

3DGenBench: A web-server to benchmark computational models for 3D Genomics

Modeling 3D genome organisation has been booming in the last years thanks to the availability of experimental datasets of genomic contacts. However, the field is currently missing the standardisation of methods and metrics to compare predictions and experiments. We present 3DGenBench, a web server available at <https://inc-cost.eu/benchmarking/>, that allows benchmarking computational models of 3D Genomics. The benchmark is performed using a manually curated dataset of 39 capture Hi-C profiles in wild type and genome-edited mouse cells, and five genome-wide Hi-C profiles in human, mouse, and Drosophila cells. 3DGenBench performs two kinds of analysis, each supplied with a specific scoring module that compares predictions of a computational method to experimental data using several metrics. Using 3DGenBench, the user obtains model performance scores, allowing an unbiased comparison with other models. 3DGenBench aims to become a reference web server to test new 3D genomics models and is conceived as an evolving platform where new types of analysis will be implemented in the future.

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