

CURRICULUM VITAE

Dr. Andrea Manno-Kovács

andrea.manno-kovacs@sztaki.mta.hu



Education

- 2013 *Ph.D. in Image Processing*
Pázmány Péter Catholic University, Budapest
- 2012 *Postgraduate diploma in Bionic Computer Engineering*
Pázmány Péter Catholic University, Budapest
- 2008 *M.Sc. in Computer Science*
Budapest University of Technology and Economics
- 2006 Autumn semester *Erasmus programme*
Helsinki University of Technology, Espoo, Finland

Research experience

- 2010 - MTA SZTAKI Machine Perception Research Laboratory
Research Fellow, Head of Earth Observation Research Group
- Main research topics:
 - image and video processing;
 - surface monitoring and earth observation;
 - semi-urban wetland detection;
 - active contour methods;
 - salient object detection.
 - Participation in national and international research projects:
 - Ongoing projects:
 - Observation of local WETland areas from Satellite Imaging (ESA - European Space Agency), **Technical PI** (2016-2018)
 - Multichannel Passive ISAR imaging for military applications (EDA - European Defence Agency), **researcher** (2015-2017)
 - Exploration of the environment in dynamic scenery from partial views (NKFIA - National Research, Development and Innovation Fund), **senior researcher** (2016-2019)
 - Satellite and aerial image processing for precision agriculture (SZTAKI inner project), **researcher** (2016-2017)
 - Previous projects:
 - Dynamic Urban Scene Interpretation and REconstruction through remotely sensed data Fusion (ESA- European Space Agency) **Technical PI** (2015-2016)
 - PRedictive reasOning and multi-source fusion empowering AntiCipation of attacks and Terrorist actions In Urban EnVironmEnts (FP7)
 - Structural information in the space of sensor networks (Hungarian Scientific Research Fund)
 - Reviewer for scientific journals and conferences
 - Scientific visits and presentations

- 2008 - Pazmany Peter Catholic University, Faculty of Information Technology
Lecturing and supervising experiences:
- Teaching assistant: Mathematical Analysis, Biometrical Identification, Image Processing (C++ platform), 3D Image Analysis and Video Processing (Matlab platform)
 - B.Sc. and M.Sc. supervisor in various topics
- 2007 Jun.-Dec. Budapest University of Technology and Economics
Department of Measurement and Information Systems
- Development of a CAD system for chest diagnostics
 - Automatic detection of anatomic shapes (lung, ribs) in chest radiographs
 - Implementation in C++ and Matlab platform
- 2004 *Digital motion picture restoration*
MTA SZTAKI and Hungarian Film Archive (restoration of the film Mattie the Goose-boy from 1949)

Awards

- 2016, 2013 *Publication Award*
Computer and Automation Research Institute
of The Hungarian Academy of Sciences (MTA SZTAKI)
- 2014 *"Top10%" paper certificate*
IEEE International Conference on Image Processing (ICIP)
- 2014 *Institution Award*
MTA SZTAKI
- 2011 – 2014 *Young Researchers' Academic Grant*
Hungarian Academy of Sciences
- 2008 – 2011 *Hungarian State Scholarship for Ph.D. Studies*

Languages

Hungarian – native
English – fluent
French – intermediate
German – basic
Finnish – basic

Computer skills

- Programming skills: Prolog, C, C++, Java, Matlab, Mathematica
- Database management: Oracle PL/SQL
- Web design: HTML, PHP, Joomla
- Miscellaneous: LAsTools, QGIS, Global Mapper, MS Office, Latex, Adobe Photoshop, GIMP

Selected publications

Journal

A. Manno-Kovács and A. O. Ok, "Building Detection from Monocular VHR Images by Integrated Urban Area Knowledge", *IEEE Geoscience and Remote Sensing Letters*, vol. 12, no. 10, pp. 2140-2144, 2015.

A. Manno-Kovács and T. Szirányi, "Orientation-selective Building Detection in Aerial Images", *ISPRS Journal of Photogrammetry and Remote Sensing*, vol. 108, pp. 94-112, 2015.

A. Kovács, T. Szirányi, "Improved Harris Feature Point Set for Orientation Sensitive Urban Area Detection in Aerial Images", *IEEE Geoscience and Remote Sensing Letters*, Volume 10, Issue 4, pp. 796-800, 2013.

L. Kovács, **A. Kovács**, Á. Utasi, T. Szirányi, "Flying Target Detection and Recognition by Feature Fusion", *Optical Engineering*, Volume 51, Issue 11, pp. 117002-1-13, 2012.

A. Kovács, T. Szirányi, "Harris Function Based Active Contour External Force for Image Segmentation", *Pattern Recognition Letters*, Volume 33, Issue 9, pp. 1180-1187, 2012.

Conference

A. Manno-Kovács, "Content based image retrieval using salient orientation histograms", *IEEE International Conference on Image Processing (ICIP)*, pp. 2480-2484, Phoenix, Arizona, USA, 25-28 September, 2016.

M. Shadaydeh, **A. Manno-Kovács**, T. Szirányi, "Change Detection in Wetlands using Multi-layer Fusion Markov Random Field", *What can Remote Sensing do for the Conservation of Wetlands? - 1st International Symposium*, pp. 21, Seville, Spain, 23 October, 2015.

A. Manno-Kovács, "Direction Selective Vector Field Convolution for Contour Detection", *IEEE International Conference on Image Processing (ICIP)*, pp. 4722-4726, Paris, France, 27-30 October 2014, paper in "Top10%".

A. Manno-Kovács and T. Szirányi, "Multidirectional Building Detection in Aerial Images Without Shape Templates", *ISPRS Workshop on High-Resolution Earth Imaging for Geospatial Information*, pp. 227-232, Hannover, Germany, 21-24 May, 2013.

A. Kovács, T. Szirányi, "Improved Force Field for Vector Field Convolution Method", in *Proc. of the IEEE International Conference on Image Processing*, Brussels, Belgium, 11-14 September 2011.

Other skills

- B category driving license (2004)
- Musical skills (9 years study)

Personal interests

- Sailing
- Travelling
- Wine tasting, gastronomy