

Master of Science in Computational Biology and Biomedicine

Université Nice Sophia Antipolis, France

A truly inter-disciplinary one-year learning experience

This master program is designed for those having completed the first-year master program at home institution in one of the following fields: computer science, electrical engineering, applied mathematics, mathematical biology, bioinformatics, biophysics.

Three major themes

Required courses list

Bioinformatics

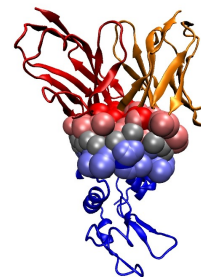
- » Algorithmic problems in computational structural biology: Understanding proteins and protein interactions, F. Cazals, INRIA
- » Discrete and continuous approaches to model gene regulatory networks, J.L. Gouze, INRIA

Biomedical signal and image analysis

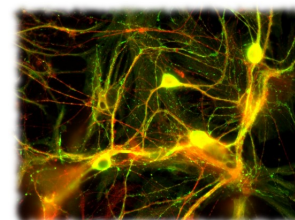
- » Variational methods and geometric flows for brain imaging, R. Deriche INRIA
- » Deconvolution and denoising for confocal microscopy, J. Zerubia, INRIA
- » Digital signal processing for the analysis and modeling of electrophysiological records, O. Meste, UNS-I3S
- » Computational anatomy and physiology of the human body, X. Pennec, INRIA

Modeling in neuroscience

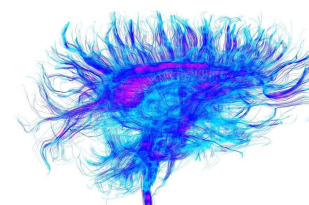
- » Inverse problems in functional brain imaging, M. Clerc, INRIA
- » Neuron dynamics, B. Cessac, INRIA



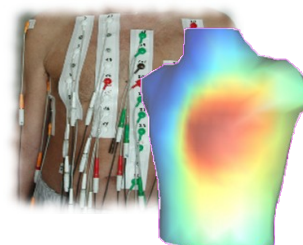
Antibody-antigen complex with interface atoms identified using a Voronoi diagram based calculation. (Courtesy F. Cazals, INRIA)



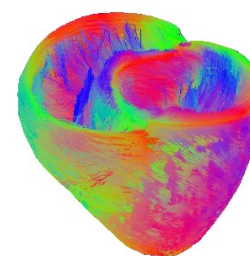
Fluorescence imaging of a network of hippocampal neurons in culture. (Courtesy F. Duprat, IPMC)



Brain Connectivity Obtained Through Diffusion MRI. (Courtesy R. Deriche, INRIA)



Body surface potential mapping: Sensors placements and information extractions for the risk stratification of myocardiac infarction. (Courtesy O. Meste, I3S)



Statistical model of fibers in the heart (mean orientation) determined from 9 DTI images of canine hearts. (Courtesy X. Pennec, INRIA)

Scholarships available for foreign students

Job opportunities

Research career in academia or industry

Program coordinators

Elisabetta De Maria and Théo Papadopoulo
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Sample courses illustration

This program is part of the Master 2 BIM: Biologie, Informatique et Mathématiques (parcours Computational Biology and Biomedicine) from Université Nice Sophia Antipolis. It is hosted by the Polytech'Nice-Sophia engineering school from Université Nice Sophia Antipolis. Located in Europe's largest scientific park, Sophia Antipolis which is on the French Riviera, between Nice and Cannes. <http://computerScience.unice.fr>

