

Andrea Bernardini

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Ph.D. student in the Mechanical Engineering department of Imperial College London. Accustomed to interdisciplinary studies and readily adaptable to new environments, methods and teams.

Education and Qualifications

2016-present Imperial College London, Ph.D. in Mechanical Engineering

Research project:

Modelling deformations and solid/fluid interactions in soft tissues with application to Drug Delivery in Brain.

Research interests:

- Mechanical Characterisation of cerebral tissue
- Biomechanics
- Mechanical properties of soft tissues
- Mechanical modelling of soft tissues
- FEA Modelling

2015-2016 University of Surrey, M.Sc. in Biomedical Engineering (Distinction)

Subjects studied:

Human Biology, Instrumentation, Biomechanics, Professional and Research Skills, Computer Methods, Medical Implants and Biomaterial Applications, Human Movement and Rehabilitation, Biomedical Sensors and Signals.

Final Project: "Investigating the electrophysiological properties of cells following programmed cell death induction in RBCs" Supervisors: Dr H. Fatima Labeed and Dr. Erin Henslee

Skills developed:

- Cell culture
- Dielectrophoresis analysis
- Fluorescence-activated cell sorting
- Scanning Electron Microscopy techniques

2011-2015 Università degli studi di Pavia, B.Sc. in Bioengineering (99/110)

Subjects studied:

Bioengineering and Physiology (elements of chemistry, models applied to physiology, principles of physiology), Processing of biomedical data, Biomechanics and simulation of biomedical devices, Modelling of biological systems, Laboratory activities (6 months).

Final Project: "Processing of data from tensile tests on samples of ascending aorta aneurysms" Supervisors: Professor Simone Morganti and Professor Paolo Magni
Final presentation of the project given to a panel of professors and audience of students and members of the public.

Skills developed:

- Complex problem solving
- Engineering approach to biological systems
- Mechanical testing of biological tissues

Previous Research Experience

2014-2015 Università degli studi di Pavia

Tensile tests on human aneurysmal samples and peeling tests on porcine aortic samples to gather mechanical properties of the tissue. Samples were grouped by age and gender. Worked as part of the Computational Mechanics & Advanced Materials Group. Supervisors: Professor Ferdinando Auricchio and Professor Simone Morganti.

May-September 2015 Brunel University London

Modelling peeling and tensile tests from porcine and human samples: from determining the material properties to the FEA simulations. Reported progress weekly to the supervisor and gave monthly presentations to the research team (mechanical engineers) of the supervisor Professor Giulio Alfano.

Digital competences

During my academic career I have had the opportunity to work with several software packages and programming languages:

- Languages: Matlab, R, LabVIEW (group project on designing a simple transducer of pressure), C, JavaScript (group project on designing a website for a dental office), SQL.
- FEA: Abaqus, ANSYS, LS-DYNA.
- Word Processors: LaTeX, Microsoft Office.
- Signal and Image processing: Simpleware, Digscope, ImageJ.

Languages

Italian (mother tongue)

English (8.0 IELTS April 2015)

German (GGA Awards Level 4)

Latin enthusiast

Japanese beginner level

Other activities and interests

Amateur pianist and ex-pupil of the Maestro pianist and composer Corrado Fedrighi.

Active member of the Volleyball Social University Team.

Volunteer promoter of the school activities (languages and science society).

Volunteering experience at a shelter house for street children in Kolkata during a self-funded travel in 2015 where I also had the opportunity to meet the Italian ambassador in India and illustrate the professional figure of bioengineers.

History of art lover and classic Latin enthusiast, interests grown during the high school period.