

Albert Max Lai

*Curriculum Vitae*

**Address:** The Ohio State University  
Department of Biomedical Informatics  
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**EDUCATION****Ph.D. in Biomedical Informatics**

Columbia University, Graduate School of Arts and Sciences 2007  
Title: A Remote Training Approach for Teaching Seniors  
to Use a Telehealth System  
Sponsor: Justin B. Starren, M.D., Ph.D.  
Associate Professor of Clinical Biomedical Informatics  
and Radiology  
Honors: Dissertation passed “with distinction”

**M.Phil. in Biomedical Informatics**

Columbia University, Graduate School of Arts and Sciences 2005

**M.S. in Computer Science**

Columbia University, School of Engineering and Applied Science 2001

**B.S. in Computer Science**

Columbia University, School of Engineering and Applied Science 2000

**EXPERIENCE****1/2009 – Present: Assistant Professor**

Department of Biomedical Informatics  
The Ohio State University

- Associate Director, OSU Biomedical Informatics Program, Center for Clinical and Translational Science
- Director – Applications, OSU Medical Center, Center for IT Innovation in Healthcare

**7/2007 – 12/2008: Associate Research Scientist**

Department of Biomedical Informatics

College of Physicians and Surgeons, Columbia University

- Conducting research focusing on data mining using temporal reasoning in the medical record
- Grid-enabling the MedLEE natural language processor
- Advising the design and implementation of a vaccination reminder system
- Assistant Clinical Director of the Center for Advanced Information Management

**2/2007 – 6/2007: IDEATel Associate**

Department of Biomedical Informatics

College of Physicians and Surgeons, Columbia University

- Developed software to transmit data from Bluetooth enabled monitoring devices via cellular phone to the electronic medical record

**2002 – 2006: National Library of Medicine Training Fellow**

Department of Biomedical Informatics

College of Physicians and Surgeons, Columbia University

- Conducted independent research project focusing upon the use of remote display protocols and cognitive science methodologies to support remote training of elderly patients in the telemedicine environment.
- Investigated the use of remote display protocols to support mobile wireless access to medical imaging and electronic medical record

**2000 – 2001: Research Assistant**

Network Computing Lab

Department of Computer Science, Columbia University

- Designed methodology for benchmarking thin-client platforms over Internet2.
- Analyzed performance of thin-clients over Internet2.
- Identified design flaws in existing remote display protocols.

**1997 – 2001: Consultant**

Academic Technologies Group

Academic Information Systems, Columbia University

- Maintained and designed software distributions for Solaris, Linux, Macintosh, Windows 95, and Windows NT systems.
- Administered and designed campus-wide printing system.
- Customized and deployed a campus-wide course discussion board.

**7/1999 – 6/2000: Undergraduate Researcher**

Distributed Computing and Communications Lab  
Department of Computer Science, Columbia University

- Implemented and assisted in design of an IPv4 replacement.
- Implemented and designed network-layer communication protocol.
- Implemented IP tunnel for maintaining compatibility with existing applications.
- Designed testbed network for analyzing network protocol.

**1/1999 – 6/1999, 1/2000 – 5/2000: Undergraduate Researcher**

High Level Vision Lab  
Department of Computer Science, Columbia University

- Researched face detection in MPEG1 and MPEG2 video streams.
- Designed and implemented video annotation tool.

**TEACHING RESPONSIBILITIES**

**Courses:**

**Introduction to Computer Science**, Recitation Instructor, 1999  
**Visual Interfaces to Computers**, Teaching Assistant, 1999  
**Introduction to Software Engineering**, Teaching Assistant, 2000  
**Health Information Systems Architecture**, Teaching Assistant, 2003  
**User Interfaces in Medicine**, Teaching Assistant, 2003

