

## Jacopo Uggeri

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### Summary

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### Professional Experience

#### *Graduate Teaching Assistant*

Department of Physics, Imperial College London (London), United Kingdom

2022 – 2023

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### Education

#### *MSci Physics with Theoretical Physics*

Imperial College London (London), United Kingdom

2019 – present

- Undergraduate Integrated Masters programme in physics, attended a variety of courses that granted a solid foundation in scientific and critical thinking, with a focus on theoretical physics
- Excellent academic performance, achieved 1st in theoretical modules: Mathematical Methods, Foundations of Quantum Mechanics, Advanced Classical Physics, Group Theory, Nuclear and Particle Physics, Statistical Mechanics
- Current relevant courses: Quantum Field Theory, Unification, General Relativity, Cosmology
- Used Python extensively for data analysis of experiments and simulations

#### *Diploma di Laurea*

Liceo Scientifico Giovanni Gandini (Lodi), Italy

2013 – 2019

- A scientifically oriented high school with a wide range of subjects spanning both sciences and humanities
- Participated in extracurricular events and activities with a focus on Physics and Mathematics
- Graduated with a grade of 100/100 at Esame di Stato

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### Projects

#### *Can photo evaporation explain lack of red giants in the galactic centre?*

MSci Project at Imperial College London

2022 – now

- The project aims to determine the photo evaporation rate of red giants around supermassive black holes and determine how this phenomenon affects their evolution, to investigate whether it can explain the observed lack of red giants in the galactic centre compared to equilibrium theoretical predictions.
- Computational and theoretical project: involved writing, testing and organizing code that could be shared with others
- Helped develop critical scientific thinking and research skills

#### *Search for beyond SM physics from LHCb data*

Group Project at Imperial College London

2021

- Involved coordinating with other 20 students to analyze data from LHCb experiment
- Participated in group discussions and contributed meaningful ideas

- Main role was to train a machine learning decision tree model to separate background from signal

#### *Improving people counter image recognition neural network*

Summer work experience at GrottiniLab with Politecnico di Ancona

2020

See [Attachment 1](#)

- Assigned to a software engineer working on a people counter neural network, with the aim of exploring new avenues of improvement
- Reviewed literature on the current state of the art of image recognition neural networks
- Proposed and coded a new data augmentation strategy to improve the people counter

#### *Critical Temperature of an Ising Model on a Sierpinski Gasket*

Year 1 Summer Project at Imperial College London

2020

- Worked remotely with a peer to simulate an Ising model on a Sierpinski gasket network
- Wrote Python code to run, visualize and analyze the simulation, and numerically evaluated the model's critical temperature and the corresponding critical exponent.
- Delivered a video summary of the project and a detailed report

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### Experiences

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#### *DeepLearn Summer School*

4th International School on Deep Learning

2021

See [Attachment](#)

- Attended 38 hours of postgraduate level lectures given by Machine Learning experts from various fields
- Learned to comprehend and acquire meaningful information from lectures that assumed more advanced background knowledge than I had

#### *Project Extreme Energy Events (EEE)*

Long running project organized by INFN involving multiple Italian high schools

2013 – 2019

- Participated in the data taking and analysis process for a MRPC muon detector
- Attended lectures on particle physics and cosmic rays
- Participated in joint conferences between participating schools summarizing recent results

#### *Building an MRPC muon detector chamber at CERN*

2017

See [Attachment](#)

- Worked with peers in a laboratory to assemble a muon detector chamber
- Attended various seminars hosted by CERN personnel regarding the current state of particle physics

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### Skills

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#### Coding

- Python, Java Extensiv Work
- Javascript, C++ and Ruby Known
- Data science and machine learning: PyTorch, Keras, OpenCV

## Languages

- Italian Native
- English Native (Bilingual)
- Spanish B1 DELE certification
- Japanese Passed Level 4 Class at Imperial College London
- Mandarin Conversational

## Misc

- Adobe Suite: Illustrator, Photoshop, Premiere Pro
- Git
- LaTeX
- AI prompt engineering
- Independent study

20/01/2021

To whom it may concern,

Jacopo Uggeri has worked for me here at Grottini Lab for three months. He worked in our R&D department during summer 2020 dealing with research topics in human behaviour understanding in retail context, using computer vision.

He quickly became one of us rather than just an intern, the person everyone went to with questions and special projects. Dedication and willingness to work long hours to get the job done as scheduled have made him a favourite team member for everyone on staff.

I highly recommend Jacopo because is very reliable and dedicated. In his time at Grottini Lab, he has shown that he has the technical, organization, and interpersonal skills that make a truly exceptional deep learning engineer. He worked with state-of-the-art neural networks helping us to improve the accuracy of our computer vision systems for shopper behaviour understanding. Jacopo implemented and tested on our datasets deep learning networks for instance segmentation of humans in complex backgrounds.

If you are seeking someone with exceptional deep learning and computer vision skills, Jacopo offers all these skills, plus adaptability and grace under pressure.

Best regards,

Emanuele Frontoni



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# DeepLearn 2021 Summer

## 4<sup>th</sup> International School on Deep Learning

July 26-30, 2021

Las Palmas de Gran Canaria, Spain

THIS IS TO CERTIFY THAT:

**Jacopo Uggeri** has successfully participated in DeepLearn 2021 Summer, which consisted of 38 hours of lectures.

Las Palmas de Gran Canaria, July 30, 2021

Emanuele Frontoni  
Professor  
Polytechnic University of Marche

Carlos Martín-Vide  
Professor  
Rovira i Virgili University

Tuesday 26 January 2021

To Whom It May Concern:

I was Jacopo Uggeri's math and physics teacher at Liceo Scientifico "G. Gandini" in Lodi for three years. This letter is to confirm that in those years Jacopo participated actively, with his talent and constancy, to the following projects:

Project Extreme Energy Events (EEE):

- A project promoted by Centro Fermi and INFN (<https://eee.centrofermi.it>) involving various Italian high schools. Jacopo participated in the data taking and analysis process for a MRPC muon detector we have a tour school, attended classes on particle physics and cosmic rays and participated to joint conferences summarising recent discoveries and results
- 1 week Summer Stage at CERN Building an MRPC muon detector chamber (2017) where he worked with peers in a laboratory to assemble a muon detector chamber. He also attended various seminars hosted by CERN personnel regarding the current state of particle and high energy physics

Please let me know if you need any more information.

Yours sincerely,

Eugenio Tufino

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