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Autor: Mondada, Francesco

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Master in Robotics at EPFL

Francesco Mondada*

Since the academic year 2018–2019, students at the Ecole Polytechnique Fédérale de Lausanne (EPFL) can follow a new Master degree in robotics, which is the result of a renewed effort by the EPFL research and education community active in this field, coordinated around the "Robotics" National Research Competence Centre (NCCR). This new degree offers training in the theory, technology and practice of robotics, covering for example mobile robotics, portable robots, robotic manipulators, autonomous robots, biomedical robotics, and the interface between robots and the human nervous system.

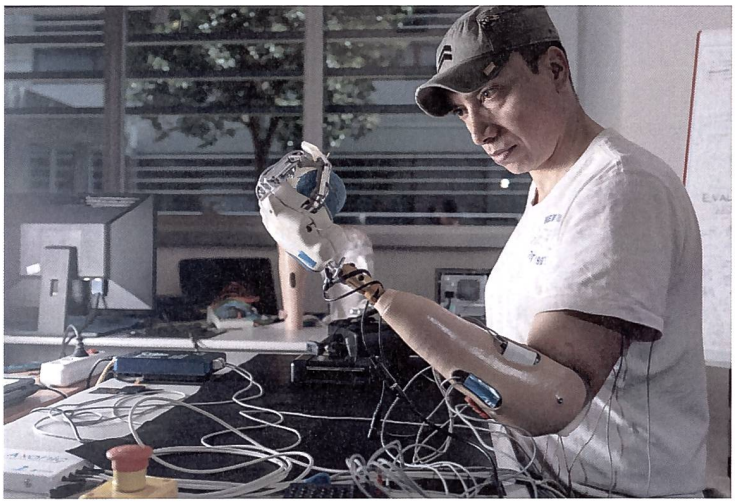

Figure. *During their master's final project, students were asked to develop and clinically evaluate a neuro-controlled upper limb prosthesis intuitively controlled and felt by the amputee as the natural one (courtesy of Silvestro Micera's lab, EPFL).*

*EPFL - STI - IMT – LSRO, bureau MEB3426, Station 9, 1015 Lausanne

E-mail: *francesco.mondada@epfl.ch*
EPFL: *www.epfl.ch*
Robotics master: *http://master.epfl.ch/robotics/*

Francesco Mondada, Ph.D., is a Professor in mobile robot design at the Ecole Polytechnique Fédérale de Lausanne (EPFL) and coordinator of the Robotics Master. He received his M.Sc. in micro-engineering and his Doctoral degree in computer science from EPFL. He co-founded several companies, being CEO of K-Team SA for about 5 years. He has been participating, then leading the design of well know robots, such as Khepera, s-bot, marXbot, e-puck and Thymio, together reaching more than 10 thousands mentions/citations in scientific papers. His interests include the development of innovative mechatronic solutions for mobile robotics and making robot platforms more accessible for education, research, and industry.

A strong emphasis of this new Master is on practice: mandatory and elective courses include practical exercises to apply theoretical aspects to real systems. Moreover, the semester and interdisciplinary projects, as well as the final year project, allow students to work with researchers on complex problems in the robotics laboratories of EPFL. It is important to note that this Master degree is one of the few EPFL Masters that offer the possibility of carrying out three projects (10 ECTS) in laboratories at master level, in addition to the final year project. Students can also choose to spend part of their studies in industry, with a 6-month internship.

This comprehensive course provides EPFL students with access to research and industrial careers in a wide range of fields where robotics technologies are increasingly applied, such as biomedical technologies, logistics and transport, aviation and drones, autonomous cars, industry 4.0, smart homes, environmental technologies, to name a few. In addition, students can take advantage of EPFL's strong innovation ecosystem to invent new robotic systems and applications and create their own business.

Concerning admissions: Students with a Bachelor degree in Microengineering from EPFL are automatically admitted. National, international, and EPFL students with a Bachelor in Computer Science, Electrical Engineering, Electronics, Mechanical Engineering or a related field may also apply and will be selected on the basis of their academic record. All students must have an interdisciplinary background and have taken courses in at least two of these fields: Computer Science, Electronics, and Mechanical Engineering. ■

More information: *http://master.epfl.ch/robotics*