Biophotonics & Artificial Intelligence School

Scuola di Biofotonica e Intelligenza Artificiale

Settembre 5 - 9, 2022 – Firenze

Programma

Lunedì 5 Settembre 2022

10:40-11:10	**Benvenuto e introduzione alla scuola**
11:10-12:00	Sara Tombelli (IFAC-CNR) *Molecular recognition elements for biosensing: artificial intelligence for their selection and target-binding prediction*
12:00-12:50	Cosimo Trono (IFAC-CNR) *Fluorescence and label free optical sensing: conventional methods and contribution from artificial intelligence*
12:50-14:20	**Pausa pranzo**
14:20-15:10	Riccardo Cicchi (INO-CNR) *Advanced optical microscopy and imaging techniques*
15:10-16:00	Stefano Diciotti (UniBo) *Introduzione all'intelligenza artificiale*
16:00-16:30	**Pausa caffè**
16:30-17:20	Stefano Diciotti (UniBo) *Introduzione all'intelligenza artificiale*
17:20-18:10	Chiara Marzi (IFAC-CNR) *Buone pratiche per il machine learning*
18:10-19:00	***Datathon***

Martedì 6 Settembre 2022

09:00-09:50	Michela Baccini (UniFi) *Machine Learning*
09:50-10:40	Michela Baccini (UniFi) *Machine Learning*
10:40-11:10	**Pausa caffè**
11:10-12:00	Giacomo Mazzamuto (INO-CNR) *Large-scale imaging and feature extraction using advanced high-resolution microscopy techniques*
12:00-12:50	Elisa Michelini (UniBo) *From biosensors to internet of biosensors*
12:50-14:20	**Pausa pranzo**
14:20-15:10	Simone Marinai (UniFi) *Clustering e apprendimento non supervisionato*
15:10-16:00	Simone Marinai (UniFi) *Clustering e apprendimento non supervisionato*
16:00-16:25	Sara Colantonio (ISTI-CNR) Trustworthiness and transparency in AI development
16:25-19:00	***Datathon***

Mercoledì 7 Settembre 2022

09:00-09:50	Andrea Farina (IFN-CNR, PoliMi) *Computational Imaging for biomedical optics: applications to multispectral fluorescence lifetime imaging and diffuse optical tomography*
09:50-10:40	Martina Banchelli (IFAC-CNR) *Surface Enhanced Raman Scattering investigation of Alzheimer's biomarkers with the use of machine learning*
10:40-11:10	**Pausa caffè**
11:10-12:00	Simone Marinai (UniFi) *Clustering e apprendimento non supervisionato*
12:00-12:50	Simone Berneschi (IFAC-CNR) *Whispers of Light: a bridge between Biophotonics and Artificial Intelligence*
12:50-14:20	**Pausa pranzo/Presentazione poster**
14:20-15:10	Alessandro Mecocci (UniSi) *Convolutional Learning - a Recap and Beyond!*
15:10-16:00	Alessandro Mecocci (UniSi) *Convolutional Learning - a Recap and Beyond!*
16:00-16:50	Chiara Marzi (IFAC-CNR) *Validazione efficace dei modelli di machine learning*
16:50-19:00	***Datathon***

Giovedì 8 Settembre 2022

09:00-09:50	Pietro Ferraro (ISASI-CNR) *Flow-Cytometry and Holography Microscopy empowered by AI to achieve high-throughput and quantitative single cell analysis*
09:50-10:40	Alberto Diaspro (UniGe, IIT) *The thinking microscope. A multimodal optical approach boosted by artificial intelligence*
10:40-11:10	**Pausa caffè**
11:10-12:00	Alessandro Mecocci (UniSi) *Convolutional Learning - a Recap and Beyond!*
12:00-12:50	Alessandro Mecocci (UniSi) *Convolutional Learning - a Recap and Beyond!*
12:50-14:20	**Pausa pranzo**
14:20-15:10	Kristen M. Meiburger (PoliTo) *Photoacoustic imaging and the role of artificial intelligence*
15:10-16:00	Duccio Fanelli (UniFi, LENS) *Machine learning in spectral domain*
16:00-16:25	Lucia Cavigli (IFAC-CNR) *PhotonHub Europe: la tecnologia fotonica e le opportunità per le imprese*
16:25-16:50	Laura Burzagli e Valentina Colcelli (IFAC-CNR) *Ethics Guidelines for Trustworthy AI*
16:50-19:00	***Datathon***

Venerdì 09 Settembre 2022

09:00-09:50	Pietro Liò (University of Cambridge) *Lectio Magistralis: A perspective on Artificial Intelligence and Medicine*
09:50-10:40	Presentazione dei risultati dei gruppi di lavoro
10:40-11:10	**Pausa caffè**
11:10-12:30	Presentazione dei risultati dei gruppi di lavoro
12:30-13:00	**Chiusura della scuola**