ECHORD++

The European Coordination Hub for Open Robotics Development

Kinesiotherapy and Rehabilitation for Assisted Ambient Living

Telecom Bretagne

Centre Hospitalier Regional et Universitaire de Brest

Génération Robots

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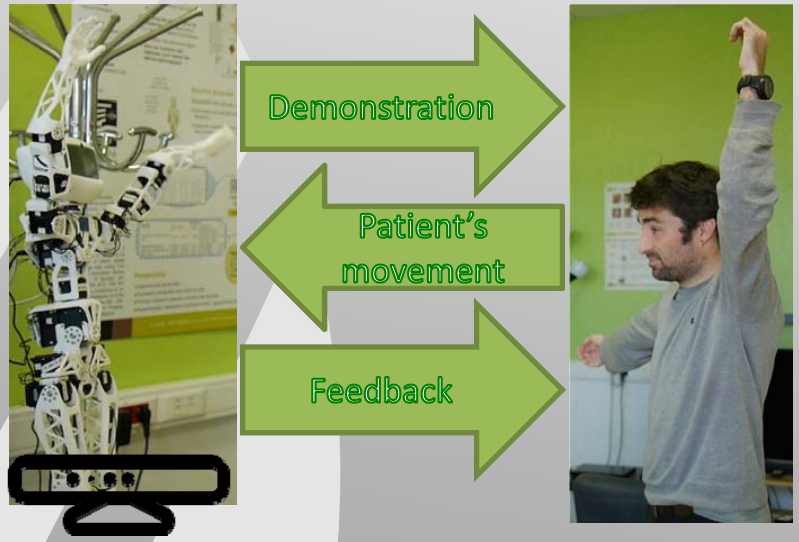
BLUE OCEAN ROBOTICS – for humans

RUROBOTS Cognitive Science at Work

SEVENTH FRAMEWORK PROGRAMME

A humanoid robot coach for physical rehabilitation

- **Objective**: Personalised and continuous coaching to improve healthcare
- **Purpose**: Prototype a robot to coach physical exercises for people suffering from low back pain
- **Idea**: Human-robot interaction and intelligent tutoring system
- **Means**:
  - Cost-effective humanoid platform
  - Engagement through HRI
  - Imitation learning algorithms



Novelty/Objectives

- **Novelty**
  - A cost-effective lightweight anthropomorphic robot
  - Personalised feedback for rehabilitation exercises
  - Clinical tests
- **Objectives**
  - Define exercises used for low-back pain
  - Develop an anthropomorphic robot that can coach rehabilitation exercises
  - Detection of patients' errors
  - Deliver feedback efficiently by human-robot interaction

Impact

- Increase in the sales of Poppy Robots
  - Improved anthropomorphic robotic platform
  - Low-cost humanoid robot
  - Knowledge sharing through the open-source project Poppy
- Improved rehabilitation for patients
  - Closer monitoring of patients
  - Patients exercise more on their own
- Use of Poppy for rehabilitation
  - Reduced work charge for therapists
  - Fewer interventions by the therapist directly
  - Acceptance by therapists
  - Acceptance by patients