

# ORGANISATIONAL LIFE ASSISTANT (OLA)

FOR FUTURE ACTIVE AGEING



ORGANIZATIONAL  
LIFE ASSISTANT

# PARTNERS INVOLVED

- Microsoft Portugal (MLDC) – Portugal [Coordinator]
- Knowledge Society Association (SSW) - Poland
- Bay Zoltán Nonprofit Ltd. For Applied Research (BZN) - Hungary
- ISCTE – University Institute of Lisbon - Portugal
- Comfort Keepers – Confort at Home, Lda. (CKPT) - Portugal
- Liquid Media AB (LM) - Sweden



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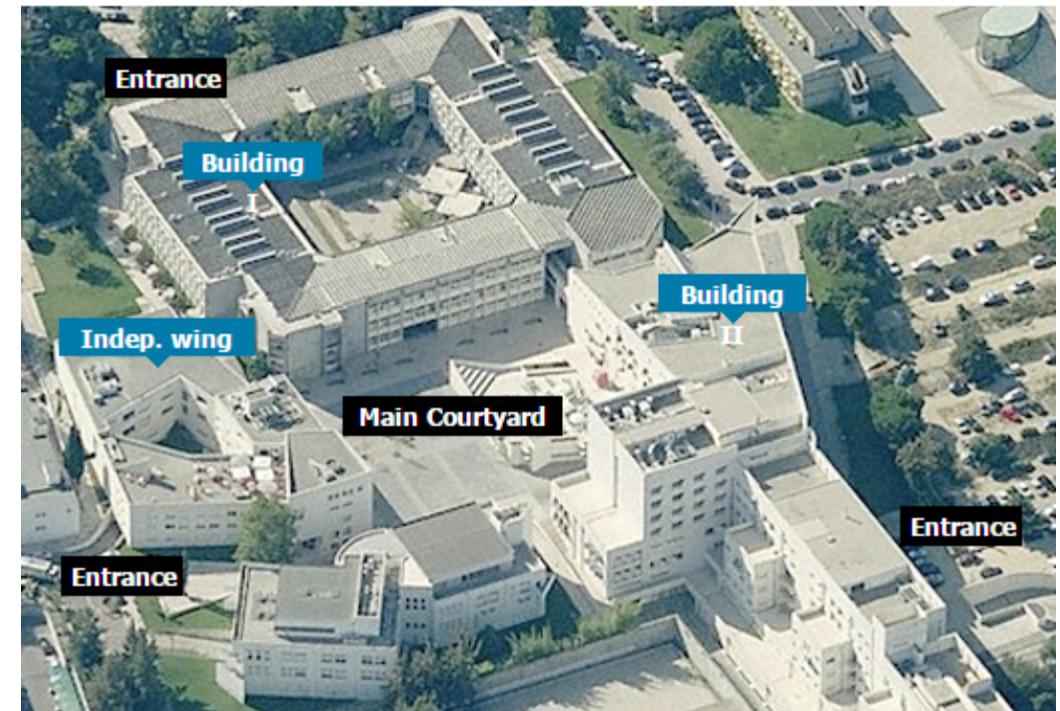
- 1. Organisational Life assistant
  - 1. Project Objectives
  - 2. Motivations and the main challenge
- 2. Environment Analysis
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# ISCTE-IUL

## ISCTE-Instituto Universitário de Lisboa

Located in the center of Lisbon, covers many fields of knowledge integrating the following schools:

- ISCTE Business School
- School of Sociology and Public Policy
- School of Social Sciences
- **School of Technology and Architecture**



# DLS – ISTAR-IUL

Digital Living Spaces (DLS) is a research group of ISTAR-IUL (Information Science, Technologies and Architecture Research) that focuses on the following areas of knowledge:

- Virtual Reality
- Augmented Reality
- Participate Digital Fabrication
- Human-Computer Interaction
- Computing in AEC
- Ambient Assisted Living



### Virtual Reality

We address several immersive VR challenges, such as, embodiment, tracking, multimodal HCI, 3D reconstruction, object class classification and immersive visualization of industrial designs, such as buildings.



### Augmented Reality

Our research focus in several problems found in AR, such as tracking (texture tracking, full 3D tracking), 3D object reconstruction, object category recognition as well as AR applications for AEC (Architecture, Engineering and Construction).



