Early-Stage Researcher (ESR) n. 7

**Integration of vision and language for human-robot interaction**

**OBJECTIVES**: To develop new approaches that bridge together perception, language and action in robotic scenarios, fostering a natural interaction between humans and robots. Objectives of the ESR include:

- the development of language and vision-based navigation algorithms, in which a mobile agent is trained to perform actions or reach a target destination via natural language instructions;

- the investigation of solutions for interacting with robotic agents in natural language, by endowing the robot with the capability of describing its current state, and understanding inputs in natural language;

- the training of navigation and interaction algorithms on simulated environments and their deployment on real robots.

**EXPECTED RESULTS**: State-of-the-art algorithms for navigation and visual-semantic tasks which can bring the interaction between human and robots feasible in natural language, and which can effectively connect vision and language on robotic systems. Novel and state of the art approaches for real-time HRI in natural language, with a specific focus on semantically challenging domains. Deployment of such algorithms on real robots.