

# Program at a Glance

## Monday, September 12

- 13:00 - 14:00 Registration
- 14:00 - 14:15 Welcome & Opening Remarks
- 14:15 - 16:00 Oral Session 1: "Visual Sensor Networks"
- 16:00 - 16:30 Coffee Break
- 16:30 - 18:00 Poster Session
- 20:00 - 22:00 Welcome cocktail

## Tuesday, September 13

- 9:30 - 10:30 Keynote: Boyd Fowler - Omnivision
- 10:40 - 11:10 Coffee Break
- 11:10 - 13:00 Oral Session 2: "Smart Cameras"
- 13:00 - 14:30 Lunch Break
- 14:30 - 16:10 Oral Session 3: "Distributed Vision"
- 16:10 - 16:40 Coffee Break
- 16:40 - 17h30 Special Keynote: R. Renaudin - The European cluster eureka Euripides
- 17:30 - 18:45 Demo Session

## Wednesday, September 14

- 9:30 - 10:30 Keynote: G. Martin - Cadence
- 10:30 - 11:00 Coffee Break
- 11:00 - 12:15 Oral Session 4: "Smart Imagers"
- 12:15 - 13:30 PhD Forum
- 13:30 - 14:30 Lunch Break
- 14:30 - 15:45 Special Session: "Neuromorphic Chips and Algorithms"
- 15:45 - 16:30 Coffee Break
- 16:30 - 17:15 Industrial Session: "Low power CMOS Imagers for IoT vision system"
- 17:15 - 17:45 Best Paper Awards
- 19:00 - 23:00 Gala Dinner "Moulin Rouge"

## Thursday, September 15

- 9:30 - 10:30 Keynote: S. Palaric - Nvidia
- 10:30 - 11:00 Coffee Break
- 11:00 - 12:40 Oral Session 5: "Camera-based Smart Environments" (4 papers)
- 13:00 - 14:30 Lunch Break
- 14:30 - 15:45 Oral Session 6: "Emerging Applications" (3 papers)
- 15:45 Wrap-up Remarks

# Session details

## ORAL SESSION 1 - "Visual Sensor Networks"

Monday, September 12, 14:15-16:00

Chairwoman: Yulia SANDAMIRSKAYA – Inst. of Neuroinformatics, Zurich SWITZERLAND

14:15-14:40

### Towards Improving the Detection Performance in Collaborative Visual Sensor Networks

Christos Kyrkou, Stelios Timotheou, Eftychios Christoforou, Theocharis Theocharides, Christos Panayiotou, Marios Polycarpou

14:40-15:05

### Robot tracking in low-power visual sensor networks

Emoke Olti, Thomas Verbeke, Geert Braeckman, Vrije Vasile Dadarlat, Adrian Munteanu

15:05-15:30

### Wireless Camera Nodes on a Cyber-Physical System

Alfredo Gardel, Felipe Espinosa, R. Neito, Jose Luis Lazaro, Ignacio Bravo

15:30-15:55

### Distributed coordination model for smart sensing applications

Luca Maggiani, Lobna Ben Khalifa, Jean-Charles Quinton, Matteo Petracca, François Berry, Paolo Pagano

## ORAL SESSION 2 - " Smart Cameras "

Tuesday, September 13, 11:10-13:00

Chairman: Jorge FERNANDEZ BERNI – Inst. de Microelec. de Sevilla , SPAIN

11:10-11:35

### Architecture for Dynamic Allocation of Computer Vision Tasks

Axel Weissenfeld, Andreas Opitz, Roman Pflugfelder, Gustavo Fernandez

11:35-12:00

### A Holistic Approach for Optimizing DSP Block Utilization of a CNN implementation on FPGA

Kamel Eddine Abdelouahab, Cédric Bourrasset, Maxime Pelcat, François Berry, Jean-Charles Quinton, Jocelyn Serot

12:00-12:25

### Real-time ghost free HDR video stream generation using weight adaptation based method

Mustapha Bouderbane, pierre-jean lapray, Julien Dubois, Barth Heyrman, Dominique Ginjac

