

Research options available for topic B

Research topics a) and b) offered by every Doctoral Course involved in UNIPhD are frameworks within which every applicant has to present an original research project in collaboration with a Supervisor at the University of Padua.

Potential Supervisors at Unipd have proposed the following detailed research options, which are related to the research topic. They are offered as a guideline and should facilitate your contact with potential Supervisors. Supervisors' e-mail is specified in every research option table. You are welcome to contact them directly.

Note that this research option list is not at all exhaustive and, within the topic you have chosen, you are free to propose a different research project.

Doctoral Course	BRAIN, MIND AND COMPUTER SCIENCE
Macro-area	Cross-domain Physical Sciences and Engineering / Life Sciences
Department name	Department of General Psychology
Webpage	http://hit.psy.unipd.it/BMCS
Research topic B	<p>Neuroscience, technology and society</p> <p>Projects within this topic focus on innovative research in cognitive science, and neuroscience applied to the emerging technologies and bearing societal relevance. Projects in this curriculum deal with psychological issues and opportunities raised by the tight interdependence between humans and machines and adopt investigation techniques that address such interdependence directly. Domains belonging to this curriculum include human-computer interaction, cybertherapy, brain-computer interfaces, assistive technologies for sensorial, perceptive and cognitive problems, computational cognitive neuroscience and biomedics as well as topics related to smart communities.</p>
Link to the UNIPhD Call (Academic Year 2022/2023)	https://www.unipd.it/en/uniphd
Latest Update	11.01.2022
#Number of available Research Options	2 <i>Scroll down to see all the Research Options</i>

1 Research Option Description

Doctoral Course	Brain, Mind and Computer Science
Department name	Department of General Psychology
Research topic B	Neuroscience, technology and society
Research option	Aligning privacy notices terminology and user's concerns: A framework to support human-centred transparency
Supervisor	Anna Spagnolli anna.spagnolli@unipd.it
Webpage	https://www.dpg.unipd.it/en/anna-spagnolli
Context of the research activity and objectives	The research activity aims at providing a framework to organize and convey privacy policy information in a way that is genuinely transparent to lay users. Such framework will allow the users to find the text segment addressing their concerns and decision criteria. The project will: a) identify user-centred privacy categories; b) create dictionaries to automatically map the user-based categories into a policy text using; c) validate the framework's effectiveness.
Infrastructures	Software assisting qualitative analysis (Noldus The Observer) and analysis of the eyes' activity (SMI RED500 e Pupil Labs); institutional license to corpus management tools (eg. SketchEngine)
Skills and competencies for the development of the activity	Conversation analysis, linguistics, social psychology
Training offer	Text mining, Human computer interaction, Tools for online experiments, Python for non-computer scientists, Ethical, legal and social effects of technology
Possible Secondments	<p>Non-academic: Expert.ai (supervisor: dr Filippo Nardelli). Expert.ai is a leading, award-winning company in artificial intelligence applied to text with more than 20 years of experience in natural language understanding. Its legal solutions enable augment legal experts' ability to read and understand thousands of regulatory documents (https://www.expert.ai/).</p> <p>Academic: Department of Communication and Media, University of Liverpool (supervisor: dr. Elena Musi)_Dr Musi's current research interweaves Artificial Intelligence and Communication Sciences with particular focus on (mis)information and human-computer interaction (https://www.liverpool.ac.uk/communication-and-media/staff/elena-musi/).</p>

2 Research Option Description

Doctoral Course	Brain, Mind and Computer Science
Department name	Department of General Psychology
Research topic B	Neuroscience, technology, and society
Research option	Designing Human Centric Cognitively Adaptive Workstation and Cobots
Supervisor	Luciano Gamberini luciano.gamberini@unipd.it
Webpage	https://www.dpg.unipd.it/en/luciano-gamberini
Context of the research activity and objectives	This project topic concerns the use of cognitively adaptive solutions to design ergonomic and inclusive solution for assembly and tightening industrial lines. A Human-Centric, cobot-based workplace needs to start from the users' needs, skills and resources. Bio-sensing and neurocognitive technologies can be adopted to reach higher productivity as well as life and work satisfaction; they can also allow to include fragile workers in the labour market.
Infrastructures	Software assisting qualitative analysis (Noldus The Observer XT) and tool for monitoring/analysis eyes' behaviour (i.e., SMI RED500 500Hz remote eye tracker; Pupil Labs 120Hz/200Hz binocular glasses); a wearable 5-channels Procomp5 Infiniti amplifier (Thought Technology Ltd) and dedicated sensors (e.g., surface electrodes) for gathering/analysing of psychophysiological data (e.g., skin conductance, heart-rate, electromyography).
Skills and competencies for the development of the activity	Background in ergonomics, human-computer interaction, psychophysiological data
Training offer	Foundations of cognitive neuroscience, Human computer interaction, Cognition and computations, tools/applications of machine learning
Possible Secondments	<u>Non-academic:</u> B.N.P srl (supervisor: dr Carlo Pettenon). (https://bnpsrl.com). BNP provides ergonomic solutions for assembly and industrial tightening. <u>Academic:</u> Department of Communication and Media, University of Liverpool (supervisor: dr. Giulio Jacucci). Prof Jacucci is Professor at the Det. of Computer Science and director of the Network Society Programme at the Helsinki Institute for Information Technology. (https://researchportal.helsinki.fi/en/persons/giulio-jacucci)