Neuroscience Lab
Joint Laboratory between Intesa Sanpaolo Innovation Center S.p.A. e Scuola IMT Alti Studi Lucca

RICERCATORI

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LABORATORIO

Neuroscience Lab

Research Activity

Given the proven tradition of studies in economic fields and the solid experience of its researchers in the use of psychophysiological methodologies, the IMT School has complied with the request of Neuroscience Lab (NS LAB) Intesa Sanpaolo Innovation Center S.p.A to develop a joint laboratory to combine, through applied and translational research cases, the most advanced interdisciplinary approaches of cognitive, computational and social neurosciences to the sciences and strategic and managerial fields of companies, business organization and human resources: from the understanding of perceptual, cognitive, affective and decision-making processes, from the characterization of personological and psychometric profiles, towards the conception and planning of new products and services by companies aimed at workers or consumers.

The research with the NS LAB presides over the state of the art from the point of view of application of managerial and organizational neurosciences, psychophysiology and advanced analytical approaches, offering possible services and applications in four business domains: Training, Cognitive Ergonomics, Communication, Resources human. In the joint research activities, the experimental team focuses attention on the human resource by investigating the dynamics of interaction, identification and participation in social and economic organizations and characterizes their correlation with the neurobiological bases.

Through a typically interdisciplinary approach, the services aim to identify the aspects of the person that promote the correct functioning of the business, to characterize behavior towards strategic objectives, to define the mechanisms involved in decision-making and learning processes to increase the value and competitiveness of businesses themselves.

Images
and plots

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Tools, Technologies and Services

The conjoint laboratory has the most modern devices for recording physiological, central and peripheral parameters, which can be used both inside the laboratory in a controlled environment with volunteers, and in the company. In the latter case, the group works in synergy with the industrial relations, privacy and human resources office so that the research protocols that are implemented are approved by all the responsible structures, as well as by the Ethics Committee.

The instrumentation and technologies used, some of which directly in the company, are:

- Stress bracelet for measuring biosignals
- Eyetrackers for evaluating gaze direction, observation time, and pupil dilation
- Electroencephalography for measuring the electrical activity of the brain in response to stimuli
- Structural and functional magnetic resonance for the measurement of the activation of brain areas and the exact position of the activated area
- Virtual reality headsets to view digital, environmental, and auditory stimuli

A list of facilities can also be found at https://nslab.imtlucca.it/

Possible applications and collaborations

The research group belonging to the Neuroscience Lab has identified a series of activities and services that can be addressed to leading companies in a wide range of sectors and industries.

By way of example, the jobs that can be carried out are:

- conception and monitoring of new learning models;
- creation of tools for improving the well-being of employees;
- psychometric and neurometric analyses for the construction of effective communication strategies both internally and externally;
- psychometric analyses on the corporate population of personality traits, leadership and social interactions for the creation of predictive models of the success of outplacement of people in the company following reskilling programs, talent and leadership development, search and selection, outplacement, organization and human resources management.

Furthermore, the group has carried out collaborations with the following partners:

- Intesa Sanpaolo SpA
- Lucca Crea Srl
- Oniride Srl
- Agenzia Regionale di Sanità della Toscana (ARS)
- Associazione Volontari Italiani del Sangue e Avis Regionale Toscana

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