

Junwen Wang, Ph.D.

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ACADEMIC EXPERIENCE

Postdoctoral Researcher: Center for Bioinformatics & Department of Genetics, *University of Pennsylvania* School of Medicine, Philadelphia, PA (2004-present).
Working with Dr. Sridhar Hannenhalli on *Gene Regulation*, developing *novel Markov models* for core promoter identification. *Positional Specific Propensity model* for Transcriptional Start Site localization, and *novel hidden Markov model* for transcriptional module detection.

Postdoctoral Fellow: Center for Biotechnology & Department of Chemistry, *Temple University*, Philadelphia, PA (2001-2003).
Worked with Dr. Jan Feng on *Protein Folding*, developed *novel Sequence Alignment Algorithm* for twilight-zone alignment, protein structure and crystallization data *Pattern Exploration* and *Protein-Protein Interaction*.

Research Assistant: Institute for Food Engineering, School of Fisheries, *University of Washington*, Seattle WA (1997-2000).
Studied under the supervision of Dr. George Pigott on *seafood processing, fish nutrition and bioprocess modeling and optimization*.

Teaching Assistant: Course: *Aquatic Food Engineering*, University of Washington (winter, 1998).
An advanced Food Engineering course offered to senior undergraduates and graduates taught by Dr. George Pigott. I was responsible for the lab section and two lectures, heat transfer and proteolysis of fish waste.

Teaching Assistant: Course: *Food Chemistry*, Wuxi University of Light Industry (fall, 1994).
An introduction course to second year undergraduate students taught by Professor Jan Tang. I was responsible for one lecture involved in flavor chemistry, and grading task for the whole class.

PROFESSIONAL EXPERIENCE

Software Engineer: *RawHide Internet Service Inc.*, Toledo, OH (2000-2001).
Projects designed and developed:

- A *virtual client* application with special proxy and server functionalities on Windows NT platform using *Java™ 2 networking* and *multi-thread* technology.
- A *flight by night* program that accomplished for SCJD2 under Windows and Unix platform, this is an airline reservation system that needs implementation of both server side and client side applications, as well as a simple database. Java Swing, RMI and Threading were used in this project.
- An *XML viewer* that parses an XML file to Swing tree by SAX, extracts tree node information to Swing table, and writes the table to relational database.

Project Leader and Food Researcher: *PepsiCo Food International*, Shanghai, China (1995-1997)

- Development and launch of *new products* of frying and extrusion processes. Optimizing production process to reduce *cost* and achieve best *quality*.
- Trained and taught plant technicians for production quality control, manufacture monitoring and critical point assessment.
- Technical support for three plants in Shanghai, Guangzhou and Tian Jing, PR China.

EDUCATION

PhD(2000): *Fisheries/Food engineering*;

Thesis Title: Modeling and optimization of hydrolysis of Atlantic salmon (*Salmo salar*) tissue;
Advisor: Dr. George M. Pigott.

Graduate minor in *Global Trade, Transportation & Logistic (GTTL)*,
University of Washington, Seattle, WA. GPA 3.8/4.0.

MS(1995): *Food Science/Biotechnology*; Wuxi University of Light Industry, Wuxi, China.

BE(1993): *Food Engineering*; Huazhong Agricultural University, Wuhan, China.

CERTIFICATION

Gene Microarray Certificate by Great Philadelphia Bioinformatics Alliances. June 2003.

Sun Certified *Java Developer (SCJD2)* by Sun Microsystems, July 2001.

Sun Certified *Java Programmer (SCJP2)* by Sun Microsystems, Nov., 2000.

Global Trade, Transportation & Logistic Certificate (20 credits) by UW, Aug., 2000.

Seafood Processing and HACCP Training Certificate by UW, April, 1998.

PUBLICATION

1. **Wang, J.** and Feng, J-A. 2004. NdPASA: A novel pair-wise protein sequence alignment that incorporates neighbor-dependent amino acid propensities. *Proteins: Structure, Function, and Bioinformatics*, in press.
2. Rupp, B. and **Wang, J.** 2004. Predictive models for protein crystallization. *Methods: A Companion to Methods in Enzymology*, 34:390-407.
3. **Wang, J.** and Feng, J-A. 2003. Exploring the sequence patterns of α -helices in proteins. *Protein Engineering*, 16(11):799-807.
4. **Wang, J.** Modeling and optimization of hydrolysis of Atlantic salmon (*Salmo salar*) tissue. Doctoral Dissertation, University of Washington, Seattle, WA. 2000.

IN PREPARATION

5. **Wang, J.** and Hannenhalli, S. 2005a. Improvement of promoter identification by a generalized interpolated Markov model. Submitted to *Genome Research*.
6. **Wang, J.** and Hannenhalli, S. 2005b. A novel Markov chain method that improves CpG associated human promoter identification by valley scores.
7. **Wang, J.** and Hannenhalli, S. 2005c. PSPA: a novel positional specific propensity based model for pinpointing eukaryotic Transcriptional Start Site. Preparing for submission to *Science*.
8. Jin, R. and **Wang, J.** 2005. PAM matrix revisit, a codon-based matrix and its derived amino acid substitution matrix that improve the protein and genomic sequence alignment.

POSTER

9. **Wang, J.** and Hannenhalli, S. Pinpoint the transcriptional start site in human DNA by novel Markov models. Greater Philadelphia Bioinformatics Alliance, 2nd Annual Retreat, Oct. 2004
10. Han, H. and **Wang, J.** Application of neural network in alignment algorithm selection. Greater Philadelphia Bioinformatics Alliance, 1st Annual Retreat, Oct. 2003.
11. **Wang, J.**, Gu, Z. and Feng, J-A. A fold recognition server based on intermediate PSI-BLAST search, SCOP database and filter algorithms. Greater Philadelphia Bioinformatics Alliance, 1st Annual Retreat, Oct. 2003.

TALKS & PRESENTATIONS

The 3rd annual Biomedical Postdoc Research Symposium, University of Pennsylvania, Oct. 2004.
Greater Philadelphia Bioinformatics Alliance, 2nd Annual Retreat, Oct. 2004.
Center for Bioinformatics, University of Pennsylvania. Nov. 2003.
Department of Computer Science & Engineering, University of Buffalo. Nov. 2003.
TB Structural Genomics Consortium, Lawrence Livermore National Laboratory. Nov. 2003

MEMBERSHIPS

Member of Sigma Xi
Member of ISCB (International Society for Computational Biology)
Member of SAPA (Sino-American Pharmaceutical Professionals Association)
Member of IFT (Institute of Food Technologists) (1998 – 2002)
President of CSSA (Chinese Students and Scholars Association) (1998 – 1999)

HONORS

Puget Sound Institute of Food Technologists Scholastic Award (1998)
Claire & Egtvedt Fellowship (1997).

REFERENCES

Sridhar Hannenhalli, Ph.D. (postdoctoral advisor)

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Jan Feng, Ph.D. (postdoctoral advisor)

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Department of Chemistry
Temple University
Phone: (215)204-7128
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E-mail: feng@astro.temple.edu

George M. Pigott, Ph.D., P.E. (Ph.D. advisor)

President, Sea Resource Engineering, Inc
Professor Emeritus, *University of Washington*
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Bernhard Rupp, PhD (collaborator)

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