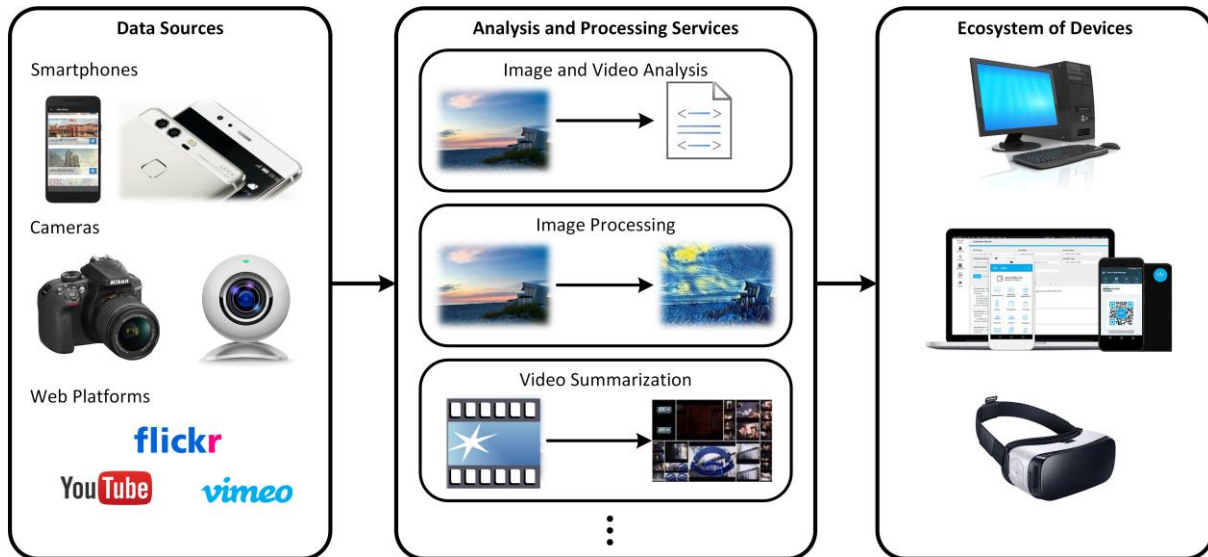


## Next-Generation Real-Time Visual Media Design and Implementation of a Smart Image and Video Platform



### Background

This master project is located in the context of research and development in the field of service-based analysis and transformation of digital images and videos. Recently, we built a next-generation platform that provides image and video analytics using machine learning and most sophisticated image abstraction techniques. This platform is supposed to change how people create, use, and disseminate visual media. This master project offers a unique chance to participate in this ongoing research project in cooperation with Digital Masterpieces – a leading app company in the respective field.

### Description

The master project is concerned with designing, implementing, and extending **atomic processing services** for image and video analysis and for non-photorealistic abstraction techniques. Based on them, **higher level services** can be built for diverse visual media applications, e.g., BeCasso. Topics of this master project include:

- **Real-Time Streaming Protocols:** How to extend the platform to efficiently support input and output of streamed contents from web-services (e.g., YouTube, Twitch or IP-cameras)?
- **Platform Scalability & Robustness Strategies:** Key advantages of service-based architectures are their potential scalability and robustness by dynamically (re)allocating additional hardware resources. For it, strategies for supporting horizontal scaling (e.g., using Amazon Web Services) should be developed.

The master project is suited for further scientific research (e.g., master thesis or future doctoral thesis). In addition, there are further possibilities for employment in the projects context.

### Contact

Research Group Computer Graphics System, Prof. Dr. Jürgen Döllner ([office-doellner@hpi.de](mailto:office-doellner@hpi.de)),  
**Marvin Richter** ([marvin.richter@hpi.de](mailto:marvin.richter@hpi.de)), Dr. Matthias Trapp ([matthias.trapp@hpi.de](mailto:matthias.trapp@hpi.de))