

PRESS RELEASE

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Dr. Rolandos Alexandros Potamias wins EMVA Young Professional Award 2025

Awarded work “High-fidelity 3D Hand Modelling, Detection and Reconstruction in world-coordinates” presented at EMVA Business Conference in Rome. Next conference 2026 will take place in Stockholm

Rome, Italy; 27 May, 2025. The EMVA Young Professional Award 2025 goes to Dr. Rolandos Alexandros Potamias for his work “High-fidelity 3D Hand Modelling, Detection and Reconstruction in world-coordinates”. The awardee was announced on 23 May during the 23th EMVA Business Conference in Rome, where he also had the opportunity to present his work as part of the regular conference program. Rolandos Alexandros Potamias is a postdoctoral researcher in 3D Computer Vision at the Department of Computing of Imperial College London in United Kingdom, focusing on perceiving and modelling humans. Rolandos holds a MEng from the School of Electrical and Computer Engineering in National Technical University of Athens. He obtained his PhD degree from Imperial College London under the supervision of Stefanos Zafeiriou with the thesis entitled "Advances of graph neural networks for 3D shape learning and analysis". Rolandos' current research efforts focus on building foundational embodied AI for open-world robots.

Awarded Work: High-fidelity 3D Hand Modelling, Detection and Reconstruction in World-coordinates

Given their power to express human behaviour and interact with objects, hands present a very important, but still challenging to model component of the human body. The significance of hand modelling can be further amplified considering its social benefit amongst deaf and hard-of-hearing communities. Currently, most of the hand modelling methods rely on low polygon hand models that fail to capture the intricate details of the hands, making real-world AR/VR applications extremely challenging. Apart from its low polygon count, current hand models are trained using limited subjects, which not only prohibits their expressive power but also imposes unnecessary shape reconstruction constraints on 3D hand pose estimation methods. Moreover, hand appearance remains almost unexplored and neglected from the majority of hand reconstruction methods.

The awarded research can be divided in three main components: i) hand shape modelling, ii) hand detection and iii) 3D hand reconstruction. To achieve highly detailed 3D hand reconstruction, Potamias' developed a large-scale model of the human hand, called Handy, modelling both shape and appearance, composed of over 1200 subjects with large diversity in age, gender, and ethnicity, enabling accurate reconstruction of out-of-distribution samples. Following this work, Potamias' introduced WiLoR, a data-driven transformer-based pipeline for efficient and real-time multi-hand detection and 3D reconstruction from in-the-wild images. The developed model can efficiently detect and estimate the hand shapes and poses from images containing multiple hands. To enable motion modelling of the hands in the world-space, especially from egocentric wearable camera settings where hands and camera are continuously in motion, Potamias' developed HaWoR, a SLAM-based hand motion reconstruction model. HaWoR decouples the task of 3D world-coordination hand motion reconstruction in two steps; reconstructing the hand motion in the camera space, and estimating the camera trajectory in the world coordinate system.

The technologies developed from Potamias' research have received commercial attention and can further advance the various industrial applications ranging from augmented and virtual reality (AR/VR) and virtual try-on to embodied AI and robot-learning.

About the EMVA Young Professional Award

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 Award winner is presented during the EMVA Business Conference.

Location of next EMVA Business Conference 2026

Traditionally, at the end of the conference it was announced in which city the next, 24th EMVA Business Conference will take place. The machine vision industry will meet from 18 – 20 June, 2026 in Stockholm/Sweden.

Photo (From left to right): EMVA Board Member Petra Thanner; EMVA Young Professional Award 2025 winner Dr. Rolandos Alexandros Potamias; EMVA President Dr. Chris Yates s; Picture source: EMVA

About EMVA

Founded in 2003, the European Machine Vision Association (EMVA) is a non-for-profit and non-commercial association representing the Machine Vision industry in Europe that is open for all types of organizations having a stake in machine vision, computer vision, embedded vision or imaging technologies: manufacturers, system and machine builders, integrators, distributors, consultancies, research organizations and academia. The EMVA hosts four international vision standards, and all members – as the 100% owners of the association – benefit from the dedicated networking, standardization, and cooperation activities of the EMVA. www.emva.org.