BIOE DISTINGUISHED SEMINAR

Big Data Analysis in   Medicine

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The term "Big Data" refers to the amalgamation and processing of huge data sets that are composed of different data types (e.g. clinical, genomic, imaging, pathological, etc.) and have rapidly become more massive and complex, particularly with the advent of new technologies. Big Data within the context of biomedical research is a major problem that needs to be solved due to substantial increases in the amount of medical data routinely generated and collected by healthcare providers over the last two decades. A recent PubMed search for the term "big data" yields 1470 entries, with the earliest occurring in 2003. A breakdown by year shows the majority of publications are from 2012 or later. In 2011, the McKinsey Global Institute issued a 156-page report titled "Big data: The next frontier for innovation, competition, and productivity". This report indicated $300 billion in potential annual value in Big Data to health care in the U. S., with a shortage of 140,000 to 190,000 individuals with the required deep analytical skills, indicating a need for programs to train the next generation of scientists with the necessary skill set to deal with all aspects of Big Data.

ABOUT THE SPEAKER

Ayman El-Baz, Ph.D., Professor, Distinguished University Scholar, and Chair of Bioengineering Department at the University of Louisville, KY. Dr. El-Baz earned his bachelor's and master degrees in Electrical Engineering in 1997 and 2001. He earned his doctoral degrees in electrical engineering from the University of Louisville in 2006. In 2009, Dr. El-Baz was named a Coulter Fellow for his contribution in the biomedical translational research. In 2018, Dr. El-Baz was named an American Institute for Medical and Biological Engineering (AIMBE) Fellow for outstanding achievement in medical imaging and outstanding leadership in education, scholarship, and service to the field of bioengineering.

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