

EXPERIMENTING WITH FIASCO FOR PROTEIN STRUCTURE PREDICTION.

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- Fragment-based Interactive Assembly for protein Structure prediction with CONstraints
- C++ constraint solver
- F. Campeotto (UniUD, NMSU)
- A. Dal Palù (UniPR)
- A. Dovier (UniUD)
- F. Fioretto (UniUD, NMSU)
- E. Pontelli (NMSU)

EXPERIMENTING WITH FIASCO

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Tool: github.com/MatteoDusefante/Java-GUI/

- Interactive GUI
- Multiagent prediction secondary structure
- Constraint solving with fragment assembly

EXPERIMENTING WITH FIASCO

CoCos (CONCURRENT CONSTRAINT SYSTEM)

- Secondary structure prediction
- Multiagent based
- Local search
- GPU powered (neighborhood, consistency, energy computation)
- Outputs feasible 3D structure

[1] F. Campeotto, A. Dovier, E. Pontelli. Protein Structure Prediction on GPU. A Declarative Approach in a Multi-agent Framework. ICPP 2013.

EXPERIMENTING WITH FIASCO

FIASCO

- Constraint solving for 3D structures
- Fragment assembly
- Propagators for spatial constraints

[1] F. Campeotto, A. Dal Palù, A. Dovier, F. Fioretto, E. Pontelli. A Constraint Solver for Flexible Protein Models. *Journal of Artificial Intelligence Research*, 48:953-1000, 2013.

[2] A. Dal Palù, A. Dovier, F. Fogolari, E. Pontelli. Exploring Protein Fragment Assembly Using CLP. *IJCAI 2011*

SPECIAL TRACK C ONSTRAINTS IN BIOINFORMATICS

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EXPERIMENTING WITH FIASCO

DEMO!