Gabriele Braghelli

Nationality: Italian

ABOUT ME

Currently master student in Theoretical Physics at University of Rome "La Sapienza"

VOLUNTEERING

SEP 2021 – JUN 2022 Terni, Italy
Save The Children Italy

Created personalized study plans for a middle school student, helping them organize and manage their study schedule based on academic commitments during the pandemic.

EDUCATION AND TRAINING

SEP 2022 – CURRENT Rome, Italy
M.S. IN THEORETICAL PHYSICS (COMPLEX SYSTEMS AND STATISTICAL MECHANICS CURRICULUM) University of Rome "La Sapienza"

•Physics of Complex Systems (30/30)
•Statistical Mechanics and Critical Phenomena (30/30)
•Statistical Mechanics of Disordered Systems (30/30)
•Computing Methods for Physics (27/30)
•Statistical Physics & Machine Learning (27/30)
•Mathematical Physics (30/30)

Master thesis' supervisors:
Prof. Vittorio Loreto
Prof.ssa Francesca Tria
Dr. Vito D.P. Servedio

Final grade110/110 (Expected final grade); Current average grade: 28.6/30

ThesisComplex Systems thesis titled "The interplay between Innovation & Obsolescence with Polya urn model"

SEP 2019 – SEP 2022 Rome, Italy
B.S. IN PHYSICS University of Rome "Roma Tre"

Final grade110/110 cum laude

ThesisNon-equilibrium statistical mechanics thesis: "Equalities and Inequalities: Irreversibility and the Second Law of Thermodynamics at the Nanoscale"

SEP 2014 – JUL 2019 Terni, Italy
HIGH SCHOOL GRADUATION Liceo Scientifico Galileo Galilei (Scientific High School)

Final grade97/100

WORK EXPERIENCE

28 SEP 2024 – 2 NOV 2024 Vienna, Austria
MASTER THESIS RESEARCH TRAINING CSH (COMPLEXITY SCIENCE HUB)

• Worked on the interplay between innovation and obsolescence using an urn model approach;
• Analyzed real datasets to enhance the urn model by processing them using Python libraries.

APR 2023 – SEP 2023 Rome, Italy
UNDERWENT TRAINING COBBS LABORATORY (COLLECTIVE BEHAVIOUR OF BIOLOGICAL SYSTEMS)

Complex Systems Laboratory:

- Developed the initial experimental setup for the preliminary investigation of active matter trajectories in water;
- Used calibration and post-calibration programs to reconstruct object positions in water through 3D reconstruction technique.

HONOURS AND AWARDS

Scholarships

- *From AY 2019/2020 to AY 2024/2025:* awarded regional Lazio DiSCO scholarships (Regional Agency for the Right to Education and Knowledge) based on academic merit;
- *AY 2020/2021 and AY 2021/2022:* winner of 1 of the 5 scholarships awarded to students with honorable university careers by the Department of Physics and Mathematics at University of Rome "Roma Tre".

Mathematical Olympics-Archimedes' games

- School winner *2015*
- Regional selection partecipant *2016*

LANGUAGE SKILLS

Mother tongue(s):   **ITALIAN**

Other language(s):

	UNDERSTANDING		SPEAKING		WRITING
	Listening	Reading	Spoken production	Spoken interaction	
ENGLISH	B2	B2	B2	B2	B2

Levels: A1 and A2: Basic user; B1 and B2: Independent user; C1 and C2: Proficient user

DIGITAL SKILLS

Python │ C │ C++

CREATIVE WORKS

OCT 2023 – CURRENT
Science outreach: Podcaster & Speaker

Fisicaffè ("Italian Physics Students Association" podcast)

- Episode titled "**Overview on complex systems**";
- Episode titled "**How does complexity science explain decision-making?**"
- Episode titled "**How does complexity science explain memory?**"
- Episode titled "**How does complexity science explain perception?**"
- Episode titled "**Physics of Neurodivergences: A Complexity Perspective**"

CONFERENCES AND SEMINARS

20 NOV 2024 – 22 NOV 2024 CREF (Research Center "Enrico Fermi"), Rome
Fostering Research Synergies

Invited as a speaker to the workshop held in Rome in collaboration with IMT Lucca (Institute for Advanced Studies in Lucca).

25 OCT 2024 CSH, Vienna
Polya's Urns: Innovation & Obsolescence

Presented a talk over a substantial portion of my master thesis work and its practical and empirical implications.

Ai fini della pubblicazione - F.to Gabriele Braghelli

Rome , 14 Jan 2025