

DR. PENGYU HONG

Education/Training

- B.S. 1995 Computer Science. Tsinghua University, Beijing, China.
- M.S. 1997 Computer Science. Tsinghua University, Beijing, China.
- Ph.D. 2001 Computer Science. University of Illinois at Urbana-Champaign, Illinois, USA.
- Post-doc 2002-2004. Department of Statistics. Harvard University, USA.
- Post-doc 2004-2005. Department of Statistics. Stanford University, USA.

Appointments

07/2011 – present	Associate Professor, Computer Science, Brandeis University, Waltham, MA, USA.
08/2005 – 06/2011	Assistant Professor, Computer Science, Brandeis University, Waltham, MA, USA.
05/2002 – 08/2002	Visiting scientist, IBM T. J. Watson Research Lab, Hawthorne, NY, USA.
05/2000 – 08/2000	Summer Intern, Microsoft Research.
05/1999 – 08/1999	Summer Intern, Microsoft Research.
05/1998 – 08/1998	Summer Intern, Bell Labs, Lucent.

Other Professional Experience

2007	Local Chair. IEEE 7th International Symposium on Bioinformatics and Bioengineering.
2007	Committee. International Conference on Machine Learning: Models, Technologies and Applications.
2008	Committee. International Conference on Machine Learning.
2010	Session Chair. ISCA International Conference on Bioinformatics and Computational Biology.
2010	Committee. IEEE International Workshop on Healthcare Informatics Services
Reviewer:	NIH, NSF, BBSRC, Lytmos, Cell, Nature Methods, Nucleic Acids Research, Genome Biology, Bioinformatics, BMC Bioinformatics, PLoS Computational Biology, PloS One, Elsevier Methods, IEEE PAMI, IEEE TCAD, IEEE/ACM TCBB, Statistics in Medicine, Image and Vision Computing, Pattern Recognition Letters, Pattern Recognition, International Journal of Environmental Research and Public Health, Plant Physiology, Medical Image Analysis.

Honors

1999	Beckman Institute Graduate Fellowship, University of Illinois at Urbana-Champaign
2000	Ray Ozzie Fellowship, University of Illinois at Urbana-Champaign
2000	Fourth place at the V. Dale Cozad Business Plan Competition
2006	Invited Speaker: Symposium on Image Analysis, Harvard Medical School
2006	Invited Speaker: 2006 Workshop on Multiscale Biological Imaging, Data Mining & Informatics, Santa Barbara, CA.
2007	Schiff Fellowship, Brandeis University
2009	Invited Speaker: The 7th International Bioinformatics Workshop 2009.

Publications

Journal:

- Bei Y. and Hong P. (in press) A Novel Approach to Minimize False Discovery Rate in Genome-Wide Data Analysis. *BMC Genomics*.
- Schulte J., Sepp K. J., Wu C., Hong P., Littleton J. T. (2011). High-Content Chemical and RNAi Screens for Suppressors of Neurotoxicity in a Huntington's Disease Model. *PLoS One*, 6(8):e23841.
- Friedman AA., Tucker G., Singh R., Yan D., Vinayagam A., Hu Y., Binari R., Hong P., Sun X., Porto M., Pacifico S., Murali T., Finley Jr. R. L., Asara J. M., Berger B., Perrimon N. (2011). Proteomic and Functional Genomic Landscape of Receptor Tyrosine Kinase and Ras to Extracellular Signal-Regulated Kinase Signaling. *Science Signaling* 4(196).
- Shang Y., Haynes P., Pérez N., Harrington K. I., Guo F., Pollack J., Hong P., Griffith L. C., and Rosbash M. (2011). Imaging analysis of clock neurons: light buffers the wake-promoting effect of dopamine. *Nature Neuroscience*, 14, 889–895.
- Warner J. L., Anick P., Hong P., and Xue N. (2011). Natural Language Processing and the Oncologic History: Is There a Match? *Journal of Oncology Practice* 7(4):e15-e19.
- Li L., Karabacak N.M., Cobb J.S., Wang Q., Hong P., Agar J.N. (2010). Memory-efficient calculation of the isotopic mass states of a molecule. *Rapid Communications in Mass Spectrometry*. 24(18):2689–2696.
- Wu C., Schulte J., Sepp K.J., Littleton T.J., and Hong P. (2010). Automatic Robust Neurite Detection and Morphological Analysis of Optical Microscopy Neuron Cell Culture Images in High-Content Screening. *Neuroinformatics*. DOI 10.1007/s12021-010-9067-9.
- Schulte J., Sepp K., Jorquera R., Wu C., Song Y., Hong P., and Littleton J.T. (2010). DMob4/Phocein regulates synapse formation, axonal transport, and microtubule organization. *Journal of Neuroscience*. 30(15): 5189-5203.
- Schoemans R., Aigrot M. S., Wu C., Marée R., Hong P., Belachew S., Josse C., Lubetzki C. and Bours V. (2010). Oligodendrocyte development and myelinogenesis are not impaired by high concentrations of phenylalanine or its metabolites. *Journal of Inherited Metabolism Disease*. DOI 10.1007/s10545-010-9052-3.
- Sun X. and Hong P. (2009). Automatic Inference of Multicellular Regulatory Networks Using Informative Priors. *International Journal of Computational Biology and Drug Design*. 2(2):115 – 133.
- Karabacak N.M., Li L., Tiwari A., Hayward L.J., Hong P., Easterling M.L., and Agar A.N. (2009). Sensitive and specific identification of wild-type and variant proteins from 8 to 669 kDa using top-down mass spectrometry. *Molecular & Cellular Proteomics*. 8(4):846-56.
- Li L., Kresh J.A., Karabacak N.M., Cobb J.S., Agar J.N., and Hong P. (2008). A Hierarchical Algorithm for Calculating the Isotopic Fine Structures of Molecules. *Journal of the American Society for Mass Spectrometry*. 19(12):1867-1874.
- Zhou R., Hotta I., Denli A.M., Hong P., Perrimon N., and Hannon G.J. (2008). Comparative Analysis of Argonaute-Dependent Small RNA Pathways in Drosophila. *Molecular Cell*. 32(4):592-9.
- Sepp K.J., Hong P., Lizarraga S.B., Liu J.S., Mejia L.A., Walsh C.A., Perrimon N. (2008) Identification of neural outgrowth genes using genome-wide RNAi. *PLoS Genetics*. 4(7):e1000111.
- Sun X, Hong P. Computational Modeling of *C. elegans* Vulval Induction. (2007). *Bioinformatics*. 23(13):i499-i507.

