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**PAIN FACE DAY 2017**  
**Challenges of**  
**Automatic Pain Recognition**

30TH JANUARY 2017, 9 AM - 6 PM  
ERLANGEN, GERMANY



## PROGRAM

Given the lack of reliable self-report in patients with moderate-severe stages of dementia, pain assessment must rely on the observation of pain behaviors; such as facial expressions. Development in computer vision techniques and machine learning open the possibilities to develop automatic pain detection systems.

Such systems would allow a constant monitoring of pain behaviors and thereby allow for a timely adjustment of pain management in this fragile patient group, who is often undertreated for pain.

For the last years, researchers from the University of Bamberg (Germany), the Fraunhofer Institute for Integrated Circuits IIS Erlangen (Germany) and the University Medical Center Groningen (Netherlands) have formed a collaborative interdisciplinary group that aims at developing such a video-based pain detection system that can validly detect facial expressions of pain in patients with dementia (PainFaceReader).

### With the Pain Face Day 2017 we want to bring together:

- researchers working in related fields in order to exchange knowledge and to further the development of automatic pain detection devices,
- clinical end-users to highlight possible clinical applications as well as implementation obstacles.

### 9:00 - 9:30 Welcome and Greetings

Prof. Dr.-Ing. Albert Heuberger, Director Fraunhofer IIS  
Prof. Dr. Stefan Lautenbacher, University Bamberg

## PART I: AI SOLUTIONS FOR AUTOMATIC PAIN ASSESSMENT

Moderator: Dr. Jens-Uwe Garbas

### 9:30 - 10:00 SenseEmotion: Multisensory pain and emotion recognition (*working title*)

Prof. Heiko Neumann, University of Ulm

### 10:00 - 10:30 Pain and movement (*working title*)

Dr. Nadia Berthouze, University College London

### 10:30 - 11:00 Coffee break

### 11:00 - 11:30 Automatic Pain Assessment with Facial Activity Descriptors (*working title*)

Dipl.-Ing. Philipp Werrner, University of Magdeburg / Dr. Steffen Walter, Ulm University Medical Center

### 11:30 - 12:00 Video-based automated pain detection exploiting compositional and temporal characteristics of action units (PainFaceReader)

Prof. Dr. Ute Schmid, University Bamberg / Dr. Jens-Uwe Garbas, Fraunhofer IIS

### 12:00- 12:30 Summary Discussion

### 12:30 - 13:30 Lunch break + Postersession

## PART II: TECHNOLOGY TRANSFER: FROM LAB TO BEDSIDE

Moderator: Prof. Dr. Stefan Lautenbacher

### 13:30 - 14:00 Alte Probleme, neue Lösungen für die Schmerzdiagnostik

Prof. Harald Traue, Ulm University Medical Center

### 14:00 - 14:15 Schwierigkeiten und Herausforderungen in der klinischen Anwendung automatisierter Schmerzerkennung

Dr. Miriam Kunz, University Medical Center Groningen

### 14:15 - 15:45 Panel discussion: Klinischer Bedarf und Chancen der automatischen Schmerzdiagnostik

Diskussionspanel: Dr. Reinhard Sittl, Prof. Erika Sirsch, Prof. Philip Lang, Andreas Schneider

### 16:00 - 18:00 Get together