





# Keivan Amini

Physicist interested in mathematical modelling, multidisciplinary research and machine learning.

 [github.com/keivan-amini](https://github.com/keivan-amini)  [linkedin.com/keivan-amini](https://www.linkedin.com/keivan-amini)  [keivan.amini@outlook.it](mailto:keivan.amini@outlook.it)  +39 3466781190

## EDUCATION

---

### Sorbonne Université (Erasmus+ Exchange)

*M.Sc. Thesis Abroad: Navigation and human-robot interaction using reinforcement learning*

### Alma Mater Studiorum - University of Bologna

2021 – 2023

*M.Sc. in Applied Physics*

29.25/30.00 — 110/110

**Courses:** Statistical Data Analysis, Supervised Statistical Learning, Software and Computing, Models and Numerical Methods, Applied Electronics, Databases, Complex Networks, Physics of Complex Systems.

### University of Ferrara

2018 – 2021

*B.Sc. in Physics*

28.77/30.00 — 110/110 cum laude

**Courses:** Calculus, Linear Algebra, Mathematical Methods for Physics, Laboratory of Programming & Statistics, Laboratory of Analog and Digital Electronics, Quantum Mechanics, Astrophysics, Cosmology, Nuclear Physics.

## EXPERIENCE

---

### University of Bologna | *Research Engineer*

Jan 2024 – Present

Applying statistical and graph learning methods on multi-omics data.

### Institut des Systèmes Intelligents et de Robotique | *Research Intern*

Feb – Aug 2023

- Contributed to ELSA Project, developing an agent capable of socially interacting with a human.
- Employed Robot Operating System for building robot applications and conducting Turtlebot experiments.

### Laboratori Aperti | *Digital Educator*

2021 – 2023

Digital education program in Emilia-Romagna region addressed to teaching teenagers information technologies.

- Developed interactive labs for several secondary schools, leading laboratories on coding, electronics and robotics.
- Taught how to code a space-shooter videogame with using Python during Montecreto Summercamp 2022.

### University of Ferrara | *Research Intern*

Apr – Aug 2021

Development of an inverse kinematics algorithm for robotic arms, under supervision of Prof. Donato Vincenzi.

## PROJECTS

---

### Node2Vec Hi-C | *Python (Pandas, Scikit)*

Jul 2023 – Aug 2023

- Developed Node2Vec-based library for detecting chromosome translocations in Hi-C matrices.

### Three-Body Problem | *C++ (Boost)*

Dec 2022 - Feb 2023

- Conducted physical simulations, implementing numerical integration methods to solve the governing ODEs.

### Growbox for Mushrooms | *C++, Arduino*

May 2022

- Designed a showcased mushroom grow box in Ferrara's Laboratorio Aperto, collaborating with local firms.

## HONORS & AWARDS

---

**University of Bologna, Department of Medicine:** awarded 26000 € research fellowship.

**National Research Council:** awarded the National Ph.D. in Artificial Intelligence for Society scholarship (refused).

**University of Bologna, Department of Physics:** awarded summer school scholarship.

**Erasmus+, Italian Ministry of Education (MIUR):** granted two exchange scholarships.

**University of Ferrara:** awarded excellence recognition and secured full fee exemption upon M.Sc. enrollment.

## CONFERENCES & SUMMER SCHOOLS

---

### Oxford Machine Learning Summer School 2024 | *Oxford, UK*

Jul 2024

### Intrinsically Motivated Open-ended Learning 2023 | *Paris, France*

Sep 2023

Presented M.Sc. Thesis on 'Visit the lab scenario: Exploration in Model-Based Reinforcement Learning'.

### Mediterranean Machine Learning Summer School 2023 | *Thessaloniki, Greece*

Aug 2023

Top-researchers lectures and practical sessions organized by Google DeepMind Research team.

## SKILLS

---

**Languages:** Python (NumPy, Pandas, SciPy, PyGame), C/C++ (Boost), R, Julia, SQL, MATLAB (Robotics Toolbox).

**Tools:** Git/GitHub, Linux Bash, VS Code, Arduino IDE, L<sup>A</sup>T<sub>E</sub>X.