

Curriculum Vitae

NAME: HUA XU

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EDUCATION

Ph.D. in Biomedical Informatics Columbia University, New York, NY	2008
M.Phil. in Biomedical Informatics Columbia University, New York, NY	2007
M.S. in Computer Science New Jersey Institute of Technology, Newark, NJ	2001
B.S. in Biochemistry Nanjing University, Nanjing, P. R. China	1998

ACADEMIC APPOINTMENTS

2008 – Present Assistant Professor, Department of Biomedical Informatics, Vanderbilt University Medical Center, Nashville, TN

PROFESSIONAL ORGANIZATIONS

- American Medical Information Association (AMIA) 2005 – Present
- The Association for Computational Linguistics (ACL) 2005 – Present

PROFESSIONAL ACTIVITIES

Intramural:

- Academic Program Committee of Biomedical Informatics

Extramural:

- Editorial Board Member, International Journal of Data Mining and Bioinformatics, 2010–present
- Program Committee:
 - American Medical Informatics Association (AMIA) Translational Bioinformatics Summit, 2011

- IEEE Conference on Healthcare Informatics, Imaging, and System Biology (HISB), 2011
- International Conference on Intelligent Computing, 2011
- International Biomedical Informatics Summit at Peking University, 2011
- Journal Reviewer, including Bioinformatics, Journal of American Medical Informatics Association, BMC Bioinformatics, Journal of Biomedical Informatics, Journal of Biomedical Discovery and Collaboration, Methods of Information in Medicine,
- Conference Reviewer, including ACL BioNLP Workshop (2007), Symposium on Languages in Biology and Medicine (LBM) (2007), AMIA (2007-2010)

Honors/Awards:

- National Library of Medicine Training Fellowship, 2007-2008
- Homer R. Warner Award, AMIA Fall Symposium, 2009
- Distinguished Paper Award (co-author), AMIA Fall Symposium, 2009
- 2nd best system, i2b2 NLP challenge, 2009
- 2nd best system in Concept Extraction task, i2b2 NLP challenge, 2010

Invited Talks:

- University of Kansas, Department of Electrical Engineering and Computer Science, "*Natural Language Processing in the Biomedical Domain*", 2008
- Arizona State University, Department of Biomedical Informatics, "*A Framework for Handling Biomedical Abbreviations*", 2008
- Ohio State University, Department of Biomedical Informatics, "*A Framework for Handling Biomedical Abbreviations*", 2008
- Peking University, China, Center of Medical Informatics, "*Research and Education in Medical Informatics at Vanderbilt University*", August 2010
- Shanghai Center for Bioinformation Technology, China, "*Research and Education in Medical Informatics at Vanderbilt University*", August 2010
- Medical University of South Carolina, Department of Biochemistry, "*Facilitating EMR-based Pharmacogenetic Studies using Informatics Methods*", October 2010

TEACHING ACTIVITIES**Courses:**

- BMIF-330 Machine Learning for Biomedicine, co-instructor, 2009
- BMIF-315 Methodological Foundations of Biomedical Informatics, lecturer, 2009, 2010

Research Advisor:

- Son Doan, PhD, 2009–2010, NLP technologies in clinical text
- Mei Liu, PhD, 2009–present, EMR-based Pharmacovigilance and Pharmacogenomics
- Samir AbdelRahman, PhD, 2010-present, Natural Language Processing of Clinical Text – grammar induction and parsing
- Yonghui Wu, PhD, 2010-present, Biomedical Literature Mining and Abbreviation Disambiguation

Thesis Committee Member for

- Xinxin Zhu, PhD, Columbia University, 2009
- Jerome Jourquin, MS, Vanderbilt University, 2010
- Firas Wehbe, PhD Candidate, Vanderbilt University, 2009 - present

RESEARCH PROGRAM**Current Grants:**

- NLM R01LM010681 (PI) "Real-time disambiguation of Abbreviations in Clinical Notes", \$1,167,083, 05/31/2010 – 5/30/2013
- NCI R01CA141307 (PI) "An In-silico Method for Epidemiological Studies Using Electronic Medical Records", \$1,053,644, 09/03/2009 – 07/31/2011
- NHGRI U01 HG004603 (Co-investigator, PI - Dan Roden), VGER – Vanderbilt Genomic Electronic Medical Records, 09/28/2007 – 07/31/2011
- NIH RC2GM092618 (Co-investigator, PI - Dan Masys & Dan Roden), VESPA - Vanderbilt Electronic Systems for Pharmacogenomic Assessment, 09/30/2009 – 08/31/2011
- NHLBI U19HL065962 (Co-investigator, PI - Dan Roden), Pharmacogenomics of Arrhythmia Therapy, 09/01/2010 – 06/30/2015
- NLM R01LM010828 (Co-investigator, PI – Randy Miller), Evidence-based diagnostic tools for translational and clinical research, 9/30/2010-9/29/2013

Completed Grants:

- NIH UL1 RR024975-KL2 Scholar Award (PI) "An Informatics-based Approach to Pharmacogenetic Studies of Warfarin", 07/01/2009 – 06/30/2010
- NLM R01 LM007995 (Co-investigator, PI - Randy Miller), MOMENT (Monitoring for Outpatient Medication Effects and New Toxicities) in TIME, 02/01/2004 – 06/14/2010

PUBLICATIONS**Selected Peer Reviewed Articles:**

1. Lee HT, **Xu H**, Ota-Setlik A, Emala CW. Oxidant preconditioning protects human proximal tubular cells against lethal oxidant injury via p38 MAPK and heme oxygenase-1. *Am J Nephrol.* 2003 Sep-Oct; 23(5):324-33.
2. Lee HT, **Xu H**, Siegel CD, Krichevsky IE. Local Anesthetics Induce Human Renal Cell Apoptosis. *Am J Nephrol.* 2003 May-Jun; 23(3):129-39.

