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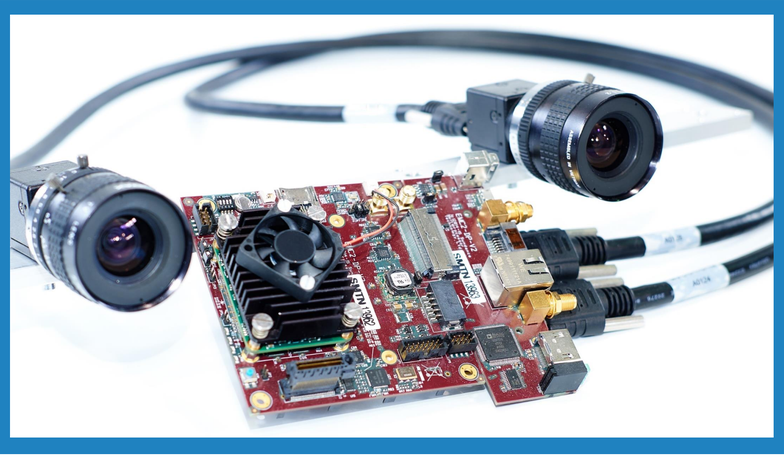
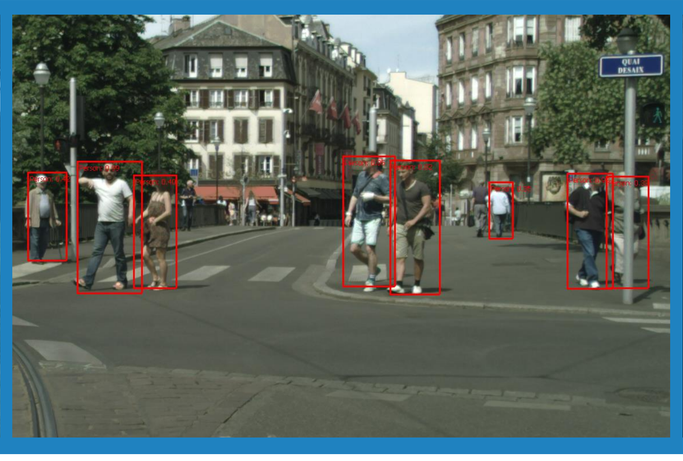




EU Project TULIPP: Towards Ubiquitous Low-power Image Processing Platforms

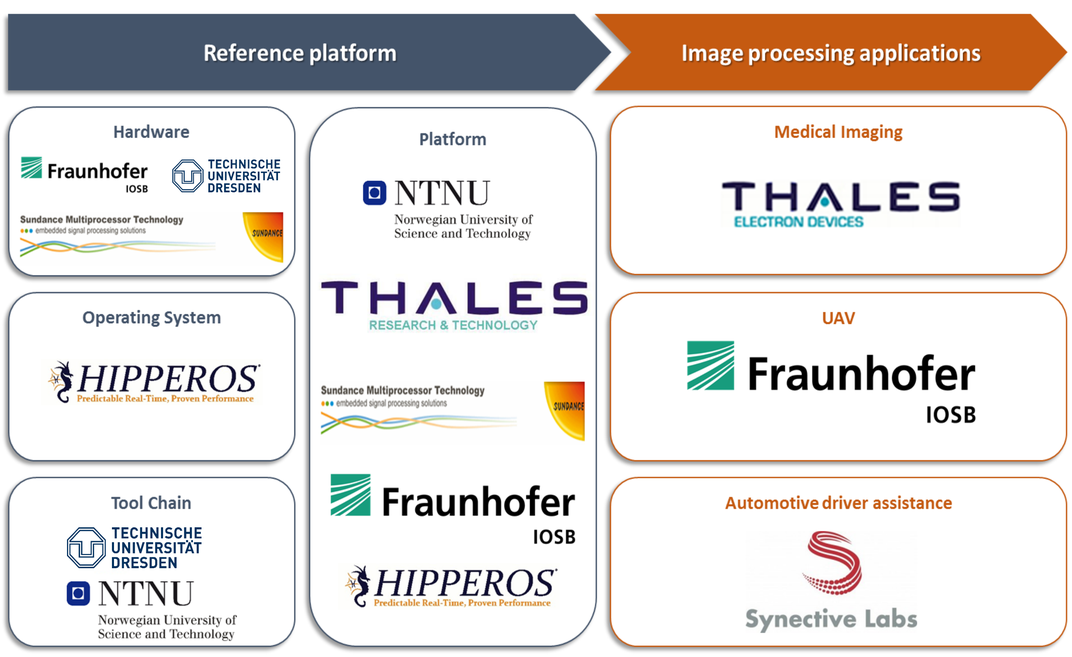
Boitumelo Ruf and Michael Grinberg

Motivation / Need

- Strong power and weight constraints for embedded vision systems
- Trade-off between high performance and low energy consumption
- Embedded development requires very specific expert knowledge regarding HW & SW

Goals

- Reduce development costs and time-to-market
  - Identify best possible choices for embedded image processing platforms
  - Initiate a path towards standardization
- Build up an ecosystem for low-power image processing platform
  - Reference platform and development guidelines
  - High performance real-time operating system
  - Energy-aware tool chain



Reference Platform & Development Guidelines

- Guidelines targeting HW & SW experts based on expertise from different domains
- Exemplary platform with a reference HW architecture and scalable low-power board

HIPPEROS: High-performance real-time operating system

- Low memory footprint
- Dedicated interrupt management for real-time processing

STHEM: Energy-aware tool chain

- Collection of utilities for energy-aware performance analysis
- Enhancing existing tool chain of a given platform instance

Demonstration on behalf of three use cases

- Image based obstacle avoidance for unmanned aerial vehicles (UAVs)
- Pedestrian detection for advanced driver assistance systems (ADAS)
- Real-time image enhancement for x-ray imagery

TULIPP starter kit available

- Be part of TULIPP by joining the Advisory Board like other industrial companies!

Further Information

- Visit TULIPP website at www.tulipp.eu or contact us at contact@tulipp.eu

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