Algorithms in Genome Research
Winter 2024 / 2025

Exercises

Number 12, Discussion: 2025 January 31

1. Discuss the differences between an open and a closed pangenome.

    - What are the implications of the openness of a pangenome?
    - Draw the Venn diagrams of an open and a closed pangenome.
    - Hand-draw a graph of #genes vs #sampled_genomes for an open pangenome.

2. Discuss the similarities and differences between a variation graph and a colored de Bruijn graph.

3. Given the following three sequences. Construct their compacted colored de Bruijn graph of dimension k = 5.

    - CGGCTTGTCATGGTC
    - TGTATGGTCCCTGG
    - CGGCTTGTATCCCTGGT

4. Find a variation graph that represents the same set of strings. Is it unique? Is it always the case?