FONDAZIONE BRUNO KESSLER
MAGAZINE

Andrea Micheli was awarded the prize for the best doctoral thesis in the field of artificial intelligence

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His name is Andrea Micheli; he was born in 1987 and has just won the EurAI European Award for the best PhD thesis in the field of Artificial Intelligence.

The prize was officially awarded to him on **August 31, 2016** in **The Hague** during **ECAI 2016**, the top European conference on Artificial Intelligence.

The study by the Italian researcher who routed the fierce international competition is the result of four years worth of work conducted thanks to a Doctorate scholarship granted by **Trento-based Fondazione Bruno Kessler**, with the **Embedded Systems Research Unit** led by **Alessandro Cimatti**. The dissertation, entitled “Planning and Scheduling in Temporally Uncertain Domains”, was discussed this year at the

ICT School of the University of Trento where he completed his PhD program.

We asked Andrea Micheli how his passion for Artificial Intelligence developed and what he wants to do in the future: “During my studies in Computer Science at the University of Trento I had a part-time collaboration agreement with FondazioneBruno Kessler, at the Embedded Systems Unit. Here I came into contact with this topic, which was the subject of my thesis for the Master degree, supervised by Alessandro Cimatti.

I continued in the same field with my PhD thesis, working in teams with FBK researchers. I currently work at Fondazione Bruno Kessler, with a researcher contract. In the future I would like to stay in research. “

Summary of the study entitled “Planning and Scheduling in Temporally Uncertain Domains” by Andrea Micheli

The thesis is part of a field of artificial intelligence called “planning”. The goal of planning is to automatically generate the commands to be delivered to a system (for example a robot or an industrial plant) to achieve a given goal. In particular, the study covered the issue of temporal uncertainty, i.e. when the duration of certain activities cannot be controlled. For example, if an exploration robot were asked to move between two geographical points, the journey time may depend on the weather conditions or the roughness of the terrain: factors that the robot cannot control. In this sense, planning must take into account the uncertainty in the duration of the actions in order to build strategies that guarantee that the goal is achieved in all situations. The techniques that have been developed in the thesis serve precisely the purpose of ensuring that the goal is achieved taking limited uncertainty, which is specified by a field expert (for example, the robot can assume a minimum and maximum duration for the journey and its execution will be ensured assuming these constraints are correct).

This kind of issue is particularly relevant in space exploration. During his PhD, Andrea Micheli, among other things, spent six months at the NASA Ames Research Center in Mountain View (California).

(v.l.)

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