**Students Supervised:**

**Lars Pfannenschmidt**, Exchange Student Researcher, Columbia University  
Department of Biomedical Informatics, 2007

**Bhagyashree Bohra**, Masters Candidate, Columbia University Department of  
Computer Science, 2003 – 2004

**Vijayarka Nandikonda**, Masters Candidate, Columbia University Department of  
Computer Science, 2003 – 2004

**Madhuri Shinde**, Masters Candidate, Columbia University Department of  
Computer Science, 2003 – 2004

**Abhishek P. Surana**, Masters Candidate, Columbia University Department of  
Computer Science, 2003 – 2004

**Suchita Varshneya**, Masters Candidate, Columbia University Department of  
Computer Science, 2003 – 2004

**Doctoral thesis committee member:**

**Katie Zhu**, PhD Candidate, Columbia University Department of Biomedical Informatics, 2007 – present

**PROFESSIONAL ACTIVITIES**

2001–Present Member, American Medical Informatics Association (AMIA)  
 2004 Conference Reviewer, International World Wide Web Conference  
 2005–Present Member, Institute of Electrical and Electronics Engineers (IEEE)  
 2005–Present Member, Association for Computing Machinery (ACM)  
 2006–Present Member, American Telemedicine Association (ATA)  
 2006–2007 Journal Reviewer, Student Editorial Board member, Journal of the American Medical Informatics Association (JAMIA)  
 2008–Present Member, Health Information Management Systems Society (HIMSS)  
 2008 Agenda Planning Committee, HIMSS New York Chapter Conference  
 2008 Conference Reviewer, American Medical Informatics Association (AMIA) Annual Symposium  
 2008–Present Co-Chair, Scholarship Committee, HIMSS New York Chapter

**LEADERSHIP ACTIVITIES**

2003–2004 Junior Student Representative, Department of Biomedical Informatics, Columbia University

**PUBLICATIONS****Original Peer Reviewed Journal Articles:**

1. **Lai AM** and Nieh J. On the Performance of Wide-Area Thin-Client Computing, *ACM Transactions on Computer Systems (TOCS)*, 24(2), May 2006, pp. 175–209.
2. **Lai AM**, Starren JB, Kaufman DR, Mendonça EA, Palmas W, Nieh J, and Shea S for the IDEATel Consortium. The REMote Patient Education in a Telemedicine Environment Architecture (REPETE), *Telemedicine and e-Health*, 2008;14(5), pp. 351–357.
3. Hilliman CA, Cimino JJ, **Lai AM**, Kaufman DR, Starren JB, and Shea S for the IDEATel Consortium. The Effects of Redesigning the IDEATel Architecture on Glucose Uploads, *Telemedicine and e-Health*. 2009;15(3).
4. Morrison FP, Li L, **Lai AM**, Hripcsak G. Repurposing the clinical record: can an existing natural language processing system de-identify clinical notes. *J Am Med Inform Assoc*, 2009;16(1), pp. 37–39.

5. Hripcsak G, Soulakis ND, Li L, Morrison FP, **Lai AM**, Friedman C, Calman NS, and Mostashari F. Syndromic Surveillance Using Ambulatory Electronic Health Records, *J Am Med Inform Assoc*, 2009; 16(3):354–361.
6. Shea S, Weinstok RS, Teresi JA, Palmas W, Starren J, Ciminio JJ, **Lai AM**, Field F, Morin PC, Golan R, Izquierdo RE, Ebner S, Silver S, Petkova E, Kong J, and Eimicke JP for the IDEATel Consortium, A Randomized Trial Comparing Telemedicine Case Management with Usual Care in Older, Ethnically Diverse, Medically Underserved Patients with Diabetes Mellitus: 5 Year Results of the IDEATel Study, *J Am Med Inform Assoc*, In Press, published ahead of print on April 23, 2009 as doi:10.1197/jamia.M3157.
7. **Lai AM**, Kaufman DR, Starren JB, and Shea S for the IDEATel Consortium. Evaluation of a Remote Training Approach for Teaching Seniors to Use a Telehealth System, *Int J Med Inform*, In Press.

