Touch-enabled Tactile Internet Training Network and Open Source Testbed (TOAST)

Application deadline: 28-02-2023 | Date of enrolment: 1-9-2023

Project description

The researcher will carry out his activity within the project MSCA-DN Marie Sklodowska Curie Action - Doctoral Network 2021 called "TOAST". In the following, a brief motivation for the project is reported.

The touch-enabled Tactile Internet (TI), also known as the Internet of Skills, is anticipated to bring an economic and social impact to the digitized world. It has attracted massive interest from the industry and is aligned with the goals of Horizon Europe. TOAST will train the next generation of researchers to tackle the challenges of TI. More in detail, the researcher will focus on developing a low-cost wearable device with low energy consumption, able to capture, transmit and render tactile interactions. Moreover, the design and development of a communication architecture and of a communication protocol will be crucial for the purpose of establishing a two-way channel between users for the exchange of tactile signals.

The final step will be the assessment of the performance of the device in terms of immersiveness and realism of the tactile interaction. This will be done through an experimental campaign enrolling multiple subjects.

Two secondments are planned: The former will be at the Delft University of Technology (Netherlands), for 3 months, under the supervision of Prof Fitzek. In this period the Ph.D. candidate will develop first prototype of the communication architecture for the RemoTouch. The second period will be in a company (WEART, Italy), under the supervision of Dr. Gioioso. The period will last 6 months, during which the researcher will deal with technologies integration for remote tactile sensing and rendering.

Eligibility Conditions

- Not having already obtained a PhD and not currently enrolled in any PhD.
- The candidates are eligible if they have not resided in Italy for more than 12 months within the past 36 months.

Required Skills

- Software development.

- Useful programming skills: different programming languages e.g., C/C++/C#, Python, Matlab/Simulink.

- Other useful skills: machine learning, statistical data processing and signal processing.

- Strongly motivated for team working.

How to apply

- A link for the online application will be provided soon.

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