

University of Groningen

Efficient morphological tools for astronomical image processing

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Curriculum Vitae



Ugo Moschini was born on the 14th of February 1983 in Pisa, Italy. He obtained a MSc degree in Computer Science from the University of Pisa, Italy, in 2010.

In 2009, he started his research and professional career during a six-month stage at the European Space Agency (ESA) Research and Technology Center. He joined the Global Educational Network for Satellite Operations (GENSO) project, that aims to increase the return from educational space missions through a network of ground stations and spacecraft. He gained practical experience about ground-station networks and satellite communication, enabling a direct data

streaming to and from satellites within the GENSO network.

In 2010, he had the opportunity to join again ESA at the Operations Centre, in Germany, as a Young Graduate Trainee at the Human Spaceflight Operations/Future Studies Section. He developed a novel algorithm to compress housekeeping telemetry in real-time on-board of satellites, awarded at the highly prestigious SpaceOps 2012 conference. The algorithm, now a US patent and filed for an EU patent, was tested and validated on satellite telemetry and robotic hardware: it will be part of two future ESA technology demonstration missions.

In 2012, he kept on combining his interests in Space and Computer science, joining the Intelligent Systems group at the University of Groningen as a PhD candidate. His research focuses on connected mathematical morphology and its extensions. Effort is put to combine connected and hyper-connected filters with other image processing tools for improved perceptual grouping and segmentation, with application to astronomical and remote sensing images at very high resolution. Efficient and parallel algorithms are being designed and developed to support filtering on floating point high resolution 2D and 3D datasets.