

LISA CUNEO

PROFESSIONAL EXPERIENCE

- Stage
Axpo,
Risk Management* Jun - Aug 2019 AXPO – Genova, Italy
Analysis of transactions to automatically check if their modification processes have been carried out in compliance with the policies.
Reference: Ing. Fabrizio PISCHEDDA · fabrizio.pischedda@axpo.com
- C.Co.C.
INSPIRE S.R.L.,
Start Up* Jan - Jun 2019 INSPIRE S.R.L – Genova, Italy
Applied scientific research that aims to create and test an innovative land monitoring system, through the use of drones. Creation of Matlab software for testing and demonstrating the identified algorithm.
Reference: Ing. Marco GHIO · m.ghio@be-inspire.com
- Internship
Axpo,
Risk Management* Mar - May 2019 AXPO – Genova, Italy
Validation of commodity prices coming from a model. Implementation of an algorithm to detect anomalies in historical series of forward market prices.
Reference: Ing. Fabrizio PISCHEDDA · fabrizio.pischedda@axpo.com

EDUCATION

- Post Doc in
Microscopy and
Machine Learning* 2024-On going Istituto Italiano di Tecnologia (IIT) – Genova, Italy
I'm part of the *Molecular Microscopy and Spectroscopy* and *Computational Statistics and Machine Learning* groups of the Istituto Italiano di Tecnologia (IIT) under the supervision of Giuseppe VICIDOMINI and Massimiliano PONTIL.
- PhD in Physics
and Nanosciences* 2020-2024 Università degli studi di Genova & IIT – Genova, Italy
I'm part of the *Nanoscopy & NIC@IIT* group of the Istituto Italiano di Tecnologia under the supervision of Prof. Alberto DIASPRO.
Graduation date: 16/05/2024
- Erasmus+
Traineeship
Aalto University,
NBE* Sep. 2019 - Feb. 2020 AALTO UNIVERSITY – Helsinki, Finland
Analysis of different on-scalp sensors arrays in order to optimize the source localization in MEG inverse problem.
Reference: Lauri PARKKONEN · lauri.parkkonen@aalto.fi
- Masters of Applied
Mathematics* 2017-2020 Università degli studi di Genova – Genova, Italy
Thesis Title: *An inverse problem perspective on the optimal design of sensor arrays for on-scalp MEG.*
Supervisors: Prof. Alberto SORRENTINO and Prof. Lauri PARKKONEN
Final degree mark: $110/110$ cum laude
Graduation date: 25/03/2020
- Bachelor of
Mathematics* 2014-2017 Università degli studi di Genova – Genova, Italy
Thesis Title: *Numeric study of spatial resolution of EEG through ordinary least squares problems.*
Supervisor: Prof. Alberto SORRENTINO
Final degree mark: $102/110$
Graduation date: 15/11/2017

PUBLICATIONS

- Published* Medical Image Analysis
Hunting imaging biomarkers in pulmonary fibrosis: Benchmarks of the AIIB23 challenge.
Guang YANG, Michail MAMALAKIS, Lisa CUNEO, Francesco PRINZI, Gianluca CARLINI et all
DOI: <https://doi.org/10.1016/j.media.2024.103253>.
- Published* Biophysical Journal
Remodeling of the nuclear landscapes and epigenome during retro-transformation of neuroblastoma cells mediated by the non-coding RNA NDM29
Francesca BALDINI, Lama ZEAITER, Lisa CUNEO, Paolo BIANCHINI, Laura VERGANI, Aldo PAGANO, Alberto DIASPRO
DOI: <https://doi.org/10.1016/j.bpj.2023.11.561>.
- Published* Biochimica et Biophysica Acta (BBA) - Molecular and Cell Biology of Lipids
Nuclear and chromatin rearrangement associate to epigenome and gene expression changes in a model of in vitro adipogenesis and hypertrophy.
Francesca BALDINI, Lama ZEAITER, Farah DIAB, Hawraa ZBEEB, Lisa CUNEO, Aldo PAGANO, Piero PORTINCASA, Alberto DIASPRO, Laura VERGANI
DOI: <https://doi.org/10.1016/j.bbalip.2023.159368>.
- Published* IL NUOVO CIMENTO
An automated tool to estimate chromatin compaction in stained nuclei.
Lisa CUNEO, Marco CASTELLO, Francesca BALDINI, Alberto DIASPRO
DOI: <https://doi.org/10.1393/ncc/i2022-22193-5>.
- Published* IL NUOVO CIMENTO
Investigating nanoscale chromatin alterations involved in neuroblastoma transformation by optical nanoscopy.
Francesca BALDINI, Isotta CAINERO, Lisa CUNEO, Michele ONETO, Elena GATTA, Chantal USAI, Aldo PAGANO, Laura VERGANI, Alberto DIASPRO
DOI: <https://doi.org/10.1393/ncc/i2022-22191-7>.
- Published* IL NUOVO CIMENTO
A deep learning-based method to spectrally separate overlapping fluorophores based on their fluorescence lifetime.
Lisa CUNEO, Marco CASTELLO, Simonluca PIAZZA, Irene NEPITA, Isotta CAINERO, Giorgio TORTAROLO, Luca LANZANÒ, Paolo BIANCHINI, Giuseppe VICIDOMINI, Alberto DIASPRO
DOI: <https://doi.org/10.1393/ncc/i2023-23130-x>.
- Published* La rivista del nuovo cimento
Emerging Mueller matrix microscopy applications in biophysics and biomedicine.
Alberto DIASPRO, Paolo BIANCHINI, Fabio CALLEGARI, Lisa CUNEO, Riccardo MARONGIU, Aymeric LE GRATIET, Ali MOHEBI, Marco SCOTTO, Colin J. R. SHEPPARD
DOI: <https://doi.org/10.1007/s40766-023-00046-5>.
- Conference proceedings* EPJ Web Conf. Volume 287, EOS Annual Meeting (EOSAM), September 2023
The Artificial Microscope.
Alberto DIASPRO, Paolo BIANCHINI, Lisa CUNEO
DOI: <https://doi.org/10.1051/epjconf/202328713012>.
- Conference proceedings* The Italian Physical Society - Proceedings of the International School of Physics "Enrico Fermi"
- Volume 210: Multimodal and Nanoscale Optical Microscopy - pp. 143 – 145 - September 2023
Scattering Networks: a tool to remove the background.
Lisa CUNEO, Simone CIVITA, Paolo BIANCHINI, Alberto DIASPRO
DOI: <https://doi.org/110.3254/ENFI230014>.
- Conference proceedings* Biophysical Journal 122 (3) pp. 462a February 2023
A deep learning method to separate fluorophores based on their fluorescence lifetime.
Lisa CUNEO, Marco CASTELLO, Simonluca PIAZZA, Irene NEPITA, Luca LANZANÒ, Paolo BIAN-