#### **Manuscripts Under Review / In Preparation:**

8. **Lai AM**, Kaufman DR, Starren JB, and Shea S for the IDEATel Consortium. Redesigning the IDEATel Home Telemedicine System. In Preparation.

#### **Peer Reviewed Proceedings Articles:**

9. **Lai A**, and Nieh J. Limits of Wide-Area Thin-Client Computing, *Proceedings of the ACM International Conference on Measurement and Modeling of Computer Systems (SIGMETRICS 2002)*, Marina del Rey, CA, June 2002, pp. 228–239.
10. **Lai AM**, Nieh J, Bohra B, Nandikonda V, Surana AP, and Varshneya S. Improving Web Browsing on Wireless PDAs Using Thin-Client Computing, *Proceedings of the Thirteenth International World Wide Web Conference (WWW 2004)*, New York, NY, May 17-22, 2004, pp. 143–154.
11. **Lai AM**, Nieh J, Laine A, and Starren J. Remote Display Performance for Wireless Healthcare Computing, *Proceedings of the Eleventh World Conference on Medical Informatics (Medinfo 2004)*, San Francisco, CA, September 7–11, 2004, pp. 1438–42.
12. **Lai AM**, Starren JB, and Shea S for the IDEATel Consortium. Architecture for Remote Training of Home Telemedicine Patients, *Proceedings of the American Medical Informatics Association (AMIA) 2005 Annual Symposium*, Washington, DC, October 22–26, 2005.
13. **Lai AM**, Kaufman D, and Starren JB for the IDEATel Consortium. Training Digital Divide Seniors to use a Telehealth System: A Remote Training Approach, *Proceedings of the American Medical Informatics Association (AMIA) 2006 Annual Symposium*, Washington, DC, November 11–15, 2006.

14. **Lai AM**, Parsons S, and Hripcsak G. Fuzzy Temporal Constraint Networks for Clinical Information, *Proceedings of the American Medical Informatics Association (AMIA) 2008 Annual Symposium*, Washington, DC, November 8–12, 2008.
15. Zhu X, Gold S, **Lai A**, Hripcsak G, Ciminio JJ. Using Timeline Displays to Improve Medication Reconciliation, *Proceedings of the International Conference on eHealth, Telemedicine, and Social Medicine (eTELEMED) '09*, Cancun, Mexico, February 1-7, 2009.

#### **Invited Book Chapters:**

16. **Lai AM** and Nieh J. Web Content Delivery Using Thin-Client Computing, in *Web Content Delivery (Web Information Systems Engineering and Internet Technologies Book Series)*, eds. Chanson ST, Tang X, and Xu J, Springer, September 2005, pp. 325–345.

#### **Peer Reviewed Abstracts:**

17. **Lai A**, Nieh J, Laine A, and Starren J. Thin Client Performance for Remote 3-D Image Display, *Proceedings of the American Medical Informatics Association (AMIA) 2003 Annual Symposium*, Washington, DC, November 8–12, 2003, p. 904.
18. **Lai AM**, Starren J, and Shea S. A Novel Solution for Remote Training of Home Telemedicine Patients, *Proceedings of the American Telemedicine Association (ATA) 2006 Annual Meeting*, San Diego, California, May 7–10, 2006. p. 213.
19. **Lai AM**, Nieh J, Starren JB. REPETE2: A Next Generation Home Telemedicine Architecture, *Proceedings of the American Medical Informatics Association (AMIA) 2007 Annual Symposium*, Chicago, IL, Nov 10-14, 2007.

#### **Invited Talks:**

20. Finkelman M, Kim W, He Y, Hooker G, Gandek B, Keller R, **Lai AM**, Rose M, and Gibbons RD. Computerized Adaptive Testing to Predict an Observable Outcome. Invited talk at the Cognitive Diagnostic Models Working Group, Statistical and Applied Mathematical Sciences Institute. Research Triangle Park, NC, 2009.

#### **Technical Reports:**

21. **Lai AM** and Starren JB. Remote Display Protocols in Health Care. Columbia University Department of Biomedical Informatics, 2005.