- Kulkarni M.M., Booker M., Silver S.J., Friedman A., Hong P., Perrimon N., Mathey-Prevot B. (2006). Evidence of off-target effects associated with long dsRNAs in *Drosophila melanogaster* cell-based assays. *Nature Methods*. 3(10):833-838
- Hong P., Liu X.S., Zhou Q., Lu Q., Liu J.S., and Wong W.H. (2005). A boosting approach for motif modeling using ChIP-chip Data. *Bioinformatics*, 21:2636-2643.
- Hong P. and Wong W.H. (2005). GeneNotes: A novel information management software for biologists. *BMC Bioinformatics*. 6:20.
- Hong P., Zhong S., and Wong W.H. (2005). Towards Ubiquitous Bio-information Computing: Data Protocols, Middleware, and Web service for Heterogeneous Bio-information Integration and Retrieval. *International Journal Software Engineering and Knowledge Engineering, special issue on Software and Knowledge Engineering Support in Bioinformatics*. 15(3):475-485.
- Hong P. and Huang T.S. (2004). Spatial pattern discovery by learning a probabilistic parametric model from multiple attributed relational graphs. *Journal of Discrete Applied Mathematics*. 130:113-135.
- Hong P., Wen Z., and Huang T.S. (2002). Real-time speech-driven expressive synthetic talking faces using neural networks. *IEEE Transaction on Neural Networks*. 13(4):916-927.
- Hong P., Wen Z., and Huang T.S. (2001). IFACE: A 3D synthetic talking face. *International Journal of Image and Graphics*. 1(1):19-26.

Conference:

- Bei Y. and Hong P. Significance Analysis by Minimizing False Discovery Rate. *The IEEE International Conference on Bioinformatics and Biomedicine*, Philadelphia, USA. October 2012.
- Sun X., Hong P., Kulkarni M., Kwon Y., and Perrimon N. An Advanced Method for Identifying Protein-Protein Interaction by Analyzing TAP/MS Data. *The IEEE International Conference on Bioinformatics and Biomedicine*, Philadelphia, USA. October 2012.
- Anick, P., Hong P., Xue, N. & Yang, Y. Coreference resolution for electronic medical records. *Proceedings of the 2011 i2b2/VA/Cincinnati Workshop on Challenges in Natural Language Processing for Clinical Data*. Washington, DC. 2011.
- Anick P., Hong P., Xue N., & Anick D. I2B2 2010 Challenge: Machine Learning for Information Extraction from Patient Records. *Fourth i2b2/VA Shared-Task and Workshop Challenges in Natural Language Processing for Clinical Data*, Washington, DC. November 2010.
- Lin C., Hong P., Bakal C., & Perrimon N. Novel Morphological Phenotypes Discovery in High-Content Screens Using Underused Features. *International Conference on Bioinformatics and Computational Biology* 2010.
- Sun X and Hong P. Improving Automatic Inference of the Biological Network Governing *C. elegans* Vulval Induction by Incorporating Interaction Data. *Biocomp* 2008.
- Lin C, Mak W, Hong P., Sepp K, Perrimon N. Intelligent Interfaces for Mining Large-Scale RNAi-HCS Image Databases, *IEEE International Symposium on Bioinformatics and Bioengineering*. 2007.
- Hong P., Sepp KJ, et al. Intelligent Interfaces for Interactive Analysis of High-Content Cellular Images. *Frontiers in Live Cell Imaging*, NIH, Bethesda, MD. 2006.

