BORSA N. 5

DAUSY

Borsa di Ateneo
Tematica: *"Awareness in human-human and human-robot interactions"*

Research theme title:

Awareness in human-human and human-robot interactions

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Curriculum of DAUSY:

C1 - AS for Automation

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Description:

The aim of the training project is to study the impact of awareness on individual decision-making processes in different scenarios, such as human-human, human-robot, and human-environment interactions. This is an important aspect in many different fields as we might expect that in all cases, the higher the individuals' level of awareness, the higher their well-being. Cognitive and behavioral factors, involved in awareness and self-awareness, will be investigated to understand the mechanisms of individual and group decision-making. Moreover, since robot devices that establish a functional relationship with a human give rise to complex human-technology systems, the aim of the research will be to develop suitable interpretive models from a cognitive viewpoint, as well as new principles and evaluative models from a moral viewpoint. Moreover, our purpose is to analyze the impact that aware decisions may have on environmental management, and, on the other hand, how extreme environmental events affect human behavior. The efforts in understanding awareness will allow us to design technologies and methodologies considering all the cognitive, social, ethical, and environmental implications related to their adoption.

Specific Information:

Applicants must hold a master's degree, preferably in Engineering, with a good background in relevant areas of interest (i.e., machine learning, optimization, and control). Solid mathematical and coding skills are encouraged. Proficiency in both spoken and written English is required. The candidate should be highly motivated and interested in undertaking innovative and challenging research activities involving both theoretical analysis and experimental validation.

References:

[1]. Bizzarri F., and Mocenni C., "Awareness", Academia Letters, 2022.
[2]. Madeo D., Mannarini T. Salvatore S., and Mocenni C., "Modeling pluralism and self-regulation explains the emergence of cooperation in networked societies", Scientific Reports, 11, 19226, 2021.
[3]. Unger L., Sloutsky V.M., "Ready to Learn: Incidental Exposure Fosters Category Learning", Psychological Science. May 2022.
[4]. Casalino A., Messeri C., Pozzi M., Zanchettin A. M., Rocco P., and Prattichizzo D., "Operator Awareness in Human–Robot Collaboration Through Wearable Vibrotactile Feedback," in IEEE Robotics and Automation Letters, vol. 3, no. 4, pp. 4289-4296, 2018.
[5]. Kahneman D., Thinking, fast and slow, Penguin Books, 2011.

Type of scholarship:

The scholarship will be financed by research grants of the PhD supervisors

Study and research period outside the Hosting Institution:

Duration of the study and research period at the company or research center or Public Administration: 6 to 12 months

Name of receiving company or public administration: to be defined

Duration of the study and research period abroad: 6 to 18 months

Name of receiving institution: to be defined