Assistive Robotics and Smart Home Sensing – Technology to support healthy ageing and independent living

Praminda Caleb-Solly, Bristol Robotics Lab, UWE

This workshop will provide hands-on experience of new and emerging smart sensing and connected assistive robotics technologies. You will have an opportunity to explore what these technologies might mean now and in the future for health and social care.

The workshop will also explore future opportunities and barriers, and how user-centred design can support the design and development of innovative solutions that better understand user needs and requirements.

DAY 1

10:00  Arrival and refreshments - in the UWE Enterprise Zone.
10:20  Welcome and introductions (BRL Seminar Room)
10:30  Accessibility Needs and Design Implications

This session will cover the impact of ageing on the body and how sensory, physical and cognitive impairments, as well as long-term conditions impact on people’s ability to interact with technology. It will also cover how inclusive design principles, which can help to ensure accessibility.

Learning Objectives:
- Understand human characteristics and diversity that impact interaction with robots in different contexts:
- Physiological and psychological attributes; ergonomics; memory; cognition, problem solving, skills acquisition; situation awareness, mental models, fatigue and human error
  o recognise the impact of context on these attributes
- Recognise impact and implications of these for HRI and design

12.30  Lunch
13:30 Assistive Robots – An overview of the state of the art
In this session Prof Caleb-Solly will share research on ongoing assistive robotics projects. The session will be very interactive with opportunities to discuss and debate how these emerging technologies will shape, integrate with and impact the health and care services.

15.30 Tour of Bristol Robotics Laboratory
  BRL Assisted Living Studio

16:00 Recap and Reading Homework for Day 2

Day 2

10:00 Arrival and refreshments - in the UWE Enterprise Zone.
10:20 Welcome and introductions (BRL Seminar Room)
10:30 The User-Centred Design Process and Evaluation of Assistive Technology Solutions
  Learning Objectives:
  - Understand a UCD process
  - using an assistive robot case study analyse stages from concept to deployment
  - learning how to design and implement an evaluation methodology
    o evaluation metrics
    o methods for evaluation

12.30 Lunch

13:30 Smart Homes and Connected Robots
  Assistive robots, working in conjunction with smart home sensors, can enable pro-active initiative to prompt and support a person wherever they are in their home. The technology can also be configured to make the best use of a shrinking care workforce. The potential opportunities and challenges of this technology will be shared and discussed.

15.30 Journey Mapping for the design and deployment of an assistive robotic solution
  Based on a use case persona and scenario we will go through a journey mapping exercise focussing on each stage of the design process to identify issues, possible concepts or solutions and consider time-lines, stakeholders and skills required to realise possible solutions.

16.30 Recap and feedback

Please email rifbristol@brl.ac.uk if you have any questions about this workshop