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EDUCATION

Ph.D. Electronic Engineering, 2013 (GPA: **4.05**/4.3)
City University of Hong Kong
Supervisor: Prof. Hong Yan

B.E. Information Engineering (Talented student program), 2008 (GPA: **3.43**/4)
South China University of Technology

PROFESSIONAL EXPERIENCE

Postdoctoral Fellow (11/2013-present)
Department of Biostatistics
Johns Hopkins Bloomberg School of Public Health
Supervisor: Prof. Hongkai Ji

Postdoctoral Fellow (09/2013-11/2013)
Department of Electronic Engineering
City University of Hong Kong
Supervisor: Prof. Hong Yan

RESEARCH INTERESTS

Bioinformatics; **Biostatistics**; **Genomics; Big data; Computational biology**; **Pattern recognition**; **Image processing.**

CURRENT PROJECTS

1. Big data modelling for predicting functional genomic data.
2. Reconstructing transcriptional regulatory network from transcriptome and regulome data.
3. Computational tools for predicting and analyzing single cell genomic data.

JOHNS HOPKINS
BLOOMBERG SCHOOL
of PUBLIC HEALTH

PUBLICATIONS

Total citation from google scholar: 90 (since 2011)
Refereed Journal Articles

Zhou, W., Ji, Z. & Ji, H. Global Prediction of Chromatin Accessibility Using RNA-seq from Small Number of Cells. bioRxiv (2016).

Zhou, W. et al. Genome-wide Prediction of DNase I Hypersensitivity Using Gene Expression. bioRxiv (2016).

Jin, K. et al. HOXB7 Is an ERα Cofactor in the Activation of HER2 and Multiple ER Target Genes Leading to Endocrine Resistance. Cancer. Discov. 5, 944-959 (2015). [contribution: Perform statistical and computational analysis of data]

Wang, D., **Zhou, W.** & Yan, H. Mining of protein-protein interfacial residues from massive protein sequential and spatial data. *Fuzzy Sets Syst.* (2015).

Wang, D. D., **Zhou, W.**, Yan, H., Wong, M. & Lee, V. Personalized prediction of EGFR mutation-induced drug resistance in lung cancer. *Scientific Reports* **3** (2013).

Yang, X., **Zhou, W.**, Wang, D. D., Wu, Q. & Yan, H. A Survey on Structural Analysis of Nucleosome Core Particles. *Current Bioinformatics* **8**, 112-132 (2013).

Zhou, W., Yan, H., Fan, X. & Hao, Q. Prediction of Protein-Protein Interactions Based on Molecular Interface Features and the Support Vector Machine. *Current Bioinformatics* **8**, 3-8 (2013).

Zhu, Y., **Zhou, W.**, Dai, D. & Yan, H. Identification of DNA-Binding and Protein-Binding Proteins Using Enhanced Graph Wavelet Features. *IEEE/ACM Transactions on Computational Biology and Bioinformatics (TCBB)* **10**, 1017-1031 (2013).

Guan, P. P., **Zhou, W.** & Yan, H. The relationship between geometric patterns of hydrogen bonds and periodic dinucleotides in nucleosome structures. *J. Theor. Biol.* **313**, 136-141 (2012).

Zhou, W. & Yan, H. Alpha shape and Delaunay triangulation in studies of protein-related interactions. *Briefings in Bioinformatics* (2012).

Zhou, W., Yan, H. & Hao, Q. Analysis of surface structures of hydrogen bonding in protein-ligand interactions using the alpha shape model. *Chemical Physics Letters* **545**, 125-131 (2012).

Wu, Q., **Zhou, W.**, Wang, J. & Yan, H. Correlation between the flexibility and periodic dinucleotide patterns in yeast nucleosomal DNA sequences. *J. Theor. Biol.* **284**, 92-98 (2011).

Zhou, W. & Yan, H. Prediction of DNA-binding protein based on statistical and geometric features and support vector machines. *Proteome science* **9**, 1-6 (2011).

Zhou, W. & Yan, H. Relationship between periodic dinucleotides and the nucleosome structure revealed by alpha shape modeling. *Chemical Physics Letters* **489**, 225-228 (2010).

Zhou, W. & Yan, H. A discriminatory function for prediction of protein-DNA interactions based on alpha shape modeling. *Bioinformatics* **26**, 2541-2548 (2010).

Refereed Conference Papers

Zhou, W., Wang, D. & Yan, H., "Prediction of anti-EGFR drug resistance base on binding free energy and hydrogen bond analysis", *2013 IEEE Symposium on Computational Intelligence in Bioinformatics and Computational Biology*, Singapore, April 2013.

Zhou, W. & Yan, H., "Analysis of Ligand Binding Sites Using Alpha Shapes", *2012 IEEE International Conference on System, Man, and Cybernetics*, Seoul, Korea, October 2012.

Zhou, W., Yan, H., Fan, X. & Hao, Q., "Prediction of protein-protein interactions using alpha shape modeling", *2011 International Symposium on Computational Models for Life Sciences*, Toyama City, Japan, October 2011, pp 244-252.

Zhou, W. & Yan, H., "Prediction of DNA-binding protein based on alpha shape modeling", *2010 IEEE International Conference on Bioinformatics and Biomedicine*, **BIBM**, Hong Kong, December 2010, pp 23-28.

Zhou, W., Xu, X. & Huang, W., "Shape and Boundary Analysis for Classification of Breast Masses", *2008 International Symposium on Computational Intelligence and Design*, Wuhan, China, October 2008, Vol. 2, pp 42-46.

Tang, X., Xu, X., **Zhou, W.** & Mao, Y., "A Novel Semantic based CAD System for Mammography", *2008 International Conference on Computer Science and Information Technology*, Singapore, August 2008, pp 97-101.

Poster presentation

Zhou, W., Du, F., Bai, J., Ying M., Laterra J. & Ji, H., "Computational prediction of cistrome with application to stem cells", *The 7th Annual Maryland Stem Cell Research Symposium*, Silver Spring, MD, USA, December 2014.

Conference presentation

Zhou, W. & Ji, H., "Big Data Regression and Prediction in Functional Genomics", *The 2015 INFORMS Annual Meeting*, Philadelphia, PA, USA, November 2015.

Patent Applications

Zhou, W., & Yan, H., "METHODS FOR MODELING AND ANALYSIS OF INTERFACE BETWEEN POINT PATTERNS", US Patent Application 20130024175, publication date: January 24, 2013.

PROFESSIONAL ACTIVITIES

Reviewer The Eleventh Asia Pacific Bioinformatics Conference, 2013
The Tenth Asia Pacific Bioinformatics Conference, 2012
Proteome Science, Nuclear Acid Research, Nature Methods, Nature Communications, IEEE Transactions on NanoBioscience.

TEACHING ACTIVITIES

2012 **Teaching assistant** in EE5806: Topics in Image Processing
City University of Hong Kong

2011 **Teaching assistant** in EE2000: Logic Circuit Design
2010 City University of Hong Kong

2010 **Teaching assistant** in EE3206: Java Programming & Applications
City University of Hong Kong

ACADEMIC HONORS & AWARDS

Research Tuition Scholarships (2009-2010, 2010-2011, 2011-2012), Chow Yei Ching School of Graduate Studies, City University of Hong Kong, Hong Kong.

Outstanding Academic Performance Award for Research Degree Students (2009-2010, 2010-2011, 2011-2012), Chow Yei Ching School of Graduate Studies, City University of Hong Kong, Hong Kong.

Postgraduate Studentship (2009-2013), University Grants Committee, Hong Kong.