The technology transfer in Healthcare 4.0: the use of Machine Learning solutions for neurodegenerative diseases

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«Artificial intelligence and its first and second cousins, machine learning and robotic process automation, will fundamentally change how almost everyone working in hospitals and health systems will do their jobs in the future.»

American Hospital Association, 2019
Artificial intelligence has the potential to revolutionize healthcare and help address some of these challenges, above all those related to neurodegenerative diseases which nowadays represent the challenge for Healthy and Active Ageing.

By 2050, one in four people in Europe and North America will be over the age of 65 – this means the health systems will have to deal with more patients with complex needs. The management of these patients is expensive and requires systems to “shift from an episodic care-based philosophy to one that is much more proactive and focused on long-term care management”

FROM: McKinsey and Company, Transforming healthcare with AI - EIT HEALTH
Deep learning for neurodegenerative diseases: the brain-gap

Measuring the difference between the chronological age of a patient and the brain age (the “brain gap”), estimated on the basis of specific age-related features (such as cortical atrophy), allows the early detection of neurodegenerative processes.

N. Amoroso, M. La Rocca, S. Bruno, T. Maggipinto, A. Monaco, R. Bellotti, and S. Tangaro for the Alzheimer’s Disease Neuroimaging Initiative
Neuroimaging and deep learning

Exploiting deep learning, it is possible to implement a pipeline for brain age prediction.
The pipeline implemented for neurodegenerative diseases using AI and deep learning approach, will be transferred and valorized in order to become a tangible innovation for predicting neurodegenerative diseases, within the framework of 4P Medicine.
Research Results Transfer and Valorization

Through research results valorization the Universities promote the dissemination and use of new technologies developed at the research organizations in order to increase the impact of the research for all the stakeholders;

TT in UNIBA/POLIBA has the purpose to transfer technologies out from the university for the benefit of the health and wealth of society.

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Technology Transfer in Healthcare 4.0

Pipeline implemented for neurodegenerative diseases using AI

Channel to transfer
- Disclosure
- patenting & licensing
- Research contract
- Spin off or start up
- Consultancy
- ...

Users
- Patients
- Big company
- Hospitals
- Policy makers
- SMEs
- ...

SUSTAINABLE IMPACT & WELLBEING
Grazie

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