



Science for Dialysis 4: Complex data representation and modeling, algorithm optimization and computational power for a Personalized Medicine.

Wednesday, 5th of May, 2021. Hospital Universitari de Bellvitge.

#BellvitgeDialysisAI

Session description

Data science is a challenge for modern medicine and dealing with it requires a joint effort with a multidisciplinary approach. Renal care is, by itself, a complex domain and, these days, a source of Big Data full of challenges in which academic researchers may become solution providers. Data analysis is usually based on techniques designed for linear phenomena applied to systems characterized by non-linearity and in constant change. Thus, modeling the complexity is a major challenge that requires powerful tools. This year, the "Science for Dialysis 4" meeting aims to be a meeting point to communicate advances in Big Data research with new methodologies, new algorithms, systems, applications and solutions for complex problems in renal care. In light of the current Covid-19 situation, the meeting will be broadcast on Youtube live stream.

Objectives of the Meeting

- 1- Narrow the gap between rapid technological progress in data acquisition and functional characterization of complex biomedical information.
- 2- Offer new knowledge on integrative platforms, Cloud Computing, Stream Computing, and analysis of data flows in real-time.

The topics of the following talks will be discussed:

Modelling algorithm optimization and Knowledge extraction from predictive models: Application of machine learning and Deep Learning Techniques to nephrology.

Guest speaker: *José Ibeas*. Nephrology Department. Parc Taulí Hospital Universitari. Institut de Investigació i Innovació Parc Taulí I3PT.

High performance computing (HPC) solutions and hardware innovations for bigdata handling.

Guest speaker: *Alfonso Valencia*. Barcelona Supercomputing Center.

- 09⁰⁰ Opening**
Evelyn Shaw, Deputy Director of Hospitalization Process and Patient Management. Bellvitge Hospital.
Josep M Cruzado. Nephrology Department.
- 10⁰⁰ Introduction to the meeting**
Miguel Hueso. Nephrology Department.
- 10³⁰ Application of Machine Learning Techniques to nephrology**
José Ibeas. Nephrology Department. Parc Taulí Hospital
- 11³⁰ Modelling the complexity in health systems.**
Alfredo Vellido/Karina Gibert. IDEAI-UPC
- 12⁰⁰ Hardware innovations for bigdata handling**
Alfonso Valencia. Barcelona Supercomputing Center.
- 13⁰⁰ Virtual Roundtable discussion between the audience and speakers.**

Chairs

Miguel Hueso, Dialysis Unit. Nephrology Department.
Hospital Universitari Bellvitge. L'Hospitalet de Llobregat.

Alfredo Vellido, Intelligent Data Science and Artificial Intelligence (IDEAI-UPC) Research Center. Universitat Politècnica de Catalunya (UPC Barcelona Tech).



Watch the presentation on this Youtube [link](#)

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