Yuexi (Tracy) Chen

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EDUCATION

University of Maryland, College Park *Sept 2017 - present*
Ph.D. Computational Biochemistry
Principle Advisor: Prof. David Fushman, Department of Chemistry & Biochemistry
Co-advisor: Prof. Max Leiserson, Department of Computer Science

University of Science and Technology of China (USTC), Hefei *Sept 2013 - June 2017*
B.S. Materials Science and Engineering
Core Courses: Programming Design, Computational Methods, Linear Algebra, Multivariable Calculus, Partial Derivative Equations, Probability Theory, Electromagnetism, Quantum Mechanics

AWARDS

Outstanding Student Scholarship (First Prize, 3%), USTC *2015*
Outstanding Student Scholarship (Third Prize, 20%), USTC *2014, 2016*
Merit Student of Sichuan Province (0.1%), China *2013*

RESEARCH EXPERIENCE

Laboratory of Molecular Biophysics, UMD *Sept 2017 - present*
Advisor: Prof. David Fushman
· Developed a pipeline to integrate Residual Dipolar Coupling (RDC) and Small Angle Scattering(SAS) profile matrix of intrinsically disordered proteins to predict conformation ensembles. Narrowed the gap between experiment and prediction data by applying hierarchical clustering and matrix transforming techniques.

Leiserson Research Group, UMD *Sept 2017 - present*
Advisor: Prof. Max Leiserson
· Implemented a dimension-reduction algorithm to integrate protein-protein interaction networks from heterogeneous sources, applied gradient descent method to optimize feature vectors.
· Studied protein-protein interactions between T cell receptors and Major Histocompatibility Complex (MHC), trained a classifier in peptide presentation based on Supporting Vector Machine (SVM).

Laboratory for Modeling of Exciton Kinetics in Complex Systems, USTC *March 2015 - Nov 2015*
Advisor: Prof. Jun Jiang
· Investigated the mechanism behind the photocatalyst $g - C_3N_4 - BiOCl$ in the reaction of RhB degradation. Established the computational model, and calculated the energetic, electronic and optical properties.

PROJECTS

ROTDIF: A Web server for Comprehensive Analysis of Biomolecular NMR Relaxation Data
Science Gateways Community Institute, Summer Intern, June 2018 - Aug 2018
· Developed a web server for researchers to analyze NMR data in different magnetic fields simultaneously, including powerful tools for ab initio prediction of rotational diffusion tensors and protein docking. The program is based on GenApp technology for scientific gateways (https://genapp.rocks) funded by NSF.

Data Analysis of Defected Drugs Recalled by FDA between 2012-2017
Course Project: Data Analysis and Modeling in Ecology and Environmental Life Sciences, Winter 2018
· Parsed and curated raw data from openFDA (https://open.fda.gov/), conducted survival analysis of process of recalling defected drugs, revealed the correlation between drug classification and recall durations.

SKILLS

Python, R, Java, JavaScript, MATLAB, C/C++, LaTeX

TEACHING

CHEM 132, UMD *Fall 2017, Spring 2018*
The English Study and International Exchange Center, USTC *Sept 2016 - June 2017*

SERVICE AND ACTIVITIES

Hostess, The 5th Graduate Symposium on Chemistry and Materials Science, USTC *April 2016*
Volunteer, The 15th International Congress of Quantum Chemistry *June 2015*
Member, The Varsity Tennis Team, USTC *Sept 2014 - June 2017*