Department of Physics and INFN group

Capability pitch, AI on clinical data

- we can support in the *development of AI tools* (e.g. LungQuant/U-net) for the analysis of *clinical data* (lung tumor, neuro-muscular diseases, COVID, polyposis/sinusitis, glioblastoma, head-neck tumor….)
- our skills range from *automatic classification to segmentation* of *medical images*, up to the construction of *explainable models (explainable AI)* for greater transparency and trust in the healthcare context

Available data and resources

- Clusters/computers from UNIPV and *National Institute of Nuclear Physics (INFN)*, local workstations
- *Medical Images* data from collaborations with Hospitals (S. Matteo, Mondino, Policlinico Milano, INFN national collaborators)

Collaborations

We collaborate with *UNIPV* groups, *national and international research groups* and *with clinical structures*

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We look for challenges in :

- Structured clinical data and medical images (radiology, histopathology, etc.)
- Problems requiring *classification, segmentation or predictive analysis*
- *Explainability* needs for AI integration *in clinical practice*

Problem pitch

- What is the most suitable ML/DL/NN ***model for*** analyzing ***small data set*** ?
- What we can do to acquire ***multicenter data*** ?
- ***GANs*** (Generative Adversarial Networks) reliability for images : ?? (ex : from CT ⇒ MRI)

Also within the ***International Center for Advanced Computing in Medicine (ICAM) - UNIPV***

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