# NICOLA PELLICCIOTTA

trained as a physicist working at the interface of biological and soft matter physics in the university of Cambridge, where I earned my PhD, and Rome. I have more than eight years of experience in combining image analysis and microfluidics. With a team-oriented attitude, I am eager for innovation and sustainability.

## WORK EXPERIENCE

**Postdoctoral Fellow at Sapienza University** 2019-Present
Developed computer vision algorithms to control the dynamics of genetically-engineered swimming bacteria with modulated light. Implemented machine-learning-based algorithms to track bacteria growth and lineage. Fabricated microfluidic devices to study singlecell growth and SU8-microstructures with Two Photons Lithography.

**Ph.D. in Physics, University of Cambridge** 2015-2019 Developed image analysis and microfluidics protocols to study the dynamics of brain and airways ciliated cells under shear flow. Built a general model based on hydrodynamics to explain forces involved in the alignment and synchronization of mammalian motile cilia.

**Academic collaboration with GSK** 2016-8
Characterized the effect of new drugs for Cystic Fibrosis and Primary Ciliary Dyskinesia by studying cilia dynamics of airway cells using the novel algorithms on microscopy images (Multi-DDM)

**Academic collaboration with Mimetas, The Organ-on-a-chip company** 2018
Worked on the development of organ-on-a-chip device reproducing airway tissues.

**Research Fellow at LINV Institute, Florence** 2014-5
Implemented systems to acquire electric signals and spatial movements of plants. Established a model describing the role of electricity in the closure of the 'Venus flytrap.'

**Teaching**
3-year demonstrator for the Complex Fluids course, Part II students, University of Cambridge. Supervised three master thesis projects (Uni of Cambridge and La Sapienza). Assistant Demonstrator for the "Hands on School" in Trieste

## EDUCATION

**Ph.D. in Physics** 2020
University of Cambridge, Cambridge, UK

**Master's Degree in Physics** 2013
La Sapienza University, Rome. 2013 **Bachelor's Degree in Physics** 2011

### Languages
Italian (native)
English (C1-IELTS)

### Programming skills
Python
Matlab
Machine learning

### Technical skills
Cell culture
Soft lithography
Microfluidics
Manual mill and lathe, Raspberry PI and Arduino

### Communication skills
Speaker in 6 international conferences.

### Awards
Marie Curie scholarship, Early Stage Researcher

Spin Your Thesis! 2015 by ESA

Avvio alla Ricerca 2021 (4k research founding)

### Publications
Google Scholar profile