ICTH PhD

**SEMINAR Announcement**

**Friday, 12 June 2020, 12:30–14:30**
**Microsoft Teams, Course of Medical Robotics (Prof. Fanny Ficuciello)**
**Code: ef3vjb0T**

## Prof. Pietro VALDASTRI

Director of the STORM Lab
Director of the Institute of Robotics, Autonomous System and Sensing (IRASS)
Full Professor and Chair in Robotics and Autonomous Systems at University of Leeds
https://www.stormlabuk.com/

# Exploring Autonomy in Robotic Flexible Endoscopy

Abstract: The talk will focus on Robotic Flexible Endoscopy and the level of computer assistance required to minimize the mental burden on the operator. Flexible endoscopy enables clinicians to reach deep inside the human body to diagnose and treat mortal diseases, such as cancer. Unfortunately, conventional flexible endoscopes are difficult to operate, often traumatic for the patient, extremely expansive, and prone to the risk of viral and bacterial cross-contamination. Robotic flexible endoscopes – a sub-class of medical continuum robots – have the potential to revolutionize the field by offering an easy-to-use, safe, affordable and low-risk alternative for procedures such as gastrointestinal endoscopy. During the talk, we will discuss robotic flexible endoscopy platforms under development at the STORM Lab to transform medical robotics. We will also explore different levels of computer assistance designed to improve the user experience and facilitate adoption by healthcare operators.

Biosketch — PIETRO VALDASTRI's academic career started with a Laurea degree cum Laude in Electronic Engineering from the University of Pisa in 2001 and a PhD degree cum Laude in Biomedical Engineering from Scuola Superiore Sant'Anna in 2006, with Prof. Paolo Dario as primary advisor. After the PhD, he served as Assistant Professor of Biomedical Engineering at the BioRobotics Institute of Scuola Superiore Sant'Anna for three years, focusing on implantable medical devices and surgical robotics. In 2011, Prof. Valdastri moved to Vanderbilt University, where he became Assistant Professor of Mechanical Engineering. There, Prof. Valdastri started the Science and Technologies Of Robotics in Medicine (STORM) Lab focusing on medical capsule robots for gastrointestinal endoscopy and abdominal surgery. In 2016, he

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moved to Leeds as Full Professor and Chair in Robotics and Autonomous Systems with a primary appointment in the School of Electronic and Electrical Engineering and a secondary appointment in the School of Mechanical Engineering. In Leeds, Prof. Valdastri is directing the STORM Lab, the Institute of Robotics, Autonomous System and Sensing (IRASS), and the Robotics at Leeds network. Prof. Valdastri is a Royal Society Wolfson Research Fellow, a Senior Member of the Institute of Electrical and Electronics Engineers (IEEE), the Editor for Medical and Rehabilitation Robotics of the IEEE Robotics and Automation Letters, a member of the Technology Committee of the European Association for Endoscopic Surgery (EAES), and a member of the steering committee of the International Society for Medical Innovation and Technology (iSMIT). In the last five years, Prof. Valdastri received more than €10M in research funding as Principal Investigator, including the National Science Foundation CAREER Award with the proposal “Lifesaving Capsule Robots” in 2015, the European Research Council Consolidator Grant Award with the proposal “NoLiMiTs – Novel Lifesaving Magnetic Tentacles” in 2019, and the KUKA Innovation Award for his robotic colonoscopy platform. STORM Lab’s research has been featured by several tech news outlets, including BBC, The Financial Times, The Spectator, WIRED, IEEE Spectrum, Medgadget, Daily Mail, The Engineer, Medical Design Technology Magazine, Medical Xpress, Newswise, NSF Science Now.

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