Research Offer
Networked Media and Search Systems

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German Research Center for

Artificial Intelligence (DFKI) GmbH

DFKI Multimedia Analysis & Data Mining

▶ DFKI

- Founded in 1988
- Applied research
  - Public Funding
  - Industry Projects
- 400 employees
- 400 students
- 160 running projects
- 30 Mio € revenue 2009
- 20 running EU projects

▶ The MADM group

- Head: Dr. Armin Stahl
- Part of Knowledge Management Lab (Prof. Andreas Dengel)
- 20 researchers, software engineers and student assistants

▶ Industrial partners and customers

Multimedia Analysis & Data Mining
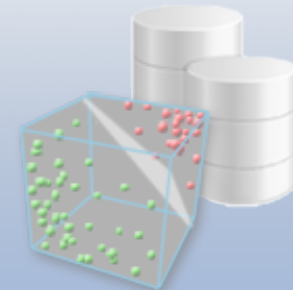
Image and Video Analysis

- **Image and Video Retrieval & Browsing**
- **Visual Classification & Concept Detection**
- **Text in Image Recognition**

Document Image Analysis

- **Image-Based Document Verification**
- **Layout Analysis**
- **Information Extraction**
- **Optical Character Recognition (OCR)**

Data Mining

- **Meta Learning**
- **Automatic System Construction**
- **Network Security**
- **Financial & Business Applications**

Image Processing

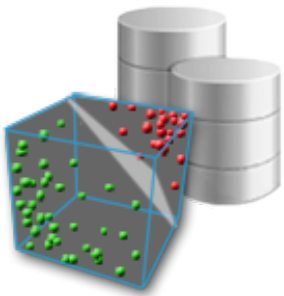### Statistical Pattern Recognition & Machine Learning

▶ **TAVIAn**

  ▪ Google Research Award**:** concept detection for improving targeting of advertisements on YouTube

▶ **OCRopus™**

  ▪ Google-funded project: open source Optical Character Recognition for Google Book Search

▶ **PaREn Automatic System Construction Wizard**

  ▪ First third-party contribution for the world-leading Data Mining software RapidMiner

▶ **IPeT (2005-2008)**
  ▪ image based personal computing tools

▶ **SIRMA (2008-2009)**
  ▪ scalable image retrieval for mobile applications

▶ **MOONVID (2008-2011)**
  ▪ visual learning from web data

▶ **FIVES (2009-2011)**
  ▪ Forensic support in child porn investigation

▶ **INBEKI (2009-2012)**
  ▪ Interactive analysis of image databases for fighting child porn

