V4Design

Visual and textual content re-purposing FOR(4) architecture, Design and virtual reality games

Motivation

Vast troves of visual and textual data, which are of great interest to architects and video game designers, such as paintings, archival footage, documentaries, movies, reviews or catalogues, and artwork, are currently difficult to be reused and repurposed for game design and architecture.
Works of art can serve as sources of inspiration and assist the design process towards innovative designs, new concepts, or period-focused structures, among others.

V4Design Goal

V4Design's goal is to reuse existing heterogeneous multimedia content and repurpose it by developing novel approaches for 3D reconstruction and modelling, buildings and objects localization, aesthetics and style extraction, generation of 3D objects enhanced with semantics and explanatory text descriptions so as to inspire and support the design, architecture, as well as 3D and VR game industries.

Scientific Objectives

-Visual analysis and 3D reconstruction
-Content extraction from textual and visual data
-Semantic knowledge representation and reasoning
-Text generation from semantic representations
-Combining geometric, semantic and textual information in dynamic 3D objects

Impact

-V4Design will achieve the following impacts:
-Re-use and re-purpose the vast troves of existing digital content.
-Improve the inspiration and design process.
-Assist architects, designers and video game creators to have a greater impact with their work.

Project website: http://www.v4design.eu/

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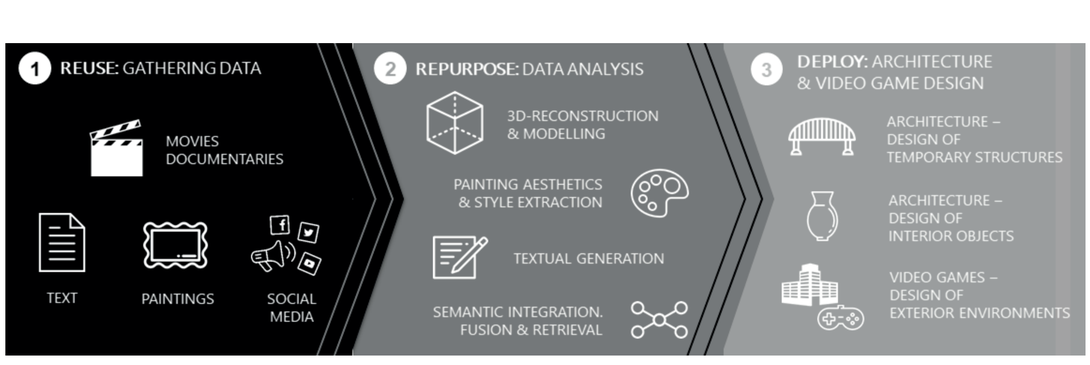

Use Case 1:

Architectural design, related to existing or historical buildings and their environments

Users: **Architects, designers and artists**

Scenario 1:
Support the design process of pavilions, land art, scenography (Landscape)
3D models of buildings, debris, the surrounding landscape (e.g. from ancient times up until the 19th century) will be extracted to support the design process of large objects (pavilions, land art, interior architecture etc.).

Scenario 2:
Architectural design, related to existing or historical buildings and their environments (Building)
3D models, images and maps of the immediate vicinity and reference models of similar size and style, will be used to study various design options.

Use Case 2:

Architectural design, related to artworks, historic or stylistic elements

Users: **Architects, interior architects and product designers**

Scenario:
Architectural design, related to artworks, historic or stylistic elements (Object, Interiors)
3D-models inspired by artworks of a specific style, historic spatial elements and arrangements will be easily accessed for the design, modelling and actual fabrication of novel collections of small scale industrial objects (e.g. furniture), with reference to these styles.

Use Case 3:

Design of virtual environments, related to TV series and VR video games

Users: **Visual content producers (film, TV industries)**

Scenario:
Creation of a VR video game based on the scenes of a telenovela

3D-models of interior elements and scenes will be extracted from existing video contents to build interactive media and VR games with the same assets, scenes and characters.

Use Case 4:

Design of virtual environments, related to actual news for VR (re-) living the date

Users: **Worldwide users that want to live or re-live news events in a VR environment**

Scenario:
Creation of a VR application based on historic events

Selected parts of past and more recent news coverage which will be transformed to 3D and VR environment that will allow users to have a more realistic information experience.

Partners

Information Technologies Institute · KU LEUVEN · Universitat Pompeu Fabra Barcelona · Aristotle University of Thessaloniki · McNeel · Herzog & de Meuron · Solaris · artfilms · Deutsche Welle · europeana · NURO GAMES

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