ALLEGATO C

Curriculum vitae et studiorum di:

Francesco Montedori nato il 25/07/1990

EDUCATION

Advanced school in artificial intelligence (AS-AI), CNR-ISTC
Rom
e, Italy
10/2018 – 03/2019

- Project Title: Empath-AI: An AI system to recognize human emotion
- Project role: Software and AI Developer

Master's Degree in Neurobiology, Università La Sapienza
Rom
e, Italy
10/2014 – 03/2019

- Thesis Title: ''Testing the effect of serotonin on the visual response of mouse retinal ganglion cells''
- Thesis subject: Electrophysiology
- Thesis Advisors: Prof. Giancarlo Poiana (Università La Sapienza)
- External Advisor: Dott. Hiroki Asari (EMBL - Monterotondo)
- Final Grade: 110/110 cum Laude. Average mark: 28.4/30

Bachelor Degree in Biotechnology, Università La Sapienza
Rom
e, Italy
10/2009 – 7/2014

- Thesis Title: Antibiotic resistance mechanisms of the bacterial strain MG-1655 in relation to the D-potE and D-potJ protein pumps
- Thesis subject: Microbiology
- Thesis Advisor: Gianni Prosseda (Università La Sapienza)
- Final grade: 103/110. Average mark: 24.5/30

High School Diploma, T. Mamiani Roma (Italy)
Rom
e, Italy
2004/2005 – 2008/2009

- Classical, Scientific School - Scientific Project "Brocca"
- Final grade: 66/100

WORK EXPERIENCE

Institute of Cognitive Science and Technologies ISTC – Roma

IMTWIN (European Horizon 2020 project)
Rom
e, Italy
06/2021 – now

- Video processing of facial expressions in children with ASD syndrome (Early diagnosis and treatment)
- Data mining
- Neural Network development and training

- TCP/IP communication between Raspberry Pi and central PC
- Data storage

Associazione PRAXIS, Ente Formativo accreditato presso la regione Marche
Rom
e, Italy
11/2021 – 12/2021

- Artificial Intelligence Course (40 hour):
- Content creation (Machine Learning e Deep Learning)
- Content display (20 students)

FreeBreath System (European Space Agency ESA - kick start activities for AI).
Rom
e, Italy
01/2020 – 06/2020

- Writing the proposal for the Feasibility Study (Technical part);
- Management of relations with project partners (ESA, SET, Biomedical Campus);
- Service system architecture design and development;
- Data mining;
- Data storage;
- Artificial Intelligence algorithm design;

Increasing Serotonin to reduce parkinsonian tremor
Rom
e, Italy
11/2019 – 07/2020

- Bibliographic research
- Data mining
- Design and implement the biological model (differential equations) to reproduce and treat Parkinson disease;
- Writing the paper (published on PubMed);

Teacher for the Advanced School in Artificial Intelligence (ASAI) **Rome, Italy**
01/2020 – 02/2020

- Introduction to physical computing - Arduino:
- Overview of the main applications of Arduino boards
- Use of development kits
- Use of sensors and the actuators
- Student end of course project management

Tutoring for two students of the second edition of the ASAI (Emotion recognition project)
Rome, Italy
01/2020 – 06/2020

- End of course project management
- Building the AI model to detect user engagement during e-learning

ECO-Learning MAIND project
Rom e, Italy
12/2019 – 06/2020

- Production of basic scientific lessons on the topic AI for corporate training courses
- Content creation (Machine Learning e Deep Learning)

European Molecular Biology Laboratories EMBL – Roma

Monterotond

o, Italy

06/2017 –
03/2019

Electrophysiology and Computational data analysis

- Trainee at EMBL Roma Hiroki Asari Lab, Roma (Italy) Studies on Visual System;
- Retina surgery, Multi-Electrode-Array electrophysiological records, Brain Slicing and Image Acquisition;
- Visual stimuli design and processing (Python & QDSpy);
- Design of 3D-printed instruments;
- Drug administration;
- Manage scientific databases;
- Data analysis;

SKILLS, ACTIVITIES & INTERESTS

Languages

- Italian: Native
- English: Advanced

BIOLOGICAL Skills:

- *In vitro*/*In vivo* Electrophysiology
- Genome analysis
- Plasmid DNA extraction
- Electrophoresis;
- PCR and RT-PCR
- Transformation with calcium chloride
- Electroporation;
- Phage transduction
- MIC Test Stripes
- Protein purification
- Immuno-isto chemistry
- Flow cytometry

IT Skills:

- Programming: *Python (Advanced); Arduino (Advanced);*
- Libraries: Numpy, openCV, Pandas, Socket, Matplotlib, etc.
- AI development: Tensorflow, Keras, PyTorch
- Data processing
- Data analysis

NEUROBIOLOGICAL Skills:

- Usage of Brain Atlas
- Eye and brain surgery
- Neurotracing
- Brain Injection

TECH Skills:

- Bio-sensor: Empatica E4; Pupil labs eye-tracker; Biograph Infinity; MEA – Multi Electrode Array; Biosignal Plux;
- Two Photon microscope and Optical microscopes
- 3D – printer and software design
- Arduino: UNO, DUE, NANO, MINI;
- Raspberry: Pi3, Pi4
- PC repair

Driving license:

- B/A2/A

Curricular Activities:

- Student educational activity on AI applications for primary and secondary scholls at 13th edition of RomeCup, the multy-event promoted by the Fondazione Mondo Digitale to promote young Italian talent and the innovation ecosystem in robotics, artificial intelligence and life science.

Extracurricular Activities:

- Scouting - Scout Squad at Agesci Roma 8 - Parish Christ Re
- Head of logistics at ''Good Game'' cultural association

Other interests:

- Travel (Europe, Asia, US, Africa)
- Sailing
- Hiking and Trekking
- Mechanics, Electronics, Chemistry, Psychology, Botanic, Astronomy, E-sports.