

SPRING Socially Pertinent Robots in Gerontological Healthcare



Towards robots in multi-party conversations



To properly fulfil social roles, there is a crucial need for robots able to move, see, hear and communicate in unstructured populated spaces.

SPRING aims to develop **Socially Assistive Robots** with the capacity of performing **multi-person interactions** and **open-domain dialogue**.

SPRING's Objectives



The **scientific** objective of SPRING is to conceive innovative methods and algorithms to ground the required social robot skills.



The **technological** objective of SPRING is to create a new line of robots that are flexible enough to adapt to the needs of the users.



The **experimental** objective of SPRING is twofold: to validate the technology in a gerontology hospital, and to assess its acceptability by patients and medical staff.

European Expertise Mix



Computer **vision**, **audio** processing & sensor **fusion** for robotic platforms.



Multi-person **dialogue** modelling, language processing, **robot behaviour**.



Visual-based **localization**, human behaviour **understanding**.

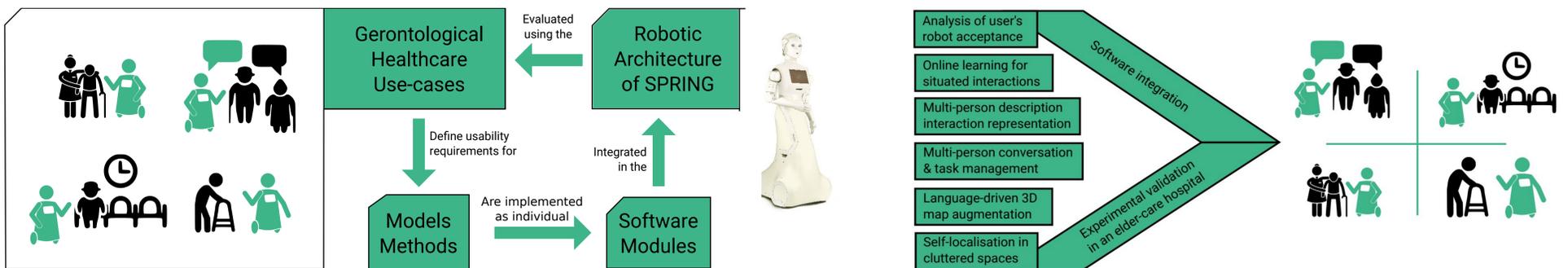


Validation of technology in **gerontological healthcare**.



Robot **manufacturing**, **software** integration, **robotics for healthcare**.

Our Methodology



- Statistical and deep machine learning for audio and visual processing and for learning robot control.
- Online learning algorithms devoted to robotic platforms.

- Continuous integration and unit testing for software development.
- Acceptance evaluated with the system usability scale and the USUS framework.

SPRING's Impact

- To develop **core robotics technologies** related to AI: social interaction.
- To measure the benefit of the technology in **gerontological healthcare**.
- To push the **scientific state-of-the-art** in multiple disciplines: computer vision, behaviour understanding, audio processing, dialogue modelling & robot behaviour generation.
- To **contribute to the future of social robotics**, enabling natural conversational interactions with multiple persons.
- Improve the healthcare **user/personnel experience**.
- Make **recommendations** for national and regional policies.

SPRING's Architecture

