Scientific English Course Academic Year : 2019-2020

3rd year Licence Level Realised by: Dr.O Behadada

Academic Reading text example1

Use the strategy of Reading Academic text on the following text

Computer science plays a fundamental role in many biological fields, mainly due to the advent of new technologies that produce a vast amount of data which requires a continuous development of new technologies and methods for their analysis. Research areas such as bioinformatics and computational biology have been deeply influenced by this revolution, and several challenges, which require the adoption of computer science methods for their solution, have emerged. More precisely, bioinformatics has started to play a central role in several fields like genomics, transcriptomics, interactomics, and metagenomics, mainly thanks to the introduction of new sequencing technologies which have, on the one hand changed the nature of the data to be analyzed and, on the other hand, opened new directions of research. In order to tackle these new needs, novel methods and approaches, requiring the knowledge of both theoretical and applied aspects of computer science, have been developed. Moreover, although the main focus of computational biology was on modelling and simulating biological processes, the advent of the developed technologies, contributed to make these two disciplines closer and related each other. Several areas of computer science are employed to tackle the

emerging challenges in the life science domain, ranging from high-performance computing to theoretical aspects, or from artificial intelligence to data structures. In particular, these new approaches are likely to involve computational methods, technologies, and infrastructures, such as:

•high-performance architectures and systems (e.g., multicore, GPU);

•distributed computing (e.g. grid, cloud, peer-to-peer);

•computational simulation (mechanistic, stochastic, multi-model);

•algorithms (theoretical and experimental aspects);

•applied bioinformatics (analysis pipelines, tools, applications);

•artificial and computational intelligence (machine learning, agents, evolutionary techniques, bio-inspired methods).

From : 9thWorkshop on Biomedical and Bioinformatics Challenges for Computer Science – BBC2016 Stefano Beretta, Mario Cannataro, and Mauro Castelli

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