

WeDNA

an oxDNA simulation interface

THIS PROJECT

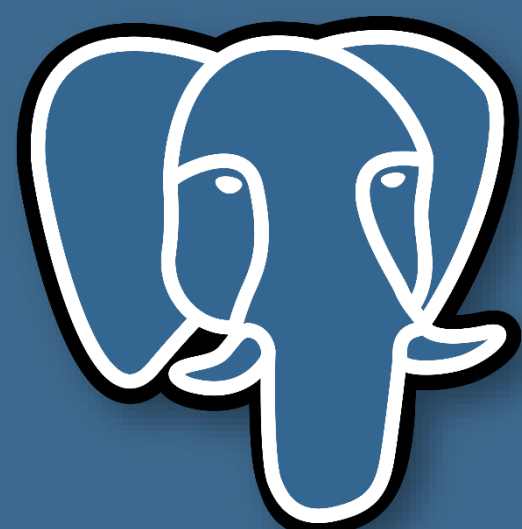
oxDNA is a widely-used molecular dynamics simulation software. While powerful, it's prohibitively difficult for non-programmers to use. We have built a web-based user interface, called *WebDNA*, that exposes the immediately useful information, such as simulation **configuration**, **visualization**, and **analysis** to the average researcher. With this project, we hope to have made a useful and user-friendly tool for efficiently and effectively running and analyzing DNA simulations.

ENABLING TECHNOLOGIES

These technologies are the building blocks that make WebDNA work as well as it does.



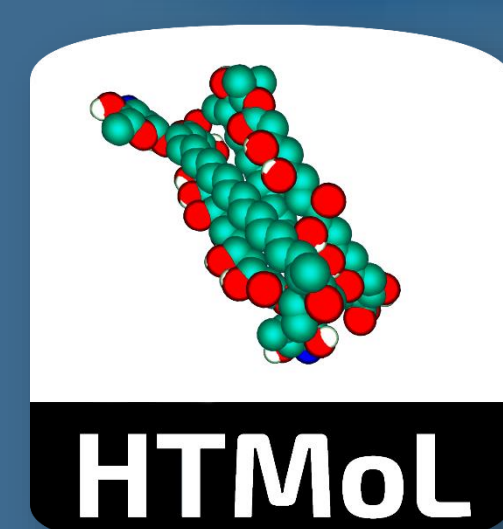
Django & Python
Server-side REST API
and oxDNA Execution Server



PostgreSQL
Database Management
System



Angular
Front-end Web
Application Platform



HTMoL
HTML Embeddable
Simulation Frame

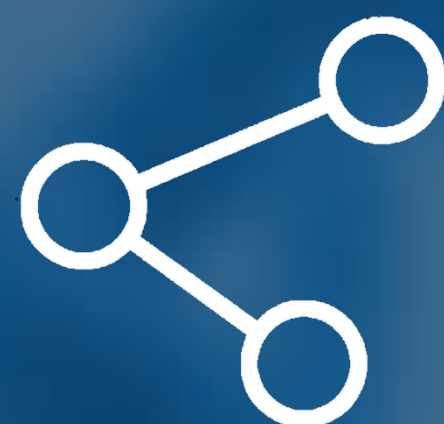
FEATURES



Take advantage of the rich feature-set of oxDNA with **no programming requirements**! We've provided researchers with the ability to set simulation configuration options using a web-based GUI. These options are then sent off to the server to perform the requested oxDNA simulation.



Once results are ready, play back the simulation using the integrated **HTMoL** molecular visualization software. This visualization is generated directly from **.pdb** files provided by oxDNA at different steps in the simulation.



The final feature we've provided is the ability to run various **analysis scripts** on your results. Our site hosts a variety of default analysis scripts provided by oxDNA, as well as the ability for users to **upload their own scripts** to be executed on the server securely.

TEAM

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