12:25-12:50

### Towards a smart camera for monocular SLAM

Abiel Aguilar-González, Miguel Arias-Estrada

POSTER SESSION

Monday, September 12, 16:30-18:00

Chairman: Julien DUBOIS – LE2I / University of Burgundy, Dijon FRANCE

**Very High Level Synthesis for image processing applications**

Yanjing BI, Chao LI, Fan Yang

**Optimized HOG Descriptor for on Road Cars Detection**

Nabila Mansouri, Yousra Ben Jemaa, Eric Watelain

**Evaluation of Collaborative Video Surveillance Platform: Prototype Development of Abandoned Object Detection**

Susumu Saito, Teppei Nakano, Makoto Akabane, Tetsunori Kobayashi

**Person Detection and Re-identification Across Multiple Images and Videos Obtained via Crowd-Sourcing**

Yu Zheng, Jimmy Chen, Senem Velipasalar, Jian Tang

**FPGA based hardware acceleration of a BRIEF correlator module for a monocular SLAM application**

Francois Brenot, Jonathan Piat, Philippe Fillatreau

**Multi-view Feature Fusion for Activity Classification**

Mitra Hekmat, Zahra Mousavi, Hamid Aghajan

**Simulation of Parallel Processing for Distributed Multi-Target Tracking in Smart Camera Networks**

Mehdi Jafarizadeh, Naeeme YadollahPour

**ORAL SESSION 3 - " Distributed Vision "**

Tuesday, September 13, 14:30-16:10

Chairman: Ricardo CARMONA GALAN – Inst.de Microelec. de Sevilla IMSE-CNM, SPAIN

14:30-14:55

**Three-dimensional reconstruction of heavily occluded pedestrians using integral imaging**

Maryam Ghaneizad, Hamid Aghajan, Zahra Kavehvasht

14:55-15:20

**Online Audiovisual Signature Training for Person Re-identification**

François-Xavier Decroix, Julien Pinquier, Isabelle Ferrane, Frederic Lerasle

15:20-15:45

**3D Cameras Benchmark for Human Tracking in Hybrid Distributed Smart Camera Networks**

Andres Burbano, Marius Vasiliu, Samir Bouaziz

15:45-16:10

**A Formal Algebra Implementation for Distributed Image and Video Stream Processing**

Mohamed A. Helala, Ken Q. Pu, Faisal Z. Qureshi

**DEMO SESSION**

Tuesday, September 13, 17:30-18:45

Chairmen: Luca MAGGIANI – Scuola Sant’anna, Pisa ITALY

Stéphane CHEVOBBE – CEA Nano Innov, Bures sur Yvette FRANCE

**Image Sensing Scheme Enabling Fully-Programmable Light Adaptation and Tone Mapping with a Single Exposure**

Jorge Fernandez-Berni, Fernanda Oliveira, Ricardo Carmona-Galan, Angel Rodriguez-Vazquez

**HDR image sensor with linear response and asynchronous detection of saturation**

Juan Antonio Leñero-Bardallo, Ricardo Carmona-Galan, Angel Rodriguez-Vazquez

**Development and Demonstration of a LoRa TDOA-based Localisation System**

Thomas Verbeke, Eموke Olti, Adrian Munteanu

**A Faster R-CNN Multi-Object Detector on a Nvidia Jetson TX1 Embedded System**

Ala Mhalla, Thierry Chateau, Sami Gazzah, Najwa Essoukri Ben Amara

**Tweeting Camera - A New Paradigm of Event-based Smart Sensing Device**

Yuhui Wang, Christian von der Weth, Thomas Winkler, Mohan Kankanhalli

**A Demonstration of Tracking using Dynamic Neural Fields on a Programmable Vision Chip**

Julien Martel, Yulia Sandamirskaya, Piotr Dudek

**GPStudio: a toolchain for FPGA-based Smart Cameras**

Sebastien Caux, Edouard Hendrickzx, Francois Berry, Maxime Pelcat, Jocelyn Serot

**Ant-Cam network**

Lobna Ben Khalifa, Luca Maggiani, Ayoub El Hazzaz, Jean-Charles Quinton, François Berry

**Prototyping a Panoptic Camera by means of High Level Synthesis**

Sylvain Guy, Stephane Mancini

**ORAL SESSION 4 - " Smart Imagers"**

Wednesday, September 14, 11:00-12:15

Chairman: Jérôme CHOSSAT - ST Microelectronics, Grenoble FRANCE

11:00-11:25

**3D-IC: New Perspectives for a Digital Pixel Sensor**

Nicolas Brochard, Jamel Nebhen, Dominique Ginhac

11:25-11:50

**Pixel-wise parameter adaptation for single-exposure extension of the image dynamic range**

Ricardo Carmona-Galan, Juan Antonio Leñero-Bardallo, Jorge Fernandez-Berni, Angel Rodriguez-Vazquez

