

PRESS RELEASE

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Doris Antensteiner receives EMVA Young Professional Award 2018

Dubrovnik, 09 June, 2018. The EMVA Young Professional Award 2018 goes to Ms. Doris Antensteiner, for her work “Light Field and Photometric Stereo”. Antensteiner, age 32, obtained a master degree in Computer Science in 2011 and a master degree in Computer Science Management in 2014, both from [Vienna University of Technology](#). Between 2012 and 2015 she worked as “Image Processing Engineer“ in „R&D Video and Sensors“ at Kapsch TrafficCom. Currently, she works at the [Austrian Institute of Technology](#) Center for Vision, Automation and Control and is a PhD Candidate at [Graz University of Technology](#).

Light Field and Photometric Stereo

Recovering the shape and reflectance properties of a scene are fundamental problems in computer vision. Conventional imaging systems only provide limited information, since they can't capture directional radiance information and only provide the sum of light at each image position. Hence, they capture two-dimensional pictures of this world. A more complete description can be achieved by using light field cameras and photometric stereo approaches. The combination of a depth map from light field with surface normals from photometric stereo enables a highly precise depth reconstruction and material analysis.

The awarded work resolves the problematic nature of acquiring a highly precise 3D surface reconstruction of objects with a focus on industrial applications. This is achieved

by analyzing light rays passing through the camera lens, which capture a scene illuminated from a defined direction. An optimal fusion of light field and photometric stereo is found using variational methods. Solutions both for area-scan and multi-line scan cameras are achieved. The latter allows the algorithms in the awarded work to be apt for a wide range of industrial applications.

Applications of the results achieved in the work lie in the field of product inspection, defect detection, brand protection, product security and optical inspection of materials. A highly precise 3D reconstruction allows a detailed error detection in production lines. Methods of anti-counterfeiting can be improved by a better description and analysis of the material structure.

Young professional award part of EMVA Business Conference

The EMVA Young Professional Award is an annual award to honor the outstanding and innovative work of a student or a young professional in the field of machine vision or image processing. It is the goal of the European Machine Vision Association EMVA to further support innovation in the machine vision industry, to contribute to the important aspect of dedicated machine vision education and to provide a bridge between research and industry. With the annual Young Professional Award the EMVA intends to specifically encourage students to focus on challenges in the field of machine vision and to apply latest research results and findings in computer vision to the practical needs of the industry. The awardee was announced on June 09 during the 16th EMVA Business Conference in Dubrovnik/Croatia, where she also had the opportunity to present her work as part of the regular conference program.

The 17th EMVA Business Conference will take place from 16–18 May, 2019 in Copenhagen/Denmark.

Picture source: EMVA

About EMVA:

Founded in May 2003 in Barcelona, the European Machine Vision Association currently has about 120+ members representing more than 20 nations. Its aim is to promote the development and use of machine vision technology and to support the interests of its members - machine vision companies, research institutions and national machine vision associations. The main fields of work of EMVA are: standardization, statistics, the annual EMVA Business Conference and other networking events, European research funding, public relations and marketing. To find out more visit the web site www.emva.org.