

Project:

Metabolism Epigenetics Distribution of Information in Chromosomes (MEDIC)

Main Focus (IT)

1. Solution - A public website for data visualization
2. Users - Students and scientists focused on biomedical research

What

1. Genetic information is distributed on different chromosomes
2. Each function (biological) is executed by a few nodes working together (biological reactions)
3. Environment impacts which (biological) information is available for use
4. Metabolism and epigenetics networks (a sub-set of total database) are critical in diseases such as cancer and diabetes

Why

Localization of each (biological) information unit (gene) is known but network information is not easily visualized from available datasets. Though many information units are the same going from simple to complex systems they are distributed differently in the genome (biological database). Understanding how the same information is distributed differently in simple and complex systems can help in understanding functional evolution in biology.

Whom

Presentation and visualization of information related to metabolism and epigenetics will help synthetic and systems biology research community in assessing impact of information distribution in biological systems and designing new experiments by engineering allocation of information in the networks.

Expected Outcome

MEDIC - publicly available data visualization tool for metabolism and epigenetics information

Conditions

Any outcomes produced by the student team under and within the framework of the Software Project and any transferable intellectual property rights related thereto, incl. all the economic rights of the author and rights to protect intellectual property are transferred to the Institute of Technology, University of Technology from the moment of creating them.

Benefits

We expect any outcome to be publicly available through either an open source licensing or a scientific publication in which the team will be duly credited.

Contact:

Rahul Kumar (rahul.kumar@ut.ee)