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Computer Vision and Multimedia Laboratory

Current Activities – A.Y. 2023/24

Department of Electrical, Computer and Biomedical Engineering
University of Pavia

Introduction

- Active since the early 70s, the first research activities of the group focused on *image enhancement* and *restoration*
- The research topics were later extended to include *parallel architectures for vision*, advanced techniques for *image and video processing*, as well as the more recent innovations in *machine and deep learning*
- Currently, the main research areas of the laboratory include:
  - *Computer Vision*
  - *Computer Graphics*
  - *Human-Computer Interaction* (HCI)
  - *Eye Tracking*

Staff members and courses

STAFF

- **Professor emeritus:** Virginio Cantoni
- **Full professor:** Marco Porta
- **Associate professor:** Luca Lombardi (director)
- **Assistant professors:** Piercarlo Dondi, Mauro Mosconi, Mirto Musci
- **Adjunct professors:** Roberto Marmo, Marco Piastra
- **PhD students:** Hoàng Nam Lê, Awais Khan Nawabi
- **Technician:** Alessandra Setti

COURSES

Bachelor's Degree

- Algorithms and Data Structures
- Digital Media
- Informatica
- **Sistemi Operativi**
- Web Design and Technologies

Master's degree (ciclo unico)

- Sistemi di Elaborazione delle Informazioni

Master's Degree

- **Artificial Intelligence**
- **Computer Vision**
- **Deep Learning**
- **Human-Computer Interaction**
- **Parallel Programming**
- Persuasive Design
- Tecnologie Digitali per la Comunicazione
- **Web and Multimedia Technologies**

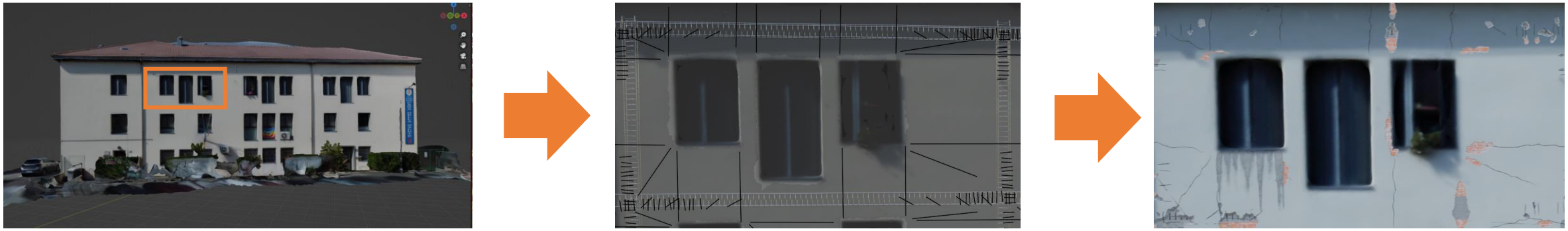
Computer Vision and Graphics: Digital Humanities Applications

3D Modeling

Fresco reconstruction

Computer Vision and Graphics: Structural Damage Detection

Adding artificial damage on 3D models of real buildings and bridges obtained from photogrammetry



Rendering of semi-synthetic images as data augmentation for training a DCNN

DCNN-based damage detection on real videos acquired post-earthquake

In collaboration with

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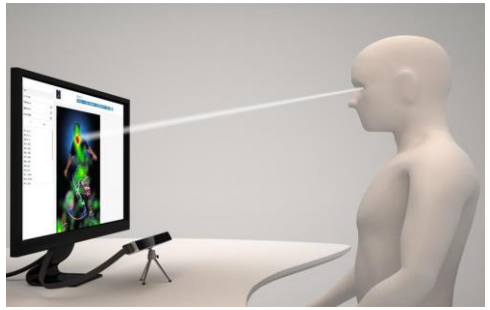
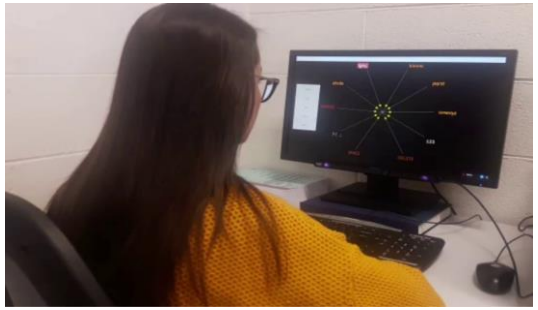
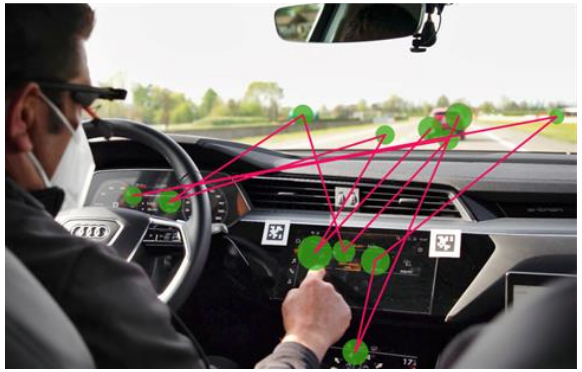
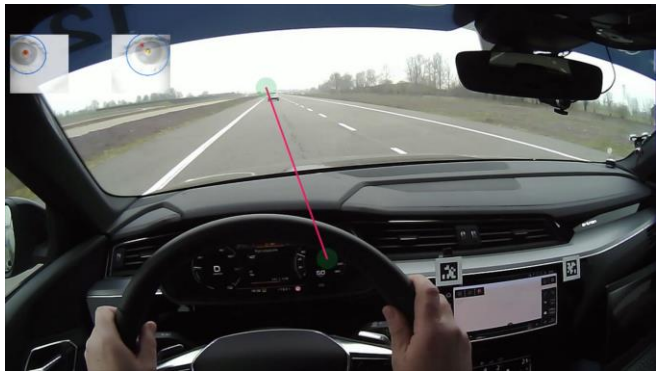
Eye Tracking and HCI

Gaze Input

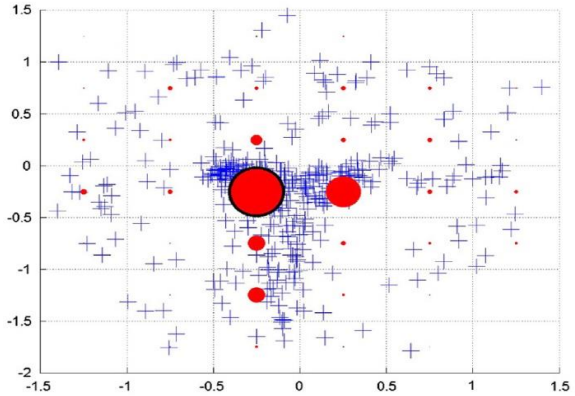
Using eye tracking as an assistive technology or as an additional input channel (e.g., to write, surf the web, play music, etc.)

User Behavior Analysis

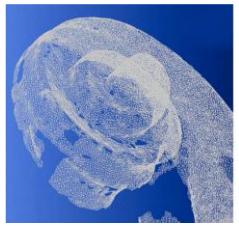
Analyzing and understanding the user's behavior and cognitive state while interacting with different kinds of visual stimuli

Soft Biometrics



Identifying or verifying the identity of people from the way they look at specific stimuli (e.g., faces, shapes)

Collaborations



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