State of the Art in Robotic Leg Prostheses: Where We Are and Where We Want to Be

Workshop website: https://belab.mech.utah.edu/iros2020/

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In this talk, Dr. Tommaso Lenzi will be discussing the progression of the design, development, and control strategies at the Bionic Engineering Lab. Central to this progression is the development of mechatronic technologies and control systems that interact with the human in an intuitive manner, improved ambulation ability in the real world. In this talk, he will describe research activities underway to advance the science of bionics. I present non-biomimetic designs empowering next generation bionic limbs to imitate the biological leg mechanics. Further, he will present preclinical testing with individuals with lower-limb amputations using a lightweight bionic leg to ambulate and perform activities that are not possible with available prostheses such as climbing stairs step-over-step and two steps at the time, crossing over obstacles, squatting, and lunging. Finally, critical areas of future research will be discussed that must be advanced to step towards the clinical viability of bionic legs.

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