

CURRICULUM VITAE

Giulio Colombini



Born in Guastalla, RE

27 November 1996

e-mail giulio.colombini2@unibo.it
address Via Compagnia 9, Guastalla (RE)
phone +39 339 82 01 164

IT SKILLS

- C/C++ (STL, ROOT)
- Python:
 - scientific computing
 - code parallelisation
 - C++/FORTRAN binding
- git collaboration and version control
- Matlab and Octave
- \LaTeX
- Linux shell (bash)

LANGUAGES

Italian mother tongue
English IELTS 7.5
German A2

REFERENCES

Prof. Armando Bazzani
University of Bologna
armando.bazzani@unibo.it

EDUCATION

University of Bologna Nov 2021 – Ongoing

Ph.D. in Physics Ongoing PhD position in Physics of Complex Systems.
Research topics:

- Dynamical network models for the neurosciences
- Epidemiological models
- Genetic expression networks
- Entropic measures

University of Bologna Oct 2018–Sept 2021

M.Sc. in Physics 110/110 cum Laude
Dissertation: Synchronisation Phenomena in Complex Neuronal Networks
Supervisor: Prof. A. Bazzani
Curriculum: Theoretical Physics
Elective courses:

- Physics of Complex Systems
- Complex Networks
- Information Theory and Complexity Theory (from MSc in Mathematics)
- Quantum Many Body Theory
- Quantum States of Matter and Radiation

University of Bologna Oct 2015–Dic 2018

B.Sc. in Physics 110/110
Dissertation: Entropic measures in human mobility: the BellaMossa database in Bologna.
Supervisor: Prof. A. Bazzani.

PUBLICATIONS

1. A. Bazzani, A. Fabbri, C. Mizzi, G. Colombini
Statistical and dynamical properties of the bike mobility: The Bella Mossa data set in Bologna
Presentation at the Conference on Complex Systems, Trento, 1-3 July 2019
2. C. Mizzi, A. Fabbri, G. Colombini, F. Bertini, A. Bazzani
A survival model to explain the statistical properties of multimodal mobility. Journal of Statistical Mechanics: Theory and Experiment, 2022(2), 023404.

GITHUB PROJECTS

HopfieldNetwork Graphical simulation of a Stochastic Hopfield Network in Python. Time evolution is fully parallelised using multiprocessing.

LZ78 Python and numpy implementation of the Lempel-Ziv 78 compression algorithm, adapted to the estimation of the entropy rate of a stochastic process, based on compression ratios.

Date: 14/4/2022