11:50-12:15

**CAMEL: An Ultra-Low-Power VGA CMOS Imager based on a Time-Based DPS Array**

Thomas Haine, Francois Stas, Gueric de Streef, Cecilia Gimeno, Denis Flanre, David Bol

PhD Forum

Wednesday, September 14 12:15-13:30

Chairmen: Lobna BEN KHELIFA – Institut Pascal, Clermont-Ferrand FRANCE

Carlos M. MATEO - Instituto universitario de Investigación Informática, Murcia SPAIN

**3D-Sensing Distributed Embedded System for the Study of Human Kinetic Behavior**

Andres Burbano

**Tracking multi-object using tracklet and Faster R-CNN**

Yosra Doraj, Sami Gazzah, Frederic Chausse, Najwa Essoukri Ben Amara

**WiseNET - smart camera network interacting with a semantic model**

Roberto Marroquin, Julien Dubois, Christophe Nicolle

**Propagation of Quantification Error Over Convolutional Neural Network layers**

Kamel Eddine Abdelouahab, François Berry, Maxime Pelcat

**Scene-Specific Pedestrian Detector Using Monte Carlo Framework and Faster R-CNN Deep Model**

Ala Mhalla, Thierry Chateau, Sami Gazzah, Najwa Essoukri Ben Amara

**Task Clustering Approach to Optimize the Scheduling on a Partially Dynamically Reconfigurable FPGAs for image processing algorithms**

El Mehdi Abdali, Maxime Pelcat, Francois Berry, Jean-Philippe Diguët, Dominique Heller

**SPECIAL SESSION - "Neuromorphic Chips and Algorithms "**

Wednesday, September 14 14:30-15:45

Chairman: Jean Charles QUINTON - Laboratoire Jean Kuntzmann, Grenoble FRANCE

14:30-14:55

**Attention-based smart-camera for spatial cognition**

Nicolas Cuperlier, Hakim guedjou, Frederic Demelo, Benoit Miramond

14:55-15:20

**Event based visual attention with dynamic neural field on FPGA**

Benoit Chappet de Vangel, Cesar Torres-Huitzil, Bernard Girau

15:20-15:45

**A Neuromorphic Approach for Tracking using Dynamic Neural Fields on a Programmable Vision-chip**

Julien Martel, Yulia Sandamirskaya

**INDUSTRIAL SESSION - "Low power CMOS Imagers for IoT vision system"**

Wednesday, September 14 16:30-17:15

Chairman: Gilles SICARD - CEA-LETI, Grenoble FRANCE

16:30-16:55

**System level approach for low power smart camera with 3D-stack imager process**

Jerome Chossat, ST Microelectronics

16:55-17:20

**Pixel-individually Auto-sampling Image Sensors**

Christoph Posch, Chronocam

**ORAL SESSION 5 - " Camera-based Smart Environments"**  
Thursday, September 15, 11:00-12:40  
Chairman: Maxime PELCAT – IETR, Rennes France

11:00-11:25

**User-centric, embedded vision-based human monitoring: A concept and a healthcare use case**

Tahir Nawaz, Bernhard Rinner, James Ferryman

11:25-11:50

**Towards More Efficient Use of Office Space**

Mohamed Eldib, Francis Deboeverie, Wilfried Philips, Hamid Aghajan

11:50-12:15

**Vision-Based Path Construction and Maintenance for Indoor Guidance of Autonomous Guided Vehicles Based**

Franz-Josef Streit Md Jubaer Hossain, Cindy Roulet, Christophe Bobda

11:15-12:40

**3D Reconstruction with Low-Resolution, High Radial Distortion Stereo Images**

Tiago Dias, Helder Araujo, Pedro Miraldo

**ORAL SESSION 6 - " Emerging Applications "**  
Thursday, September 15, 14:30-15:45  
Chairman: Miguel ARIAS – INAOE, Puebla MEXICO

14:30-14:55

**Design Exploration of a Multi-camera Dome for Sky Monitoring**

Najeem Lawal, Mattias O'Nils, Muhammad Imran

14:55-15:20

**Mobile Food Recognition with an Extreme Deep Tree**

Niki Martinel, Claudio Piciarelli, Gian Luca Foresti, Christian Micheloni

15:20-15:45

**Ant-Cams Network: a cooperative network model for silly cameras**

Lobna Ben Khalifa, Luca Maggiani, Jean Charles Quinton, Francois Berry