



Nicolas Chiaruttini

Image analysis / Microscopy / Biophysics

- Strong skills in **image analysis**, **computer science**, and **optical microscopy**
- Nine years of experience in **quantitative biophysics**
- Enthusiastic, adaptable, strong **team player**

Personal infos

Age : 32
French

Prof Address

University of Geneva
quai Ernest Ansermet
Biochemistry Dept
Roux lab
Switzerland

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Website

kiaru.eu

GitHub

github.com/NicoKiaru

Languages

French ★★★★★
English ★★★★★

Practical skills

Computing

Imaging → ImageJ (plugins & macros) / Imaris
Programming → Java / Matlab / LabView / Ruby / PHP / Python (Basic)
Environments → Windows / Linux / Android
Other → GPGPU (CUDA) / OpenGL / SketchUp / MySQL / L^AT_EX

Microscopy

→ 5D Live imaging / In vitro & in vivo
→ Design / Realization / Interfacing of custom setups
→ Call for tenders of imaging setups

Physics & Biology

→ Analytical and numerical analysis
→ Optics and soft matter
→ Good knowledge in biology

Computing achievements

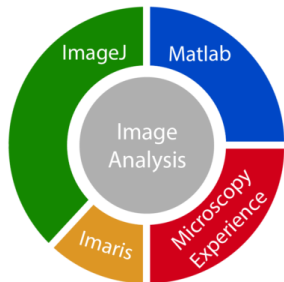
- 2015-present **Surfel based 3D segmentation method** kiaru.eu/informatique/segmentation-3d/
Conception and implementation of a method to segment cell surfaces (or any other surface) directly in a 3D image stack. This method is integrated into ImageJ as a recordable and scriptable plugin, and is parallelized on GPGPU with CUDA. Manuscript in preparation. In collaboration with the Gonzalez-Gaitan lab for the imaging part.
- 2015-present **Numerical simulation of crowded polymers** kiaru.eu/recherche/escrt-iii/
In order to study a novel type of biological filaments (Escrt-III), implementation in Java of a CUDA parallelized code that simulates hundreds of thousands of polymer elements.
- 2014-present **Grimpor, an original climbing game** kiaru.eu/informatique/grimpor/
Implementation during my free time of a climbing game for Android devices.
- 2011-2012 **Controller 42** kiaru.eu/informatique/controller_42
Interfacing in Oriented Object Matlab of a custom confocal spinning-disc setup equipped with an optical trap, micromanipulators, pressure control systems and microfluidics. Writing of drivers for various devices (Nikon Eclipse, Fluigent, Sutter, live image processing of Guppy camera).
- 2011 **Biophysics applet** biophysicapplet.free.fr/
Scriptable java applets (optical traps / lipid vesicles / fluctuating polymers) for biochemistry classes.
- 2007 **Chemicals - Lab database** sourceforge.net/projects/chemlabdatabase/
Online database written in PHP/MySQL + javascript to register lab products (chemicals / plasmids). Used both by my PhD and PostDoc lab.

Scientific communication

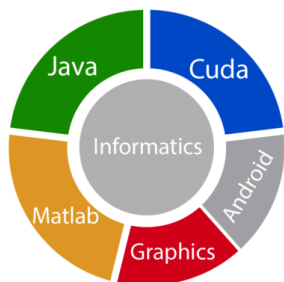


- 2015 **Post-doctoral work outreach** [www.cell.com/cell/issue?pii=S0092-8674\(14\)X0048-6](http://www.cell.com/cell/issue?pii=S0092-8674(14)X0048-6)
 Following my publication acceptance in Cell:
 → Realization and submission of a cover image - selected by Cell.
 → Call for tender and supervision of an illustrative video. (2 months / 6 k\$).
 → Press release co-writing : "The cell membrane winds up like a watch".
- 2015 **Best talk prize** [Evian-les-bains, France](#)
 Prize for best talk at the 2015 congress of Endocytosis - Exocytosis Club.
- 2011-present **Teacher assistant** [University of Geneva, Switzerland](#)
 Practical courses in informatics (12h per year). 4h course in informatics and 4h course in biochemistry for master's students.
- 2007-2010 **Teacher assistant** [Paris Diderot University, France](#)
 Practical courses in classical mechanics for bachelor's students (64h per year).

Research experience



- List of publications** scholar.google.ch/citations?user=m1bQjIAAAAJ
 Expert in biophysics - co-authored eight scientific publications cited more than 200 times - collaborating with biologists (Cellular: Loewith / Gerlich labs; Development: Gonzalez-Gaitan lab) and physicists (Lenz / Scheuring labs).
- 2011-present **Post-Doctoral research** [Aurélien Roux Lab, University of Geneva, Switzerland](#)
- **Scientific production**
 - Main project on Escrt-III polymers made the cover of Cell
 - + 2 publications in collaboration + 2 in preparation
 - Successful applicant of a Marie Curie European fellowship
 - CYTOCUT Project, 185 k€
 - **Development of informatics tools**
 - Surfel based 3D segmentation method
 - Routinely writing and sharing ImageJ macros and plugins
 - OOP Matlab Setup Interfacing (Controller 42)
 - **Transmitting knowledge**
 - Supervision of two Master's students
 - Support in microscopy and image analysis
 - **Lab responsibilities**
 - Setting-up of the lab wiki and lab product database
 - Maintaining lab computers up-to-date
 - Introducing lab informatics tools to new lab members
 - Co-organization of the annual lab retreat
 - In Palermo (3 days, 18 people)
 - **Development of optics tools**
 - Design, realization and interfacing of an optical setup
 - Key tool for 3 publications (2 x Cell, 1 x Nature Cell Biology)
- 2007-2010 **Thesis** [Nanobiophysics Lab, ESPCI ParisTech, France](#)
- **Contribution to the establishment of a new lab**
 - Interfacing a synchronized Fluo/Patch-Clamp setup
 - Setting up wiki and lab database
 - **Scientific publications**
 - Infection mechanism of bacteriophages - 2 publications
 - DNA sequencing by nanopores - 2 publications



Education

2006-2007	Master 2 "Interface Physique Biologie"	Paris Diderot University, France
2005-2006	Master 1 Physics	Ecole Normale Supérieure de Lyon, France
2003-2005	Licence 3 Physics & Licence 3 Biology	Ecole Normale Supérieure de Lyon, France
2001-2003	"Classes préparatoires"-Intensive foundation degree	Lycée St Louis, Paris, France

Hobbies

Climbing, Running, Mountain sports.