

Computer Vision & Multimedia Lab



Eye Tracking

Explicit and Implicit Gaze-Based Communication

Gaze Input

I'm writing with my





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Discrete Cursor	Contents Featured content Current events Random article Donate to Witipedia Witipedia store Interaction	Eye tracking a the process of measuring other the poort of gaze lettere one is looking) or the notion of an eye relative to the head. An eye tracker's a down for measuring eye positions and eye movement. Eye trackers are used in research on the visual system, in psychology and psychology a					
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Soft Biometrics

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

E-Learning

Understanding learners' behavior and detecting possible comprehension problems

Automotive

Studying the driver's performance through cheap eye tracking solutions

Study of Gaze Behavior

Analysis of the user's gaze behavior while inspecting different kinds of visual stimuli

Using eye tracking as an assistive technology or as an additional input channel (besides keyboard, mouse, etc.) to write, surf the Web, play music, etc.











Digital Humanities



Image processing







Digital anastylosis for frescoes reconstruction



Stylistic analysis and comparison with human behavior



Luthiers' global heatmap







Gaze-based interaction









Deep reinforcement learning for collaborative robotics

Virtualization of a real-world robot



Deep Learning

Few Shot Learning Segmentation of Histopathological Images

The network is trained on 29 annotated Whole Slide Images (WSIs) acquired in three medical centers and it learns to properly predict lesions on WSIs of a fourth medical center.



Fall detection with recurrent neural networks

Accidental falls: an enormous human cost, especially for elderly people. Need for automatic fall detection techniques for timely warnings.

Use of "smart" wearable devices.



Collection of datasets with simulated falls by volunteers. Seven carry positions, 17 different activities, 40 volunteers, over 5000 tracks. Manual annotations on videos, basic for training.



Heatmap highlighting with green and red shades on the top of the original WSI the regions predicted as lesions by the network.



Implementation challenge: limited computing and memory resources; battery life for continuous use 24x7.

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arm





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