EECS 730: Introduction to Bioinformatics Final Project

You are expected to select one of the following topics (or any bioinformatics-related topics that you are interested in; please contact instructor for consent), independently conduct literature study, and write a mini-review on the topic. The mini-review should have **no less than 3,000 words**. You are welcome and encouraged to discuss with the instructor regarding the final project anytime throughout the entire semester.

The mini-review is due on **May 14th, 2021 11:59PM**. Please submit your mini-review (in PDF or MS Word format) via the Blackboard System. It counts for **40%** towards the final grade.

Below is a collection of topics for the final project:

(Again, notice that you are allowed to select another topic if none of the following topics interests you; please contact the instructor for consent if you wish to choose an alternative topic.)

- Stochastic context-free gramma and RNA secondary structure modeling (Svoren, Michael David)
- RNA 3D structural motif search and clustering (Paspuleti, Sahithi Reddy)
- RNA-RNA interaction prediction (Boddi Reddy, Sushmitha)
- RNA-protein interaction prediction (Gajurel, Kamala)
- microRNA target prediction (Niang-Trost, Tevin Terrel)
- Sequence motif finding problem (Vemulapalli, Likitha)
- Phylogenetic reconstruction (Bajjuri, Mugdha)
- Burrows-wheeler transformation (BWT) in fast sequence alignment (Xuan, Hao)
- Genome-wide association study (Daffalla, Alaa)
- *De novo* sequence assembly (Hayet, Ishrak)
- Epigenetics and CHIP-seq (Gichohu, Antonette)
- Chromatin structure determination and functional implication (Damaraju, Sai)
- Metagenomics and metatranscriptomics (Peduri, Madhu)
- Biological pathway and network analysis (Paudel, Pramil)
- Mass spectrometry and proteomics (Vidhyashanka, Rakshitha)
- Gene ontology (Sandhagala Francis, LAZARUS)
- Statistical inference of gene differential expression (Pippalla, Chiranjeevi)
- Vaccine (Fritz, Anna Rose)
- Protein structure prediction (Lee, In Kyu)
- deep learning for COVID-19 detection (Zhang, Tianxiao)

Evaluation:

- Whether the information is correct and complete
- Whether the information is up-to-date
- Whether the information is disseminated in a concise and logical way
- Whether previous work is properly cited
- Whether the figure and table illustrations are straightforward and artistic
- Whether the formatting of the review is proper and tidy
- Whether small errors/typos are present

Please send email to instructor at cczhong@ku.edu to reserve your topic by **Mar 19th, 2021**; topics are assigned first-come-first-serve. Please entitle your email with "**EECS 730 final topic preference**". If I did not receive your preference by the time, a random topic will be assigned to you by **Mar 22nd, 2021**.