**Scuola di Dottorato in ICT**

**PhD School in ICT**

**Research project for a PhD curriculum in ICT – Computer Engineering and Science**

**Tutor**: Prof. Domenico Beneventano

**(\*) Italian Co-tutor:** Prof. Sonia Bergamaschi

**(\*\*) Foreign Co-tutor:** Dr. NANA MBINKEU Rodrigue Carlos   
 (University of Yaoundé I, Cameroon)

**Proposed Title of the research:** Using Big Data for healthcare analytics applications

**Keywords: (5)**

Big Data, Big Data Integration, Healthcare, Large Medical datasets, big data analytics

**Research objectives: --(max 10 rows)**

Big Data has changed the way we manage, analyze and leverage data in any industry. One of the most promising areas where Big Data can be applied to make a change is healthcare.

The data extracted from electronic medical records are sometimes unstructured and varies enormously. Making meaningful analytical use of these data is no simple matter. The main challenge is getting data into the system in a meaningful form so that we can analyse it. And the next step, Big Data tools with innovative approach will be help to understand as much about a patient as possible based on their medical records to prevent serious illness at an early enough stage so that treatment is more simple and less expensive. So, the idea is to study how to apply big data analytics techniques to seek out patterns that predict from historic data what your future health outcomes are likely to be, but also to diagnose existing conditions earlier and thereby improve outcomes for patients.

**Proposed research activity --(max 10 rows)**

1. Designing and implementing a Big Data infrastructure for managing and analyzing electronic medical records and securing it from non-authorized people.
2. Predicting outbreaks of epidemics and avoiding preventable diseases ;
3. analyzing check-up results among people in different demographic groups and identifying what factors discourage people from taking up treatment.
4. Identifying correlation between deseases ;
5. Identify correlation between past treatments and future deseases.

**Collaboration with**: Prof. Fosso Wamba (Toulouse Business School, France)