

Oliver Meynberg

Curriculum Vitae

July 2016

Relevant Publications

- 2016 **First author**, *Detection of High-Density Crowds in Aerial Images Using Texture Classification*, MDPI Journal of Remote Sensing, <http://dx.doi.org/10.3390/rs8060470>.
- 2015 **Co-author**, *Routing in Dense Human Crowds with Aerial Images and Smartphone Data*, MDPI International Journal of Geo-Information, <http://dx.doi.org/10.3390/ijgi4020974>.
- 2014 **Co-author**, *An Operational System for Estimating Road Traffic Information from Aerial Images*, MDPI Journal of Remote Sensing, <http://dx.doi.org/10.3390/rs61111315>.
- 2013 **First author**, *Airborne Crowd Density Estimation*, ISPRS Annals of Photogrammetry and Remote Sensing, <http://dx.doi.org/10.5194/isprsannals-II-3-W3-49-2013>. CMRT2013 conference, Antalya, Turkey
- 2012 **Co-author**, *Low-cost Optical Camera System for Real-Time Mapping Applications*, PFG Journal, <http://dx.doi.org/10.1127/1432-8364/2012/0109>.

Education

- 2013–Present **PhD Candidate**, *Crowd Detection in Aerial Images (working title)*, Karlsruhe Institute of Technology, Germany, Supervisor: Prof. Dr. Stefan Hinz <http://www.ipf.kit.edu/english>.
Scope: The ultimate goal is the detection of highly crowded regions and the estimation of crowd density in low-resolution aerial images. My research concentrates on feature encoding and feature learning techniques.
- 2002–2009 **Diplom-Ingenieur**, *Computer and Communications System Engineering*, TU Braunschweig,
Majors: Embedded Systems, Telecommunications, Integrated Circuit Design with FPGAs, Computer Network Theory.
Thesis: Development of a new Middleware for Real Time Image Processing in Remote Sensing <http://elib.dlr.de/60016/>

Work Experience

2009-Present **Research Engineer**, REMOTE SENSING TECHNOLOGY INSTITUTE, DLR, Oberpfaffenhofen near Munich, Germany.

My focus is on Computer Vision and Machine Learning, especially on object detection and texture classification in aerial images. Moreover, I like to develop high-performance software for processing large aerial images in real time.

Projects:

- Work package manager and coordination of small research team "Crowd-Analysis".
- Development and implementation of crowd detection algorithms
 - using a patch-based Bag-of-Words model,
 - using convolutional nets.
- Implementation of a camera control software for aerial cameras.
- GPU-enabled geo-referencing and re-projection of large aerial images.
 - Speed-Up factor compared to CPU-Version is 70:1

Miscellaneous

2008 **Merging Data Streams**, COMMUNICATIONS TECHNOLOGY INSTITUTE, TU Braunschweig.

Task: Development and implementation (in C) of an encoding protocol for merging and improving erroneous data streams in DVB-H transmission signals.

2007 **Educational JPEG encoder**, SIGNAL AND IMAGE PROCESSING LAB, Technion, Israel.

Task: Implementation of a JPEG encoder in C++, which visualizes the intermediate steps of the encoding process for educational purposes.

2006 **FPGA Programming**, EMBEDDED SYSTEM DESIGN AUTOMATION LAB, TU Braunschweig.

Task: VHDL hardware/software codesign using FPGAs. Supervision of students.

Programming Skills

Advanced C++, Matlab, Python, git, cmake
Intermediate C, L^AT_EX
Basic CUDA, Java

Languages

German Mothertongue
English Conversationally fluent
Spanish Basic words and phrases

Interests

- CrossFit
- Traveling
- Mountain biking