- Hong P, Zhong S, Wong WH. Towards Ubiquitous Bio-information Computing: Data Protocols, Middleware, and Web service for Heterogeneous Bio-information Integration and Retrieval. *IEEE 4th Sym. on Bioinformatics and Bioengineering*. 2004.
- Chai J, Hong P, and Zhou MX. A Probabilistic Approach to Reference Resolution in Multimodal User Interface. *International Conference on Intelligent User Interfaces*, Madeira, Portugal, 2004.
- Chai J, Hong P, Zhou M, and Prasov Z. Optimization in Multimodal Interpretation. *The 42nd Annual Conference of Association of Computational Linguistics*, Barcelona, Spain. 2004.
- Chai J, Prasov Z, and Hong P. Performance Evaluation and Error Analysis for Multimodal Interpretation in Conversational Systems. *In Proceedings of HLT-NAACL*, Boston, MA. 2004.
- Hong P and Huang TS. Inexact spatial pattern mining. *Workshop on Discrete Mathematics and Data Mining*. 2002.
- Hong P, Wen Z, Huang TS, and Shum HY. Real-time speech-driven 3D face animation. *International Symposium on 3D Data Processing Visualization Transmission*, Padova, Italy. June 2002.
- Hong P and Huang TS. Multimodal temporal pattern mining. *International Conference on Pattern Recognition*. 2002.
- Huang TS and Hong P. Exemplar-based face and facial motion tracking. *International Conference on Acoustics, Speech, and Signal Processing*, 2002.
- Hong P and Huang TS. Unsupervised temporal pattern extraction and association. *International Conference on Acoustics, Speech, and Signal Processing*, 2002.
- Hong P and Huang TS. Learning the isomorphic sub-graph from multiple attributed relation graphs. *IWCIA and ENTCS* 2001.
- Hong P, Wen Z, and Huang TS. An integrated framework for face modeling, facial motion analysis and synthesis. *ACM Multimedia* 2001.
- Hong P, Wen Z, and Huang TS. Real-time speech-driven avatar with constant short time delay. *EUROIMAGE ICAV3D* 2001.
- Hong P, Wen Z, Huang TS, and Chan MT. Speech-driven avatars. *Army Research Lab Symposium* 2001.
- Hong P, Tian Q, and Huang TS. Incorporate support vector machines to content-based image retrieval with relevant feedback. *IEEE International Conference on Image Processing*, Vancouver, Canada, Sep. 10-13, 2000.
- Hong P and Huang TS. Learning to extract multi-temporal signal patterns from a temporal signal sequence. *International Conference on Pattern Recognition*, Barcelona, Spain, Sep 3-7, 2000.
- Hong P, Turk M, and Huang TS. Constructing finite state machines for fast gesture recognition. *International Conference on Pattern Recognition*, Barcelona, Spain, Sep 3-7, 2000.
- Huang TS, Cohen I, Hong P, and Li Y. IA3: intelligent affective animated agents. *International Conference on Image and Graphic Technology toward 21 Century and Beyond*, Tianjin, China, August 16-18, 2000.
- Tian Q, Hong P, and Huang TS. Update relevant image weights for content-based image retrieval using support vector machines. *IEEE International Conference on Multimedia and Expo*, Hilton New York & Towers, New York, NY, July 30 - Aug. 2, 2000.

- Hong P, Wang R, Huang TS. Learning patterns from images by combining soft decisions and hard decisions. *IEEE Conference on Computer Vision and Pattern Recognition*, Hilton Head Island, South Carolina, June 13-15, 2000.
- Hong P, Turk M, and Huang TS. Gesture modeling and recognition using finite state machines. *IEEE International Conference on Automatic Face and Gesture Recognition*, March 28-30, 2000, Grenoble, France.
- Hong P and Huang TS. Extracting the recurring patterns from image. *Asian Conference on Computer Vision*, Jan. 5-8, 2000, Taipei, Taiwan.
- Hong P, Ray SR, and Huang TS. A new scheme for extracting multi temporal sequence patterns. *International Joint Conference on Neural Networks*, July 10-16, 1999, Washington DC. USA.
- Hong P, Huang TS, and Lin X. Mouth motion learning and generating from observations. *IEEE Workshop on Multimedia Signal Processing*, Dec. 7-9, 1998, Los Angeles, California, USA.

Book chapter contributions:

- Wen Z, Hong P, Tu J, and Huang TS. (2003) Learning 3D Face Deformation Models: Methods and Applications. in *3D Modeling and Animation: Synthesis and Analysis Techniques for the Human Body*, Idea Group Inc., Hershey, PA 17033, USA.
- Hong P, Wen Z, Huang TS. (2002) Speech-driven face animation. in *MPEG-4 Facial Animation - The Standard, implementations and applications*, John Wiley & Sons, ISBN 0-470-84465-5.
- Hong P, Wen, Z, Li Y, and Huang TS. (2000) Avatars. in *Computer Science Handbook of the Army Research Lab*, ADID FedLab.

Patent:

- US 2006/0085414 – System and methods for reference resolution