The 5th EyesWeb Week

Programme

The morning sessions are intended to be a step-by-step tutorial for EyesWeb users. They also include references to theoretical issues and perspectives for on-going and future research in the area of multimodal interactive systems. The afternoon sessions provide hands-on and concrete insights on specific aspects of the EyesWeb platform and related research and applications.

Monday, 6 June	
09:00 – 12:30	▪ **Welcome:** o Introduction to the Casa Paganini - InfoMus research centre. o Brief introduction of each participant. ▪ **Introduction to multimodal interactive systems:** o Definitions, motivations, perspectives. ▪ **A multi-layered framework for multimodal systems.** ▪ **Introducing EyesWeb:** o Motivations, requirements, evolution. o EyesWeb XMI: components and GUI. ▪ **Development of simple patches** o Simple video and audio input, processing, and output.
14:00 – 18:00	▪ **Research and development projects at Casa Paganini - InfoMus:** o On-going EU Projects (DANCE, WhoLoDancE, TELMI). o Technology transfer to performing arts, cultural heritage, rehabilitation, and education. ▪ **Demos:** o Analysis of movement and sonification. o Rehabilitation and fitness. o Museum installations.

Tuesday, 7 June	
09:00 – 12:30	▪ **Capturing physical movement signals:** o Capture devices: motion capture systems, RGBD devices, video cameras, sensor systems. o Introduction to motion capture systems. o Retrieving data from RGBD devices: Kinect. o Retrieving data from video cameras: background subtraction and motion tracking.
14:00 – 18:00	▪ **The EyesWeb recording platform:** [*with the partial support of the EU-ICT Project TELMI*] o The Qualisys motion capture system. o Configuring and using the EyesWeb recording platform. o Recording of a motion capture session with a violin player. ▪ **Creating step-by-step a video analysis patch for extraction of movement features (part 1):** o Putting together some video analysis techniques to compute and visualize movement features in real-time.

Wednesday, 8 June	
09:00 – 12:30	▪ **Extracting low-level movement features:** o Introduction to low-level features. o Features from 3D Kinect trajectories. o Features from 2D video analysis.
14:00 – 18:00	▪ **Analysis of motion capture data** [*with the partial support of the EU-ICT Project WhoLoDancE*] o Automatic Identification of Markers (AIM) o Analysis of motion capture trajectories ▪ **Creating step-by-step a video analysis patch for extraction of movement features (part 2):** Putting together some video analysis techniques to compute and visualise movement features in real-time.

Thursday, 9 June	
09:00 – 12:30	• **Extracting mid-level movement features:** o Motion and gesture segmentation: problem and approaches. o Extracting mid-level features from single motion segments and on sliding windows. o Vocabularies of movement qualities; an example: introduction to R. Laban's Theory of Effort. o Analysis in the General Space. • **Analysing multiple users:** o Introduction to analysis of social interaction.
14:00 – 18:00	▪ **Analysis of movement from sensors and smartphones:** o Using the built-in sensors of smartphones and wearable accelerometers to develop interactive EyesWeb applications. ▪ **Interactive sonification of dance movements:** [*with the partial support of the EU-ICT Project DANCE*] o Providing a sonic representation of movement qualities.

Friday, 10 June	
09:00 – 12:30	• **Connecting EyesWeb with the outer world:** o Connecting multiple EyesWeb patches on multiple machines. o Connecting with other software platforms. • **Developing interfaces to EyesWeb patches:** o Using the EyesWeb Mobile tool for developing graphical user interfaces for EyesWeb patches. • **Questions and open discussion.**
On demand: *parallel session on EyesWeb SDK and programming (for participants skilled in C++).*	

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