

SICSA - Distinguished Visiting Fellowship – Hagen Lehmann

The visit took place from 26.03.2017 to the 13.04.2017. The goal of the visit was the implementation and testing of a conversational gaze controller for the iCub robot of Heriot-Watt University's Robotics Lab, and the establishment of future collaboration possibilities between different Scottish research institutions and the visiting fellow Dr. Lehmann concerning the research topic of social robotics.

Three different networking activities were realized during the visit. (1) Dr. Lehmann gave a two hours lecture at Heriot-Watt University about methodologies and approaches in social robotics research. Students and staff from the Robotics Lab and the Interaction Lab attended the lecture. The follow-up discussion led to the development of ideas for further collaborations. These collaborations will include the development of new interaction behaviors for the iCub robotic platform, which was recently bought by the robotics lab. (2-3) Further talks were held by Dr. Lehmann at the University of St Andrews on the 03.04.2017, and at the University of Glasgow on the 06.04.2017. The talks were given to students and staff from the Computer Science and Psychology Departments of these Universities. The feedback was very positive and in both cases followed by lab tours and discussions with members of staff and PhD students. During these discussions the possibilities for joint projects and research work emerged, which will potentially result in collaborations between Dr. Lehmann, University of Glasgow's the Psychology Department, and the Heriot-Watt University's Robotics Lab.

Besides these networking events and possibilities, Dr. Lehmann worked on the implementation of a conversational gaze controller for the iCub robot and ran a set of 60 experiments in order to test the implemented behaviors. This conversational gaze controller is part of a larger project the Dr. Lehmann is developing together with Dr. Broz from Heriot-Watt University. During the experiments different versions of the gaze controller were tested with human participants using questionnaires and gaze tracking equipment. The results of this study will be published as research paper in the proceedings of the 5th International Conference on Human-Agent Interaction 2017.

The set of experiments carried out during this visit was conceptualized as a first step in a series of experiments, which aim at a more holistic development of non-verbal robotic social interaction behaviors. These behaviors will include, besides the currently implemented conversational gaze model, a dependency of gaze on speaker role and the capability of the robot to recognize facial emotions in humans and to adapt its gaze accordingly. It is planned that the implementations of these behaviors will be developed in collaboration between Dr. Lehmann, Heriot-Watt University's Robotics Lab and Interaction Lab, and University of Glasgow's Department of Psychology.