### Participate Digital Fabrication

The VitruviusFabLab-IUL (VFABLAB) is one equipped digital fabrication laboratory that gives you the opportunity to develop your ideas and products.



### Human-Computer Interaction

Natural and multimodal interfaces: speech, silent speech, dialog systems, touch, gesture, sensing of human perception.



### Computing in Architecture, Engineering and Construction

Shape studies, design methods and models, digital fabrication.



### Ambient Assisted Living

Ambient intelligent technologies in supporting and training people with specific requirements.

# THE OLA TEAM



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## I.I PROJECT OLA OBJECTIVES

This project aims to provide an answer to societal challenges by providing an innovative Organisational Life Assistant (OLA), a virtual presence that supports instrumental activities relating to **daily living needs of older adults** allowing them to be more independent, self-assured and to have a healthier, safer and organised life, while facilitates caregivers by supporting them on offering high-quality assistance.

- Well-being advisor
- Connected care organizer
- Safety advisor
- Every day and instrumental daily living activities memory support
- ***Environment analysis***
- Multimodal interaction for elderly

## I.2 MOTIVATIONS AND THE MAIN CHALLENGE

### Motivations

- Aging population in Europe and Japan
- Migration from rural to urban areas
- More seniors are living alone[1],[2],[3]



Problem: High-demand for formal care systems

### The main challenge

- Low level of expertise seniors have in ICT solutions



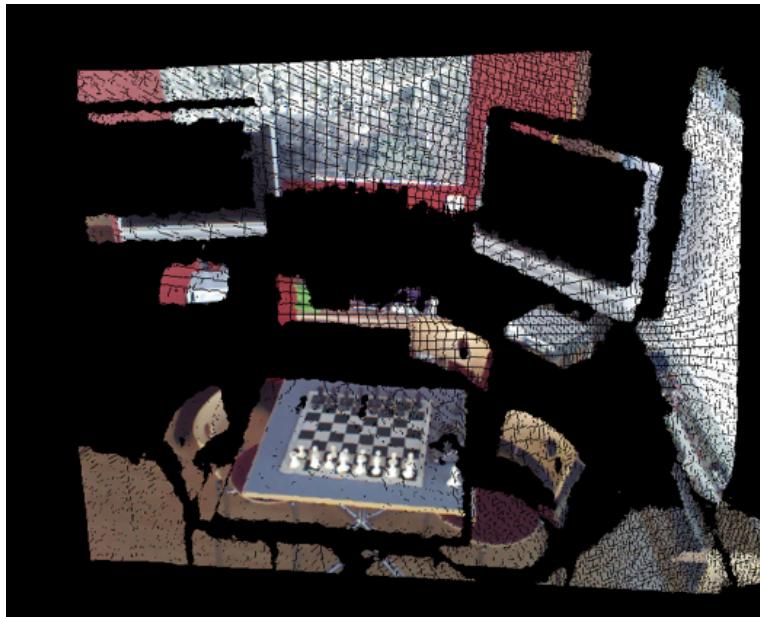
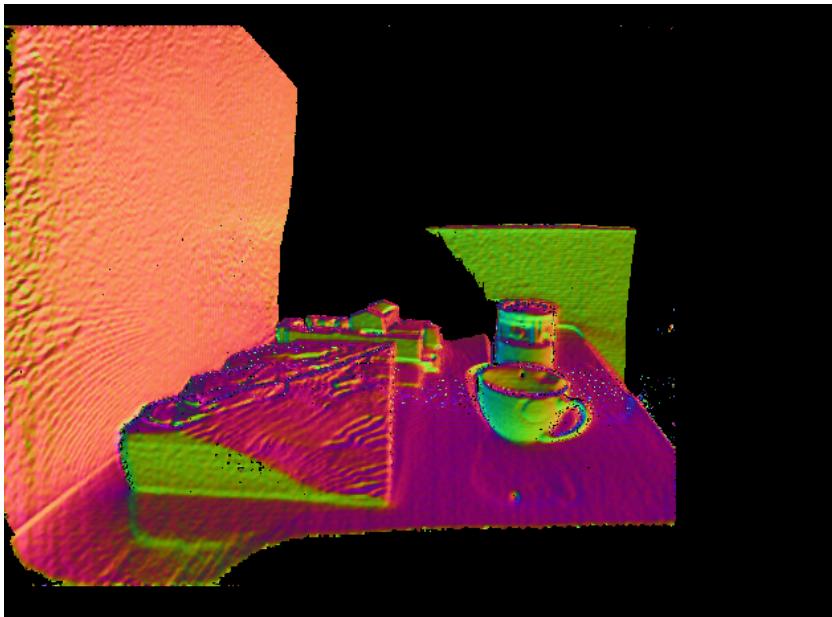
Multimodal HCI

