ANDREA CINA

BIOMEDICAL ENGINEER

PERSONAL INFORMATION

- Wassbergstrasse 41, 8127 Forch, CH
- 22/10/1992
- Italian
- andrea.cina92@gmail.com
- +39 349 5882322
- Andrea Cina
- GoogleScholar

GENERAL SKILLS

Programming
Python
LaTeX
Matlab
Bash
R

Operating Systems
Windows
Unix based

Software & Tools
Microsoft Office
Pytorch
Git
Singularity

Communication skills
Team work
Oral Presentation
Written reports

Organisational skills
Problem solving
Flexibility
Planning
Adaptability

Languages
Italian
English
French

WORK EXPERIENCE

09/2022 - present
ETH Zürich/Schulthess Klinik, Zürich (Switzerland)

PhD Candidate/Researcher

Activities:
- Deep Learning models to analyze medical images of the spine .
- Machine Learning and Data Analysis for surgery outcome prediction.
- Teacher Assistant for the course Foundations of Data Science.

07/2020 - 08/2022
CMP^{3}VdA - IIT, Aosta (Italy)

Research fellow

Activities:
- Development of ML algorithms for stratification of oncological patients on transcriptomic data.
- Development of classification algorithms on transcriptomic, genomic and clinical data.
- Development of a pipeline for the analysis of digitalized histological images (Hem-Eos; ki67staining).

04/2019 - 06/2022
IRCCS Galeazzi Hospital, Milan (Italy)

Researcher

Activities:
- Deep Learning models to analyze medical images of the spine .

11/2018 - 05/2020
K-tree srl, Milan (Italy)

Apprenticeship - Researcher

Activities:
- Research in the field of applied information technology in the medical field. - Development of IoT sensor to monitor patients

EDUCATION

09/2022 - present
ETH Zürich, Zürich

PhD Candidate HEST Department Biomedical Data Science Lab

03/2015 - 07/2017
Politecnico di Torino, Turin (TO) - Italy

Master's Degree in Biomedical Engineering (LM-21)

Thesis: "Predictive models for the evolution of aortic aneurysm". Supervisor: Luca Ridolfi

10/2011 - 03/2015
Politecnico di Torino, Turin (TO) - Italy

Bachelor's degree in Biomedical Engineering

TECHNICAL SKILLS

Machine Learning   HPC   Python   Data analysis   Artificial Intelligence   Clinical data   Genomics   Deep Learning   Research

- **Computer Vision**: Development of Deep Learning models in PyTorch to analyze medical images of the spine.
- **Data analysis**: Skilled in data manipulation and analysis using libraries such as numpy, scipy, pandas, and scikit-learn.
- **Imaging Analysis**: experienced in image processing and analysis utilizing tools like OpenCV and scikit-image.
- **Machine Learning Development**: Demonstrated ability to develop and implement machine learning algorithms in Python.
- **Scientific Research**: Proven capability in managing scientific research projects, including writing and publishing scientific papers.
- **Collaboration**: Successful collaboration with clinicians for the development of specialized tools in a research context.
- **Statistical Analysis**: Good statistical analysis skills, including the application of various statistical tests.
- **Containerisation and HPC**: Familiar with the use of containerisation systems such as Singularity, with the ability to use high-performance computing (HPC) systems effectively.

PUBLICATIONS AND CONFERENCES

Image annotation and curation in radiology: an overview for machine learning practitioners.

Galbusera, F., **Cina, A.** 📅 2024

European Radiology Experimental 8 (1), 11 🔗 doi

Comparing image normalization techniques in an end-to-end model for automated modic changes classification from MRI images.

Cina, A., Haschtmann, D., Dimitrios Damopoulos, D., Gerber, N., Loibl, M. Fekete, T., Kleinstück, F., and Galbusera, F. 📅 2024

Brain and Spine 4, 102738. 🔗 doi

Automatic calculation of cervical spine parameters using deep learning: development and validation on an external dataset.

Nakarai, H.& **Cina, A.**, Jutzeler, C., Grob, A., Haschtmann, D., Loibl, M., Fekete, T., Kleinstück, F., Wilke, HJ., Tao, Y., and Galbusera, F. 📅 2023

Global Spine Journal, 🔗 doi

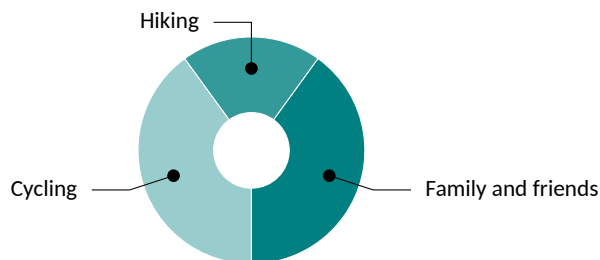2-step deep learning model for landmarks localization in spine radiographs.

Cina, A., Bassani, T., Panico, M., Luca, A., Masharawi, Y., Brayda-Bruno, M., and Galbusera, F. 📅 2021

Scientific Reports 🔗 doi

HOBBIES AND FREE TIME

CERTIFICATES

2011 - IELTS – level C1, score = 6

2014 - SolidWorks Associate certificate

2021 - GDPR and D.Lgs.231/2001 and L.190/12

2021 - Fundamentals of accelerated computing with Cuda Python