

# Demonstration Showcase

In the demonstration showcase a prototype of a measuring device or technique, beta version of new software or recently launched product can be shown. The demonstrations take place either next to a related poster or in one of the seminar rooms adjacent to the poster area in the lobby. The demonstrations will be shown between 13:00 and 14:00 on Wednesday 27<sup>th</sup> August and Thursday 28<sup>th</sup> August.

## **D1 A novel method of simultaneous behavioral and electrophysiological recording in freely moving awake rats and its potential applications**

**Date:** Wednesday, August 27

**Time:** 13:00 – 14:00

**Location:** Athens

**Presenter:** Anikó Straub (Experimetria, Budapest, Hungary)

## **D2 iBehave – application of supervised machine learning to behaviour analysis**

**Date:** Thursday, August 28

**Time:** 13:00 – 14:00

**Location:** Poster C12

**Presenter:** James Heward

The iBehave project is examining the application of supervised machine learning methods in the domain of behavioural genetics and drug discovery. The goal is as follows. Given tracked data for an experiment, can we exploit the expertise of a human observer to train a computer algorithm to classify behaviour?

The software employs supervised machine learning methods to classify the behaviour of multiple complex objects in video footage. It extracts coordinates and parameter values which uniquely distinguish the set of given exemplars. Thereafter, each behaviour that the system has been trained on can be automatically detected with an expression of confidence. The method can be applied to footage containing both single and multiple articulated objects.

For more information see the Abstract for poster C12.

## **D3 IT Applications and Interfaces of Facial Emotion Expression**

**Date:** Wednesday, August 27

**Time:** 13:00 – 14:00

**Location:** Rome

**Presenter:** Érico Castro (Facial Emotion Expression Lab, College of Health Sciences, University Fernando Pessoa, Porto, Portugal)

The Facial Emotion Expression Lab is currently developing the Psy7Faces, an innovative software application for recognizing and detecting facial emotion expression. This application can be used in various contexts, including justice, health, security (biometrics) and education, and will contribute to “people’s wellbeing”. The modules of Psy7Faces are; i- Emotions (a platform for the identification and recognition of the 7 (seven) basic emotions (joy, sadness, anger, fear, surprise, aversion and contempt), i- Smiles (for the identification and recognition of the three types of smiles (closed smile, upper smile and broad smile) as opposed to the neutral face (non smile) and i- Muscles (for the identification and recognition of the all muscles involved in facial expression).

## **D4 New Wireless Portable Physiology Monitor for Psychophysiology Research**

**Date:** Wednesday, August 27

**Time:** 13:00 – 14:00

**Location:** Poster B9

**Presenter:** Thijs Schrama (Faculty of Social Sciences, Leiden University, The Netherlands)

The system contains an online graphical display and digital transmission of the following signals: ECG, Galvanic Skin Response (GSR), Breathing rate, and chest cavity impedance cardiogram (ICG). This means that researchers can check the signal integrity on the PDA screen and store the entire true waveforms of the signals on both the PDA and the base station for later offline analysis. To facilitate offline analysis, researchers can synchronize experiments with data because the system allows them to place and store markers with the data.

For more information, please see the abstract for Poster B9

## **D5 The Observer XT 8.0**

**Date:** Wednesday, August 27

**Time:** 13:00 – 14:00

**Location:** Brussels

**Presenter:** Albert Willemsen (Noldus Information Technology, Wageningen, The Netherlands)

Noldus Information Technology has recently released a new version of their leading software for observational research: The Observer XT 8.0. In this version the design has been dramatically improved. The software guides you through the entire process of setting up your project and recording and analyzing your data. In short, The Observer XT 8.0 enables you to work more efficiently and it helps you to avoid errors and methodological pitfalls.

New in 8.0

- faster data scoring and editing speed up your data gathering
- handy task dialogs and video tutorials guide you through the package
- improved screen layouts make your work easier and more efficient
- built-in DivX video compression – no additional hardware encoder needed!
- easy synchronization of cameras and other lab equipment

### **D6 Catwalk 8.0**

**Date:** Thursday, August 28

**Time:** 13:00 – 14:00

**Location:** Athens

**Presenter:** Ruud de Keijzer (Noldus Information Technology, Wageningen, The Netherlands)

CatWalk is a video-based gait analysis system to assess locomotor deficits and pain-induced gait adaptations in voluntarily walking rats or mice. It consists of a glass plate on which a mouse or rat traverses from one side of the glass plate to the other. Light enters the long edge of the glass plate which is completely internally reflected. Only at those areas where the animal makes contact with the glass plate (typically the animal's paws) light is able to escape. A video camera positioned underneath the glass plate captures the illuminated footprints and sends these to a computer running the CatWalk software. The CatWalk software records the *position, timing, pressure, and dimensions* of each footfall, and facilitates the classification of footfalls. On basis of these measurements, graphical output is generated and numerous endpoints are calculated. In this demonstration a **new prototype of the CatWalk system will be demonstrated that shows how the use of different light sources enhances the classification of footprints and the standardization of data.**

