



## Alessandro Ravoni

**Nationality:** Italian **Date of birth:** 05/03/1990 **Phone number:**

**Email address:** \_

**Email address:** \_

**Home:** Rome (Italy)

### EDUCATION AND TRAINING

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#### Ph.D. in Physics

*Roma Tre University (with fellowship)* [ 2021 ]

Thesis: "Autocatalytic networks and the origin of life"

Supervisor: Marco Pedicini

#### Master of Science in Physics

*La Sapienza University of Rome* [ 2017 ]

Thesis: "A model for active particles' flux in one-dimensional channels"

Supervisor: Luca Angelalani

#### Bachelor Degree in Physics

*La Sapienza University of Rome* [ 2014 ]

Title: "Docking Algorithms"

Supervisor: Anna Tramontano

#### High School Diploma, specialization in scientific studies

*Liceo Scientifico Statale Archimede, Rome* [ 2009 ]

### WORK EXPERIENCE

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#### Postdoctoral Research Fellow

*National Research Council of Italy* [ 15/09/2021 – Current ]

- Implementation of mathematical models of complex biological systems
- Modelling and simulation of the immune system as part of the H2020 project 'INDIVIDUALIZED PAEDIATRIC CURE: CLOUD-BASED VIRTUAL PATIENT MODELS FOR PRECISION PAEDIATRIC ONCOLOGY'.
- Design and implementation of numerical simulations in the programming languages C, Python

#### Scientific director

[ 06/2021 – Current ]

Coordination of the scientific committee for "LàFuori - science and art festival"

### TEACHING ACTIVITY

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#### Teaching assistant/tutor

[ 2019 – 2020 ]

Algorithms and data structures, Undergraduate students, Faculty of Mathematics, Roma Tre University

## Teaching assistant/tutor

[ 2018 – 2019 ]

Physics course, Undergraduate students, Faculty of Engineering, Roma Tre University

## CONFERENCES ORGANISATION

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### Program Committee member, ALIFE 2023

[ 07/2023 ]

## PUBLICATIONS

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### [Ravoni A., Long-term behaviors of Autocatalytic Sets](#)

[2021]

Journal of Theoretical Biology, 529: 110860

### [Ravoni A., Impact of composition on the dynamics of autocatalytic sets](#)

[2020]

Biosystems, 198: 104250

### [Ravoni A., Angelani L., Lattice model for active flows in microchannels](#)

[2020]

Physical Review E, 102.6: 062602

## TALKS AND PRESENTATIONS

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### Contributed talk

[ 04/2023 ]

"Drug exposure in C-IMMSIM"

ERA4TB workshop: Host Immune System-Pathogen Interactions: Challenges and Opportunities, Rome, Italy

### Contributed talk

[ 07/2022 ]

"Tumor-drug interaction in an agent-based model of the immune response"

iPC general meeting

### Contributed talk

[ 07/2022 ]

"Thermodynamic efficiency of autocatalytic networks"

NetSci2022: International School and Conference on Network Science, Network Science Society, online conference

### Contributed talk

[ 07/2021 ]

"Long-term behaviors of autocatalytic sets"

NetSci2021, Network Science Society, online conference

### Poster presentation

[ 09/2020 ]

"The impact of composition on the dynamics of autocatalytic sets"

NetSci2020: International School and Conference on Network Science, Network Science Society, online conference

### **Poster presentation**

[ 07/2020 ]

“The impact of composition on the dynamics of autocatalytic sets”

ICCS2020: Tenth International Conference on Complex Systems, New England Complex Systems Institute, online conference

### **Contributed talk**

[ 09/2019 ]

“Compositionality in autocatalytic networks”

WIVACE 2019, XIV International Workshop on artificial life and evolutionary computation, Rende, Italy

### **Poster presentation**

[ 07/2018 ]

“Lattice model for active flows in microchannels”

ICCS: International Conference on Complex System IX – Cambridge, MA, USA, New England Complex Systems Institute, July 2018

## **CONFERENCES AND SEMINARS**

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### **Molecular Origins of Life**

[ 06/2023 ]

Munich, online conference

### **ERA4TB: 6th Consortium Meeting**

[ 01/2023 ]

Institut Pasteur, Paris

### **WOST III: Stochastic Thermodynamics III**

[ 05/2022 ]

University of Tokyo, online conference

### **NetSci2021: International School and Conference on Network Science**

[ 07/2021 ]

Network Science Society, online conference

### **WOST II: Stochastic Thermodynamics II**

[ 05/2021 ]

Santa Fe Institute, online conference

### **MECO45: 45th Conference of the Middle European Cooperation in Statistical Physics**

[ 09/2020 ]

Babes-Bolyai University and the Transylvanian Branch of the Hungarian Academy of Sciences, online conference

### **NetSci2020: International School and Conference on Network Science**

[ 09/2020 ]

Network Science Society, online conference

### **ICCS2020: Tenth International Conference on Complex Systems**

[ 07/2020 ]

New England Complex Systems Institute, online conference

**WIVACE 2019: XIV International Workshop on artificial life and evolutionary computation**

[ 09/2019 ]

Rende, Italy

**CCS: Italian regional conference on complex systems**

[ 07/2019 ]

Trento, Italy

**Biophysics@Rome conference**

[ 05/2019 ]

Rome, CNR

**Statistical physics of complex systems**

[ 05/2019 ]

Nordita, Stockholm, Sweden

**Disordered serendipity: a glassy path to discovery**

[ 09/2018 ]

La Sapienza University of Rome

**ICCS: International Conference on Complex System IX**

[ 07/2018 ]

Cambridge, MA, USA, New England Complex Systems Institute

**3RD SYSBIO.IT SCHOOL**

[ 05/2018 ]

Rome, IASI-CNR

**Biophysics@Rome conference**

[ 12/2017 ]

Rome, CNR

**High Performance Bioinformatics**

[ 11/2017 ]

Rome, Cineca

**Introduction to R for data analytics**

[ 05/2017 ]

Bologna, Cineca

**Debugging and Optimization of Scientific Applications**

[ 04/2017 ]

Rome, Cineca

## SKILLS

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**C, Python, Mathematica coding (excellent)**

**Data-analysis and visualization softwares (Gnuplot, SciDavis, Python, Cytoscape)**

**Excellent knowledge of Unix, Windows, Mac OS operating systems**

**Text-editing tools (Latex, Notepad, Office, Emacs, gedit)**

**Machine Learning**

**Fast learner and problems solver**

**Strong organization and team working skills**

**Particular attention to details**

## LANGUAGE SKILLS

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Mother tongue(s): **Italian**

**Other language(s):**

**English**

**LISTENING B2 READING B2 WRITING B2**

**SPOKEN PRODUCTION B2 SPOKEN INTERACTION B2**

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

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*Consapevole che, ai sensi dell'art.76 del DPR 445/2000, le dichiarazioni mendaci, la falsità negli atti e l'uso di atti falsi sono punite ai sensi del Codice penale e delle leggi speciali vigenti in materia, dichiara sotto la propria responsabilità che quanto dichiarato nel seguente curriculum vitae et studiorum comprensivo delle informazioni sulla produzione scientifica corrisponde a verità.*

27/07/2023

Alessandro Ravoni