5G for Genomics

Satellite Event of the Flagship Conference IEEE NetSoft2017

7th July 2017, University of Bologna, Italy

5G will be much more than a next generation mobile infrastructure beyond 4G.

5G will be an end-to-end network and service platform integrating seamlessly computing, storage and networking functions: main features includes transparent (fixed/mobile) ultra-broadband connectivity, with higher bandwidth and lower latency, flexible and programmable network services, machine learning and artificial intelligence capabilities, advanced levels of security and privacy.

5G will change radically the Telecommunications landscape in the next few years bringing unprecedented opportunities for the Digital Society and the Digital Economy: new ecosystems will emerge including Internet of Things, Industry 4.0, Cloud Robotics, Precision Agriculture, E-health, Personalized Medicine, etc.

Main scope of the satellite event "5G for Genomics" is sharing views on how 5G will provide flexible and dynamic network, processing and storage services for supporting Genomics research and innovation activities.

In fact, Next Generation Sequencing and ICT, at lowering costs, are creating the conditions for radical breakthroughs in Medicine and Biology: there are increasing needs of flexible and cost-effective network solutions for programmable services allowing accessibility, security, retrieval and processing of Genomic data. 5G could meet these requirements boosting advances in Genomics, with far reaching socio-economic implications for the Digital Society .

Agenda

09:15 – 09:30   **Welcome** - A. *Manzalini, PhD (TIM) and E. Rizzi, PhD (Fondazione Telethon)*

09:30 – 09:45   **5G services for Genomics and future Medicine -** A. *Manzalini, PhD (TIM)*

09:45 – 10:15   **Genomics research of genetic disorders: diagnosis and cure from Fondazione Telethon** - *Ermanno Rizzi, PhD (Fondazione Telethon)*

10:15 – 10:45   **Exploitation of data production, analysis and integration in translational Medicine** - *Prof. Rita Casadio (Bologna Biocomputing Group, University of Bologna)*

10:45 – 11:00   Coffee break

11:00 – 11:30   **Management and characterization of next-generation genomic data on a microservices architecture based on graph databases** - *Mattia D'Antonio, PhD, (CINECA, Roma)*

11:30 – 12:00   **Big data in Genomics and precision Medicine** - *Dr. Andrea Cavalli (IIT)*

12:00 – 12:30   **Personalized Medicine begins with new technologies** – *Andrea Calabria, PhD (San Raffaele Telethon Institute for Gene Therapy)*

12:30 – 13:00   **Brainstorming and closing remarks**

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