### **D7 FaceReader 2.0**

**Date:** Thursday, August 28

**Time:** 13:00 – 14:00

**Location:** Berlin

**Presenter:** Hans van Kuilenberg (VicarVision, Amsterdam, The Netherlands)

At Measuring Behaviour 2008 we will showcase some of our latest developments in the field of automated facial analysis. In 2007 VicarVision and Noldus Information Technology launched FaceReader™, a system for fully automatic facial expression analysis. Our demonstration will consist of a preview of the upcoming FaceReader release with exciting new features and improved performance and usability. In addition to this, some other recently developed technologies that can be used for behavioural research will be interactively demonstrated.

### **D8 EthoVision XT release 3**

**Date:** Thursday, August 28

**Time:** 13:00 – 14:00

**Location:** Brussels

**Presenter:** Wil van Dommelen (Noldus Information Technology, Wageningen, The Netherlands)

EthoVision XT is the state-of-the-art video tracking system for automatically recording animal activity and movement. Besides tracking of the animal's body center, EthoVision XT offers tracking of the nose point and tail base of rats and mice. In this demonstration, the EthoVision Project Leader will demonstrate a prototype of the upcoming version of EthoVision. This will include major improvements including tracking of multiple animals within the same arena and powerful control of external equipment.

### **D9 Measuring facial expressions of moving people as part of the ICE project**

**Date & Location:** Wednesday, August 27<sup>th</sup> and Thursday, August 28 (poster area) and Friday, August 29 (Athens)

**Time:** 13:00 – 14:00

**Presenter:** Leanne Loijens (Project Leader ICE, Noldus Information Technology, Wageningen, The Netherlands)

The Inside Consumer Experience ([www.ice-project.org](http://www.ice-project.org)) project group is an international consortium of four partners, which develops novel instruments and mobile services for the objective measurement of food selection and consumption in real-life contexts. The project will take the concept of situational food-related research a major step further by designing a mobile sensory observation laboratory with a suite of corresponding rapid research services for the food and nutrition industry. During Measuring Behavior a pilot will be carried out to study moving people whilst they are consuming drinks. Conference delegates are invited to participate in this test.

### **D10 Eagle Vision SPI Scout, 3D People Counting**

**Date:** Thursday, August 28

**Time:** 13:00 – 14:00

**Location:** Rome

**Presenter:** Arend van de Stadt (Eagle Vision, Naarden, The Netherlands)

From various perspectives, it is interesting to count and track people. It can be interesting for a retailer to measure the customers coming in and compare that with the total stream of people walking past, so that the effectiveness of advertising can be gauged. From another perspective it is interesting for an airport to compare its passenger capacity with the actual number of passengers dealt with per minute, so that the passenger flow can be optimized. If this can be done automatically then the information can be gathered over 24 hours.

Eagle Vision has developed a new system for tracking and counting people that uses a stereoscopic camera. In the same way that a person sees in 3D by using both eyes, so can a 3D camera. This makes it less sensitive to disturbing elements in the background such as shadows (double counts) or sudden changes in light (missing people). You can also use 3D to filter objects and differentiate between high objects (people) and lower objects (suitcases) which means that the system can concentrate on the people better. In this way the system is able to measure with a greater accuracy than with a single camera.

### **D11 Eagle Vision Nemo Game**

**Date:** Thursday, August 28

**Time:** 13:00 – 14:00

**Location:** Rome

**Presenter:** Arend van de Stadt (Eagle Vision, Naarden, The Netherlands)

The Eagle Vision NEMO Game demonstrates a system for tracking multiple persons with multiple cameras. The application presented is an interactive game for children who draw shapes on screen by walking in an area watched by the cameras. Each player is assigned a target shape to draw (for example a letter) and subsequently enters a playground area where he or she is tracked by our monitoring system. The system online estimates positions of the players and draws their estimated trajectories. By comparing the estimated trajectories with target shapes, our game application computes players' scores.

In the version presented, our tracking system uses two cameras with partially overlapping fields of view. The combination of multiple cameras makes our system particularly suitable for monitoring people in low-ceiling environments, like certain waiting rooms or public areas (post-offices spaces or some airport gates). Low-ceiling conditions require systems with multiple cameras, since usually a single camera cannot provide sufficient field of view.

We demonstrate a highly-parallel tracking application that runs on a single (quad-core) PC and neatly solves several typical problems associated with multi-camera applications: (a) spatial camera-to-camera synchronization, (b) handling trajectories in the overlap area and (c) providing sufficient processing power for simultaneous processing of multiple video streams.

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