

Sacha Ichbiah

ENGINEER · PHD STUDENT IN BIOPHYSICS

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Education

PSL University (ENS)

DOCTOR OF PHILOSOPHY, PSL UNIVERSITY (ENS)

Paris, France

2020-2022

- Biophysics of early-embryogenesis. Modeling of 3D morphogenetic processes
- Force inference in embryos in two and three dimensions

École Normale Supérieure

MASTER'S DEGREE, INTERNATIONAL CENTRE FOR FUNDAMENTAL PHYSICS PROGRAM

Paris, France

2019-2020

- Theoretical Physics cursus, strong emphasis on Statistical Physics and Computer Science. Graduated with honors ("Very Good")

École Polytechnique

MASTER'S DEGREE, ENGINEER SCHOOL

Palaiseau, France

2016-2020

- General formation. Major in Quantum and Statistical Physics

Lycée Jean-Baptiste Say

PREPARATORY CLASSES

Paris, France

2014-2016

- Multidisciplinary formation in Mathematics, Physics, Industrial Sciences. Admitted to the best ranked school after competitive exams.

Professional experiences

École Normale Supérieure

TEACHER IN MASTER

Paris, France

Jan. 2022 - Apr. 2022

- Gave the exercise session of the master course *Physics of multicellular systems* taught by H.Turlier and V.Hakim
- Realization of numerical modeling for biology exercises - <https://github.com/sacha-ichbiah/M2ICFP>

College de France, Center for Interdisciplinary Research in Biology

MASTER'S THESIS

Paris, France

Apr. 2020 - June 2020

- Coding of a tunable python library to create datasets of artificial cell microscopy images
- Realization of a neural network architecture designed to enforce a physical model as prior knowledge

Oxford University, Department of Physical Chemistry

RESEARCH ASSISTANT

Oxford, UK

March 2019 - July 2019

- Research project under supervision of Pr. Aarts in Colloid Group, in a highly international and pluridisciplinary environment
- Statistical inference of interactions between particles from electrical microscopy images

Unistellar

R&D INTERN

Marseille, France

June 2018 - Sept. 2018

- Internship in a start up realising a smart telescope. Coded a pipeline of treatment of astronomy images in python

French Navy

NAVY OFFICER

Toulon, France

Nov. 2016 - April 2017

- Military and management training of Polytechnique curriculum : adjunct of chief of service on "Aconit" frigate

Technical Knowledge

Statistical Physics Statistical Physics of Phase Transitions • Out of equilibrium Physics • Complex Systems

Biophysics Soft Matter • Early Embryogenesis • Biomechanics • 3D modeling • Force Inference

Mathematics Optimisation • Adjoint State Methods • Discrete Differential Geometry • Computer Graphics • Stochastic Calculus • Optimal Transport • Random Networks • Statistical Learning • Bayesian Inference • Computer Vision

Computer Science Python • Pytorch • Java • C++ • Cuda • Julia • Linux Environnement (Bash, Docker, Slurm)

Other activities

Literature French and Russian Literature • **Sport** Running, Bike, Swimming, Crossfit