CHINI, Giuseppe VICIDOMINI, Alberto DIASPRO
DOI: <https://doi.org/10.1016/j.bpj.2022.11.2483>.

- Conference proceedings* Biophysical Journal 121 (3) pp. 476a February 2022
Decrypting nanoscale chromatin architecture alterations implicated in neuroblastoma transformation by optical nanoscopy.
Francesca BALDINI, Isotta CAINERO, Lisa CUNEO, Irene NEPITA, Chantal USAI, Paolo BIANCHINI, Laura VERGANI, Aldo PAGANO, Alberto DIASPRO
DOI: <https://doi.org/10.1016/j.bpj.2021.11.402>.
- Conference proceedings* Biophysical Journal 121 (3) pp. 362a February 2022
Investigating the role of chromatin compaction at the nanoscale in Hutchinson-Gilford progeria syndrome using expansion microscopy
Chantal USAI, Isotta CAINERO, Lisa CUNEO, Francesca BALDINI, Matteo MARIANGELI, Irene NEPITA, Paolo BIANCHINI, Alberto DIASPRO
DOI: <https://doi.org/10.1016/j.bpj.2021.11.938>.
- Conference proceedings* Technical Digest Series (Optica Publishing Group), paper JTh5A.111 November 2021
An Automated Tool to Analyse 3D Fluorescence Images of Stained Nuclei.
Lisa CUNEO, Francesca BALDINI, Marco CASTELLO, Irene NEPITA, Simonluca PIAZZA, Laura VERGANI, Alberto DIASPRO
DOI: <https://doi.org/10.1364/FIO.2021.JTh5A.111>.
- In preparation* IEEE Pattern Analysis and Machine Intelligence
A deep learning method to separate overlapping fluorophores based on fluorescence lifetime.
Lisa CUNEO, Federico SICILIANO, Marco CASTELLO, Simonluca PIAZZA, Marco SCOTTO, Isotta CAINERO, Alberto DIASPRO
- In preparation* Frontiers in Bioinformatics Single-Molecule Image Analysis
Removing background in single molecule localization microscope using spatio-temporal information.
Lisa CUNEO, Simone CIVITA, Luca RATTI, Ivan TRAPASSO, Paolo BIANCHINI, Alberto DIASPRO
- AWARDS**
- Challenge* MICCAI AIB23-Task 1 Segmentation: Airway-Informed Quantitative CT Imaging Biomarker for Fibrotic Lung Disease. Position: 8/20.
Link: [Task1](#)
- Challenge* MICCAI AIB23-Task 2 Binary classification: Airway-Informed Quantitative CT Imaging Biomarker for Fibrotic Lung Disease. Position: 4/6.
Link: [Task2](#)
- Travel Grant* SIBPA (Società Italiana di Biofisica Pura e Applicata) grant for 1500€ to participate at the BPS (BioPhysical Society) annual meeting at San Diego, California, USA.
- Best communication* The communication with title "An automated tool to estimate chromatin compaction in stained nuclei" was selected by the Scientific Committee for the Best Communications of 107° Congresso SIF.
- Best communication* The communication with title "Scattering Networks: a tool to remove the background" was selected by the Scientific Committee for the Best Flash talk of International School of Physics "Enrico Fermi" summer school "Multimodal and Nanoscale Optical Microscopy".
- Best communication* The communication with title "A deep learning-based method to spectrally separate overlapping fluorophores based on their fluorescence lifetime." was selected by the Scientific Committee for the Best Communications of 108° Congresso SIF.

COMPUTER SKILLS

Advanced: MATLAB, Python, L^AT_EX, Excel
Intermediate: R, Office, SQL
Basic: C++, Java

LANGUAGE SKILLS SOFT SKILLS

Mothertongue: ITALIAN
B2: ENGLISH

- *Abstract Thinking*
- *Problem Solving*
- *Lateral Thinking*
- *Teamwork*

August 28, 2024