▶ **TAVIAn (2011)**
  ▪ Ad targeting by concept detection

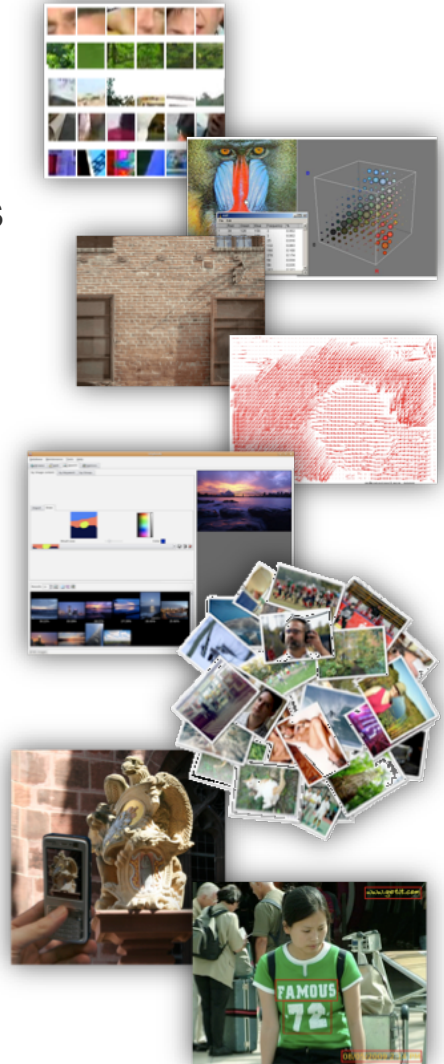▶ **iCoP (2011-2012)**
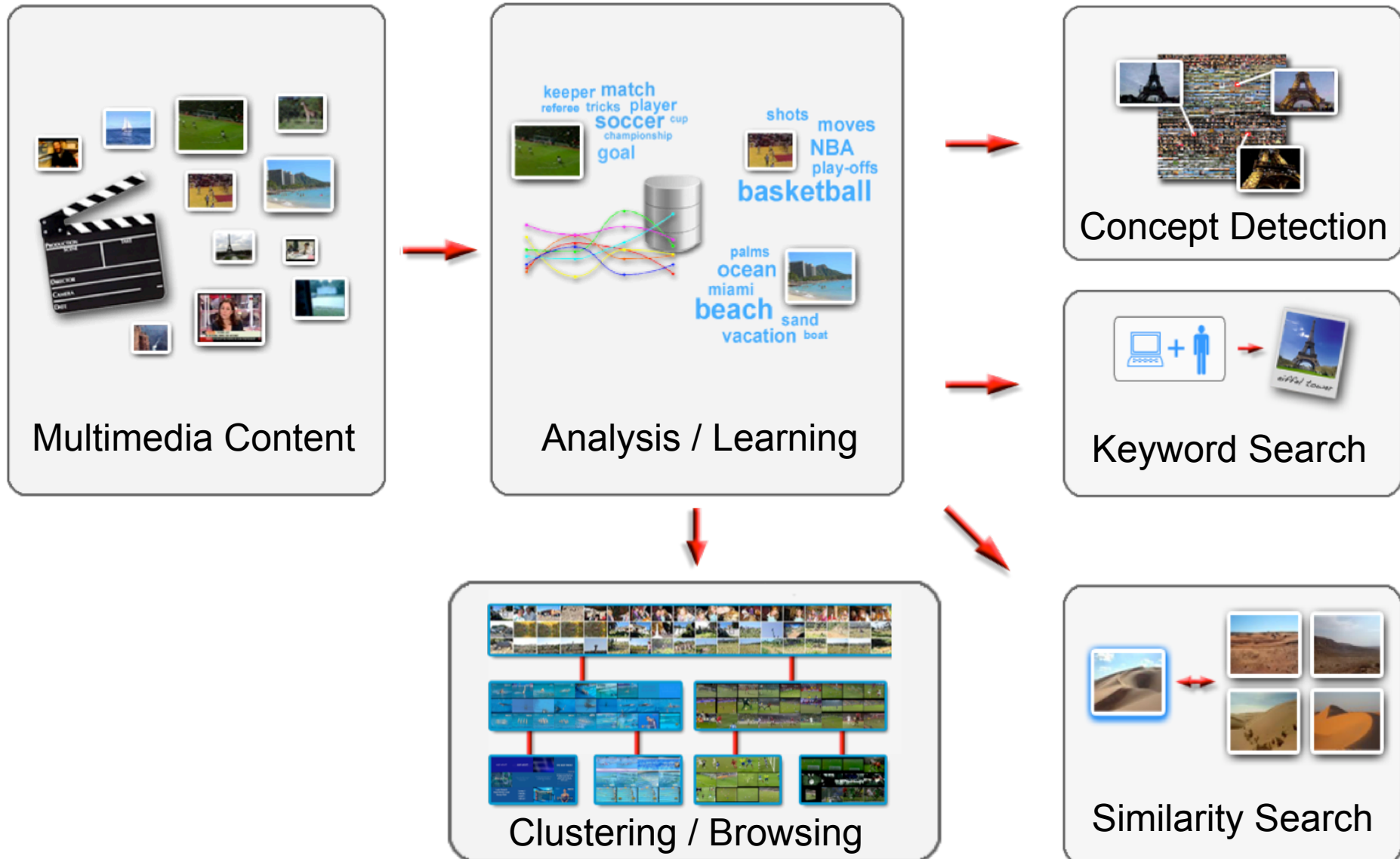 ▪ child pornography in P2P networks

Image and Video Analysis Expertise

Multimedia Content

Analysis / Learning

Concept Detection

Keyword Search

Clustering / Browsing

Similarity Search

Multimedia Analysis & Data Mining

Real-Time Concept Detection

▶ concept detection in real-time (e.g. "soccer game")

▶ recommendation of related news, products etc.

▶ winner of the EuroITV 2010 Grand Challenge: Silver Award

▶ received Google Research Award to continue research on YouTube scale

▶ scalable content-based retrieval

▶ live detection of visual concepts

▶ efficient browsing in multimedia data

▶ combination of audio and visual concepts

▶ interactive search of objects and scenes

▶ user and domain adaptation

▶ text in image recognition

Research Offer for Objective 1.5
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