3. Lee HT, **Xu H**, Nasr SH, Schnermann J, Emala CW. A1 adenosine receptor knock-out mice exhibit increased renal injury following ischemia and reperfusion. *Am J Physiol Renal Physiol*. 2004 Feb;286(2):F298-306.
4. **Xu, H**, Anderson, K, Grann, V, Friedman, C. Facilitating Cancer Research using Natural Language Processing of Pathology Reports. *In Proceedings of Medinfo*. 2004; 565-72.
5. **Xu H**, Markatou M, Dimova R, Liu H, Friedman C. Machine learning and word sense disambiguation in the biomedical domain: design and evaluation issues. *BMC Bioinformatics*. 2006; 7:334.
6. Karina Tulipano P, Tao Y, Millar WS, Zanzonico P, Kolbert K, **Xu H**, Yu H, Chen L, Lussier YA, Friedman C. Natural language processing and visualization in the molecular imaging domain. *J Biomed Inform*. 2007; 40:3, 270-281.
7. Fan JW, **Xu H**, Friedman C. Classifying biomedical concepts using contextual and lexical features. *BMC Bioinformatics*. 2007; 8: 264.
8. Fan JW, **Xu H**, Friedman C. Using Distributional Analysis to Semantically Classify UMLS Concepts. *In Proceedings of Medinfo*. 2007; 519-23.
9. **Xu H**, Jung-Wei Fan, Friedman C. Combine multiple evidence for gene symbol disambiguation. *ACL 2007, BioNLP Workshop*, p41-48.
10. **Xu H**, Fan JW, Hripcsak G, Mendonça EA, Markatou M, Friedman C. Gene symbol disambiguation using knowledge-based profiles. *Bioinformatics*, 2007 23(8):1015-1022.
11. **Xu H**, Stetson P, Friedman C. A Study of Abbreviations in Clinical Notes. *AMIA Annu Symp Proc*. 2007; 821-5.
12. Chen ES, Hripcsak G, **Xu H**, Markatou M, Friedman C. Automated Acquisition of Disease-Drug Knowledge from Biomedical and Clinical Documents. *JAMIA* 2008; 15(1):87-98.
13. **Xu H**, Stetson P, Friedman C. Methods for Building Sense Inventories of Abbreviations in Clinical Notes. *JAMIA*, 2009 16(1):103-108.
14. **Xu H**, Stenner SP, Doan S, Johnson KB, Waitman LR, Denny JC. MedEx – A Medication Information Extraction System for Clinical Narratives. *JAMIA* 2010; 17(1):19-24.
15. **Xu H**, Doan S, Birdwell KA, Cowan JD, Vincz AJ, Haas DW, Basford MA, Denny JC. An automated approach to calculating the daily dose of tacrolimus in electronic health records. *2010 AMIA Summit on Clinical Research Informatics*.
16. Denny JC, Peterson JF, Choma NN, **Xu H**, Miller RA, Bastarache L, Peterson NB. Development of a Natural Language Processing System to Identify Timing and Status of Colonoscopy Testing in Electronic Medical Records. *JAMIA* 2010; 17(4): 393-8
17. Doan S, Bastarache L, Klimkowski S, Denny JC, **Xu H**. Integrating Existing NLP Tools for Medication Extraction from Discharge Summaries. *JAMIA* 2010; 17:528-31.
18. Doan S and **Xu H**. Recognizing Medication related Entities in Hospital Discharge Summaries using Support Vector Machine. *COLING 2010*, the 23rd International Conference on Computational Linguistics, 259-266.
19. **Xu H**, Lu Y, Jiang M, Liu M, Denny JC, Dai Q, Peterson NB. Mining Biomedical Literature for Terms related to Epidemiologic Exposures. *AMIA Annu Symp Proc*. 2010 (in press).
20. Denny JC, Speltz P, Maddox R, Stein G, **Xu H**, Spickard A. Comparing Content Coverage in Medical Curriculum to Trainee-Authored Clinical Notes. *AMIA Annu Symp Proc*. 2010 (in press)
21. Wilke RA, **Xu H**, Denny JC, Roden DM, Krauss RM, McCarty CA, Davis RL,

Skaar T, Lamba J, and Savova G. The emerging role of electronic medical records in pharmacogenomics. *Clinical Pharmacology & Therapeutics (In press)*

Selected Abstracts/Posters:

1. Lee HT, **Xu H**, Emala CW. Sevoflurane Protects Against Renal Ischemic Reperfusion Injury in Rats. *ASA Meeting 2002*.
2. **Xu H**, Friedman C. Facilitating Research in Pathology using Natural Language Processing. *AMIA Annu Symp Proc. 2003:1057*.
3. **Xu H**, Krupke D, Blake J, Friedman C. A Natural Language Processing (NLP) Tool to Assist in the Curation of the Laboratory Mouse Tumor Biology Database. *AMIA Annu Symp Proc. 2006:1150*.
4. **Xu H**, Cunningham AJ, Roden DM, Stein CM. Facilitating Pharmacogenetic studies of warfarin outcomes using informatics methods. *ACRT 2010*
5. Liu M, Denny JC, Mani S, Chen Y, Hu Y, **Xu H**. Identifying potential drugs that induce QT prolongation using electronic medical records. *BioSummit 2010*.