

DC9: Distributed Edge Intelligence for Immersive Tactile Internet

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

Project description

Distributed edge intelligence is one of the enabling technologies for time-critical applications by allowing devices to offload computation and energy demanding operations to computing resources in the proximity. In Tactile Internet, due to the resource limitation on the robot side, it is desirable to leverage distributed edge intelligence instead of performing computation locally.

This project aims to develop a distributed edge intelligence framework for the Tactile Internet, including the development of advanced offloading methods for computation tasks (e.g., Deep Learning real-time inference, 3D reconstruction), balancing Cloud and Edge computation and edge caching. In particular, task-oriented communication, an emerging communication paradigm, will be studied and applied for designing efficient transmission strategies for task data in computation offloading. It is important to understand trade-offs of edge intelligence engine's location in the network and the communication and computation load of tasks, under different network QoS and user QoE requirements of tactile Internet services, and then perform joint optimization of computation, communication, and haptic control.

Eligibility Conditions

- Master's degree in Computer Engineering, Electrical Engineering, Telecommunications, Computer Science, or within a relevant area.
- The candidates are eligible if they have not resided in Denmark for more than 12 months within the past 36 months.

Required Skills

- Background on wireless communication system, optimisation techniques, and deep learning is desired.
- Strong analytical and programming skills are desired.
- Experience in haptic control, haptic technology, haptic applications, AR and VR is a plus.
- Excellent English verbal and written skills.
- Be able to work well and communicate expert knowledge in an interdisciplinary team.

How to apply

Contact details: Qi Zhang qz@ece.au.dk and Daniel Enrique Lucani Rötter daniel.lucani@ece.au.dk

Please submit your application via the online application system [here](#).