## 2.1. PIPELINE

- Technologies
  - 3D space and object reconstruction
  - Object classification
  - Architectural space analysis engine
  - Augmented reality
- a) Perform 3D reconstruction with RGB-D sensing (demo)
- b) Segment and classify objects such as furniture, cables, carpets, etc (video)
- c) Run an analysis based on architectural rules and standards
- d) Display notifications and suggestions

## 2.1. PIPELINE

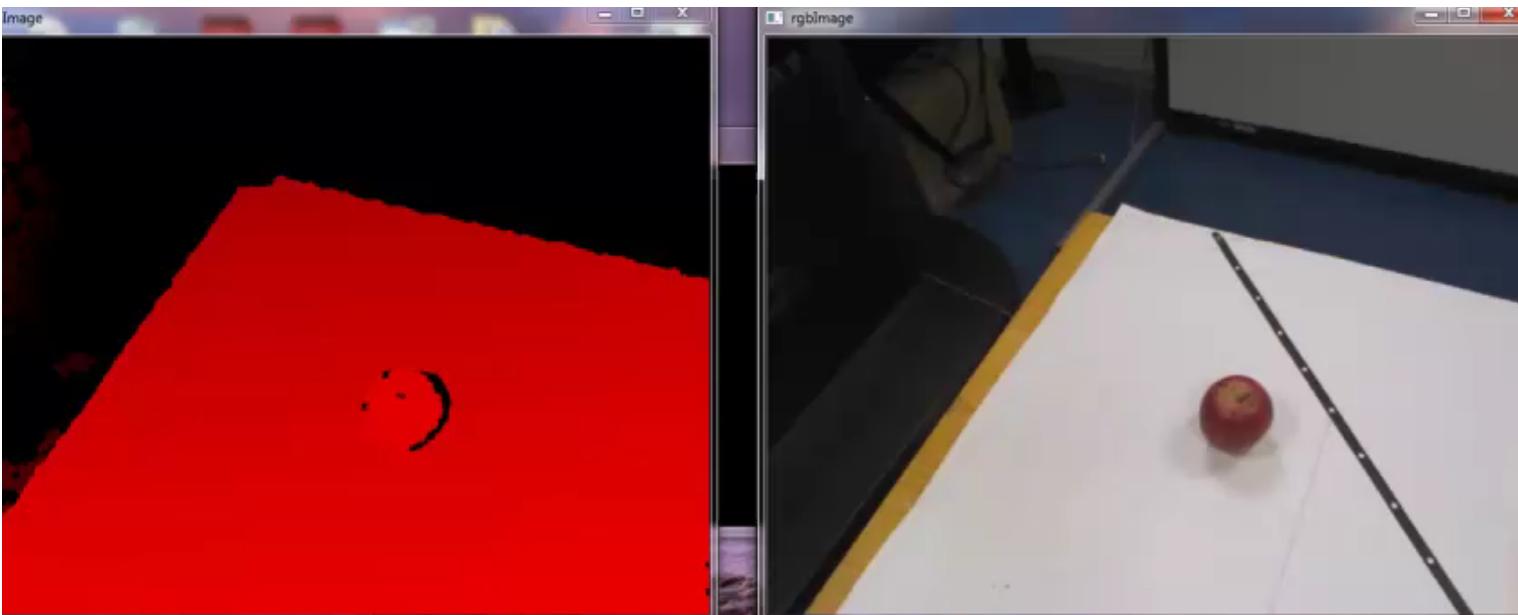
- 3D reconstruction with RGB-D sensing[1]



[1] Gaspar, F. "3D Tracking and Scene Reconstruction". <http://istar.iscte-iul.pt/index.php/ProjectsAR#3dtracking>

