

► FABRIZIO PATANÈ

Associate Professor at University Niccolò Cusano

fabrizio.patane@unicusano.it

EDUCATION

Master's degree in Mechanical Engineering (February, 2000), University of Rome "La Sapienza" (Rome, Italy)

- ▶ Thesis: flow sensors for Respiratory Ventilators (Experimental Thesis).

Doctoral degree (PhD) in Mechanical Measurement (March, 2004), University of Padua "La Sapienza" (Padua, Italy)

- ▶ Thesis: implementation of automatic devices for the mechanical characterization of rehabilitative aids (Experimental & Design Thesis).

PRESENT POSITIONS

Associate Professor (2014 –), University "Niccolò Cusano" (Rome, Italy)

Research consultant (2002 –), Pediatric Hospital "Bambino Gesù" (Palidoro, Rome, Italy)

PAST POSITIONS

Researcher (2010 –2014), University of Rome "La Sapienza" (Rome, Italy)

Professor (2019 – 2012), University "Guglielmo Marconi" (Rome, Italy)

Posthoc (2004 – 2010), University of Rome "La Sapienza" (Rome, Italy)

Visiting Professor/Scientist (2008), NYU-Poly Polytechnic Institute of New York (New York, US)

Tutor (2005 - 2007), University "Campus Biomedico" (Rome, Italy)

EXPERIENCE

Teaching

- ▶ Master's and Bachelor's degree courses: "Mechanical and Thermal Measurement", "Laboratory of Micro-Sensors", "Biomechanics", "Measurements for Clinical Diagnosis", "Measurement Systems", "Power-plant Control and Instrumentation".
- ▶ Coordinator of Master's, Bachelor's, and Phd's degree theses (Biomedical, Electronical and Mechanical programs).

Research (related to Health/Robotics fields)

- ▶ Main fields: biomechanics; industrial measurement; rehabilitative robotics
- ▶ International and National research projects, with individual and/or coordination-level contribution
- ▶ Most important collaborations: MIT, NYU, College De France, Istituto Superiore di Sanità, "Bambino Gesù" Hospital, Fondazione Don Gnocchi", Gaslini Hospital, Université catholique de Louvain, VU

Medical Centre Amsterdam, University of Sheffield.

- ▶ Most important project related to cardiomyopathies: MD-PAEDIGREE (<http://www.md-paedigree.eu/>).
- ▶ Most important project related to mechatronic devices: ITINERE (<http://www.projectseed.it/>).
- ▶ Most important fully designed and implemented robotic device: RotoBiT3D (<http://www.projectseed.it/>), to be delivered at "Fondazione Don Gnocchi.
- ▶ More than 60 (peer reviewed) scientific publications.
- ▶ Two patents (European level), and one patent pending.

TECHNICAL SUMMARY

General skills

Experimental mechanics, measurement networks, environmental measurement systems, inertial measurement systems for biomechanical applications, robotic devices for neuro rehabilitation. Mechanical design, software development, system integration. Ability to work within a multi-disciplinary team of engineers and doctors.

Software

- ▶ CAD/Simulation/reverse engineering: Solidworks, COSMOS, Autocad, Visual Nastran, Geomagic;
- ▶ CAD (electric/electronic): Eagle (cadsoft), QElectroTech;
- ▶ Compilers (Windows): C/C++, Visual Basic;
- ▶ Compilers for Microcontrollers (microchip): MikroC, Hitech C;
- ▶ Measurement/Control: LabVIEW, LabVIEW real time OS;
- ▶ Scientific Data processing: Matlab, SPSS, Mathematica;
- ▶ Website Authoring: Dreamweaver.
- ▶ Database: Access.

Hardware

- ▶ General laboratory instrumentation (oscilloscopes, multimeters, function generators ...);
- ▶ Sensors (both use and design) for measuring force, torque, velocity, acceleration, displacement, pressure, temperature, humidity, flow;
- ▶ Coordinate measuring machine / laser scanner (FARO);
- ▶ Robot Control / industrial drives;
- ▶ Industrial control/supervision (PXI)
- ▶ Microcontrollers (-pic16, pic18-, PIC24-, PIC32-);
- ▶ Systems for 3D motion capture, both optical and inertial;
- ▶ Surface Electromyography (EMG).