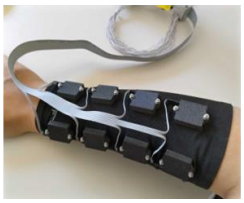
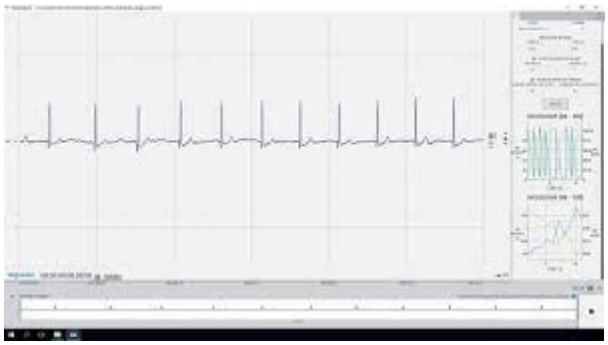
MASTERS PROJECTS

1. **Thesis type:** MSc

Title: Subjective and physiological responses to real and digital affective touch
Description: The project investigates the potential (and limitations) of tactile actuators to create digital versions of affective touch. Participants are administered real (skin-to-skin) or digital (vibrotactile) tactile stimulation with optimal or sub-optimal characteristics for the activation of C-Tactile afferents that encode affective characteristics of touch. Subjective measures (ratings on pleasantness, realism and emotional content) and physiological measures (heart rate and skin conductance) are used to distinguish the effects of these two types of touch.






Starting date: 2023-05
Data type: empirical data to be collected
Ideal student's background: psychology, neuroscience, data science
Supervisor and contact: Dr. Irene Valori, irene.valori@tu-dresden.de
Responsible Professor: Junior Professor Merle Fairhurst

2. **Thesis type:** MSc

Title: Interpersonal affective touch in Virtual Reality

Description: The project investigates how people perceive interpersonal, social touch in Virtual Reality. The candidate for this student project can proficiently use Blender and Unity to create 360° scenarios and animations of avatars performing dynamic interpersonal tactile gestures (e.g. a gentle caress on the touchee's arm). The student will also conduct lab-based experiments to test the scenarios with participants.

Starting date: 2023-05

Data type: empirical data to be collected

Ideal student's background: computer science, miscellaneous (skills with Unity, Blender, game development are required)

Supervisor and contact: Dr. Irene Valori, irene.valori@tu-dresden.de

Responsible Professor: Junior Professor Merle Fairhurst

3. **Thesis type:** MSc

Title: Interpersonal affective touch: a neurophysiological study in Virtual Reality
Description: The project investigates the role of in-group/out-group (e.g. cultural and gender) dynamics in shaping the perception and interpretation of affective touch. Participants are exposed to immersive virtual reality scenarios where they receive touch from an avatar from either an in-group or out-group. Subjective ratings (pleasantness, realism and emotional content), physiological responses (heart rate and skin conductance), and neural activity (fNIRS) are measured.
Starting date: 2023-09
Data type: empirical data to be collected
Ideal student's background: psychology, neuroscience, data science
Supervisor and contact: Dr. Irene Valori, irene.valori@tu-dresden.de
Responsible Professor: Junior Professor Merle Fairhurst

BACHELOR PROJECTS

1. **Thesis type:** BSc

Title: Cultural differences in perception of vicarious affective touch
Description: The project investigates the role of in-group/out-group dynamics in shaping the perception and interpretation of affective touch. Using the online experimental platform Gorilla.sc, students will design and implement a new empirical study investigating cultural differences in the way we perceive vicarious touch (comparing different types of touch, body areas and cultural characteristics of the toucher-touchee). Subjective ratings (pleasantness, emotional meaning) will be collected.
Starting date: 2023-06
Data type: empirical data to be collected
Ideal student's background: psychology
Supervisor and contact: Dr. Irene Valori, irene.valori@tu-dresden.de
Responsible Professor: Junior Professor Merle Fairhurst

2. **Thesis type:** BSc

Title: Cultural differences in affective touch behaviour
Description: The project investigates the role of in-group/out-group dynamics in shaping the way people use affective touch. Using the online experimental platform Gorilla.sc, students will design and implement a new empirical study investigating cultural differences in the way individuals touch others in different situations (to express different emotional meanings, on different body areas, depending on the touchee's demographic characteristics). Participants will imagine touching others in different contexts and simulate touching them by interacting with a touch-screen. Touch behaviour (e.g., kinematics of touch-screen stroking) will be measured.
Starting date: 2023-09
Data type: empirical data to be collected
Ideal student's background: psychology
Supervisor and contact: Dr. Irene Valori, irene.valori@tu-dresden.de
Responsible Professor: Junior Professor Merle Fairhurst

3. **Thesis type:** BSc

Title: Literature review on how we move to touch
Description: The project investigates the kinematic characteristics of affective touch. Students will conduct a literature review on how motor parameters help us understand the processes and meanings behind touch behaviours. They will review literature on research questions such as: What are the motor, kinematic parameters that describe affective touch? Do we touch objects or social others differently? Does touch look different when used to express different emotional meanings? Do we move differently when touching different body areas of other people? Do we move differently when touching others according to the type of relationship (e.g. familiarity, trust)?
Starting date: 2023-06
Data type: literature review to be conducted
Ideal student's background: psychology, neuroscience
Supervisor and contact: Dr. Irene Valori, irene.valori@tu-dresden.de
Responsible Professor: Junior Professor Merle Fairhurst

4. **Thesis type:** BSc

Title: Literature review on how we express emotions in telecommunication
Description: The project investigates the diverse use and experience of affective multisensory signals in the context of human telepresence, delving into the role of individual characteristics such as age, gender, cultural background, neuropsychological and sensory profile. Students will conduct a literature review on the technical possibilities and challenges for multisensory telecommunication of emotional signals.
Taking a step towards applying this knowledge for the promotion of people's mental health and well-being, the students will help develop and implement use cases to promote social connection through sensory information in telecommunication.
Starting date: 2023-09
Data type: literature review to be conducted
Ideal student's background: psychology, neuroscience, computer science, affective computing
Supervisor and contact: Dr. Irene Valori, irene.valori@tu-dresden.de
Responsible Professor: Junior Professor Merle Fairhurst
will be aimed at the integration of neuroimaging, physiological, behavioural, and subjective measures to model