPIC OF THE INTERSHIP

- Scientific context of the internship (max 20 lines)
 - Context: Artificial Intelligence and Smart Systems are having an increasing impact on our day-to-day lives and on how our cities handle our ever-growing needs. Smart systems are systems capable of making decisions based on data received from different sensors and performing actions based on those decisions. These (smart) actions could and should be different for each user depending on their characteristics and needs. Interfaces or interactions with users that employ a “one-size-fits-all” policy should be considered contemporary solutions and are not how future interfaces are expected to behave. The user should be “eased in” to the presence of any technology, where the technology adapts to the user, and not the other way around. This field of research falls within the scope of Affective Computing (AC).
 - Main goal: Develop an integrated framework for human attribute classification, which describes people in a non-intrusive way, forgetting the person as soon as he/she ends the interaction so as not to compromise their privacy. The framework should allow (on-the-fly) to predict a person’s: age, height, gender, emotion, actions, disabilities, used objects (e.g., glasses, bags, white cane, ...), clothes, and the environment where the person is. Complementary work should be the classification of a person in a specific culture. More details on request.
- Keywords:
 - Affective Computing
 - Computer Vision
 - Human-Computer Interaction
 - Datasets
- Bibliography
 - Rodrigues, J.M.F., Cardoso, P.J.S. (2023). Body-Focused Expression Analysis: A conceptual framework. Accepted in 25th International



2023 Master internship at University of Algarve

Conference on Human-Computer Interaction., 23-28 July,
Copenhagen, Denmark

- Turner D., Rodrigues J.M.F., & Rosa M. (2020). Describing People: An Integrated Framework for Human Attributes Classification. In Monteiro J. et al. (eds) INCREaSE 2019, 324-336, INCREaSE 2019. Springer International Publishing. DOI: 10.1007/978-3-030-30938-1_26
- Tasks and duties entrusted to the student:
 - Develop an integrated framework for human attribute classification, which describes people in a non-intrusive way, forgetting the person as soon as he/she ends the interaction so as not to compromise their privacy. The framework should allow (on-the-fly) to predict a person's: age, height, gender, emotion, actions, disabilities, used objects (e.g., glasses, bags, white cane, ...), clothes, and the environment where the person is. Complementary work should be the classification of a person in a specific culture. 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, jrodrig@ualg.pt.