

CORSMAL

Abstract

Collaborative object recognition, shared manipulation and learning

CORSMAL proposes to develop and validate a new framework for collaborative recognition and manipulation cooperation with humans. The project will explore the fusion of multiple sensing modalities (touch, sound, vision) to accurately and robustly estimate the physical properties of objects in noisy and potentially unknown environments. The framework will mimic human capability of learning and adapting across a set of different manipulators, tasks, and environments. In particular, we will address the problems of (1) learning shared autonomy models for human-robot interactions with humans and (2) generalising capabilities across tasks and sites by aggregating data from different environments to enable accurate object recognition and manipulation of unknown objects in unknown environments. The project will define learning architectures for multimodal sensory data as well as for aggregated data from different environments. The goal of the project is to identify the most suitable framework resulting from learning across environments and to evaluate the use of specialised local models and generalised global models. The goal here is to continually improve the robustness of the models. The robustness of the proposed framework will be evaluated with prototype experiments in real environments. Importantly, during the project we will organise two community challenges to favour data sharing and experiment reproducibility in additional sites.

(2017)

Object recognition and manipulation by robots: Data sharing and experiment reproducibility (ORMR)

Partnership & Contact

CORSMAL starts in April 2019, lasts 36 months and involves the partnerships below. The financial support of CHIST-ERA is about 865 796 €.

Partnership

Queen Mary University of London	United Kingdom
SU Sorbonne Université	France
École polytechnique fédérale de Lausanne (EPFL)	Switzerland

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Links:

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