## 2.1. PIPELINE

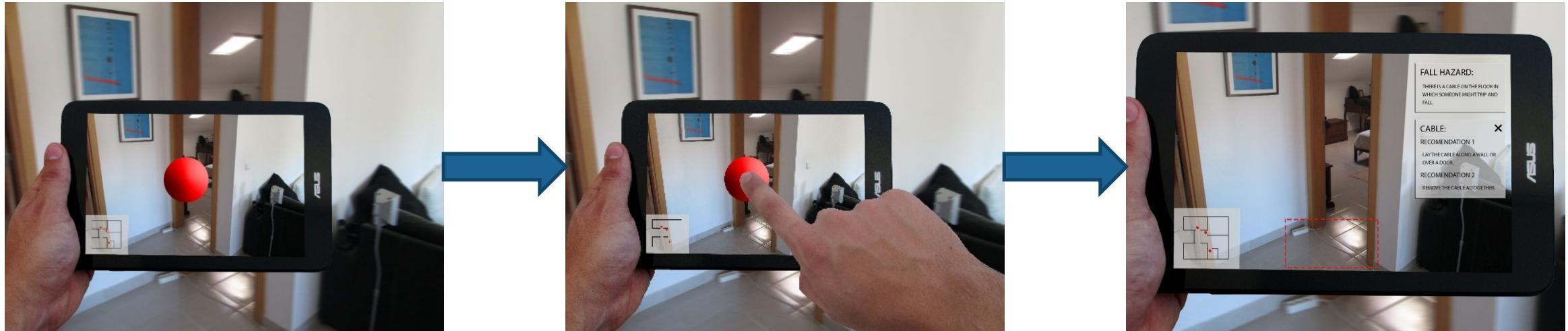
- 3D object segmentation and classification [2]



[2] Proen  a, P.; Gaspar, F.; Dias, M.S. "Good Appearance and Shape Descriptors for Object Category Recognition". In International Symposium of Visual Computing, 2013.

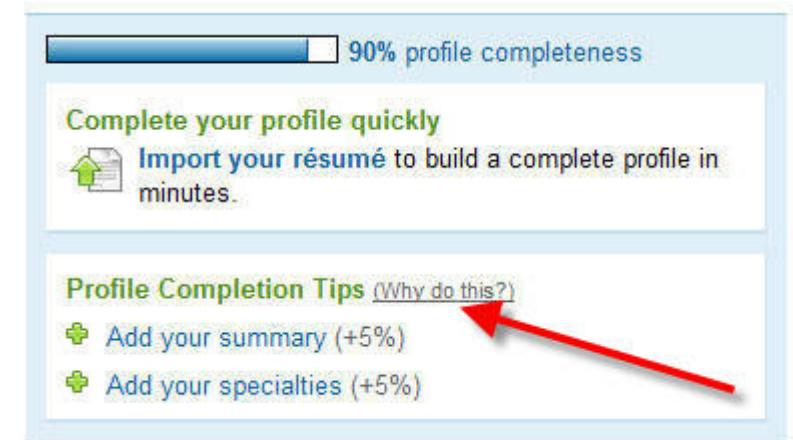
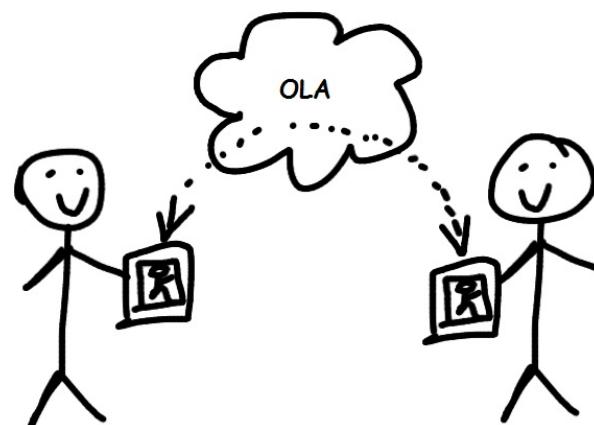
## 2.1. PIPELINE

- Display notifications and suggestions



## 2.2. GAMIFICATION

- This procedure is a bore!
- Very technical and not motivating
- So... What about some **social sharing** of hazard situations and scanning completeness percentage to both raise awareness and **define goals** to motivate the user?



## ORGANISATIONAL LIFE ASSISTANT

Thank you for your attention!

Any questions?