

# Joyce Ho

## Education

- 2011–Present **Ph.D student in Electrical and Computer Engineering**, *University of Texas at Austin*, Austin.  
Advisors: Dr. Joydeep Ghosh and Dr. Sriram Vishwanath
- 2003–2004 **M.Eng in Electrical Engineering and Computer Science**, *Massachusetts Institute of Technology*, Cambridge.  
Advisor: Dr. Stephen Intille
- 1999–2003 **B.S in Electrical Engineering and Computer Science**, *Massachusetts Institute of Technology*, Cambridge.

## Publications

Joyce C Ho, Joydeep Ghosh, Steven Steinhubl, Walter Stewart, Joshua C Denny, Bradley A Malin, and Jimeng Sun. Limestone: High-throughput candidate phenotype generation via tensor factorization. *Journal of Biomedical Informatics*, accepted.

Joyce C Ho, Joydeep Ghosh, and Jimeng Sun. Extracting phenotypes from patient claim records using non-negative tensor factorization. In *BIH 2014*, accepted.

Joyce C Ho, Joydeep Ghosh, and Jimeng Sun. Marble: High-throughput phenotyping from electronic health records via sparse nonnegative tensor factorization. In *KDD 2014*, accepted.

Joyce C Ho, Cheng H Lee, and Joydeep Ghosh. Septic shock prediction for patients with missing data. *Transactions on Management Information Systems (TMIS)*, 5(1):1:1–1:15, April 2014.

Yubin Park, Joyce C Ho, and Joydeep Ghosh. Multivariate temporal symptomatic characterization of cardiac arrest. In *Proceedings of the 35th International Conference of the IEEE Engineering in Medicine and Biology Society (EMBC)*, pages 3222–3225, July 2013.

Joyce C Ho, Yubin Park, Carlos M Carvalho, and Joydeep Ghosh. DYNACARE-OP: Dynamic cardiac arrest risk estimation incorporating ordinal features. In *ICML 2013 Workshop: Role of Machine Learning in Transforming Healthcare*, June 2013.

Joyce C Ho, Yubin Park, Carlos M Carvalho, and Joydeep Ghosh. DYNACARE: Dynamic cardiac arrest risk estimation. In *Proceedings of the Sixteenth International Conference on Artificial Intelligence and Statistics*, pages 333–341, April 2013.

Joyce C Ho, Joydeep Ghosh, and K P Unnikrishnan. Risk prediction of a multiple sclerosis diagnosis. In *2013 IEEE International Conference on Healthcare Informatics (ICHI)*, pages 175–183, 2013.

Joyce C Ho, Cheng H Lee, and Joydeep Ghosh. Imputation-enhanced prediction of septic shock in ICU patients. In *ACM SIGKDD Workshop on Health Informatics (HI-KDD 2012)*, 2012.

C H Lee, N M Arzeno, J C Ho, H Vikalo, and J Ghosh. An imputation-enhanced algorithm for ICU mortality prediction. In *Computing in Cardiology (CinC)*, 2012, pages 253–256, 2012.

Joyce Ho and Stephen S Intille. Using context-aware computing to reduce the perceived burden of interruptions from mobile devices. In *Proceedings of the SIGCHI Conference on Human Factors in Computing Systems (CHI)*, pages 909–918, April 2005.

## Work Experience

- 9/13–Present **Co-founder, Chief Data Scientist**, *Accordion Health*, Austin.
- 6/13–8/13 **Intern**, *Healthcare Analytics Research Group, IBM T.J.Watson Research Center*, Yorktown Heights.  
Created an unsupervised high-throughput phenotype generation model via tensor factorization  
Collaborated with medical experts to verify the clinical quality of candidate phenotypes
- 6/12–6/12 **Project Coordinator, Research**, *Center for Clinical and Research Informatics, NorthShore Health System*, Evanston.  
Created a model to predict risk of a Multiple Sclerosis diagnosis  
Developed a cardiac arrest risk prediction model
- 3/09–8/11 **System Engineer**, *Global Security, Lawrence Livermore National Laboratory*, Livermore.  
Developed streaming and distributed algorithms to detect anomalous activity in network traffic
- 9/04–3/09 **Maintenance and Commissioning Tool Lead**, *National Ignition Facility (NIF), Lawrence Livermore National Laboratory*, Livermore.  
Planned software releases, tracked schedules, prioritized work, and addressed technical issues.  
Interviewed candidates for positions within the NIF Integrated Computer Controls System group.  
Designed, implemented and tested algorithms to automate laser system calculations and verifications.
- 5/03–8/03 **Software Development Intern**, *Microsoft*, Redmond.  
Designed and implemented the Microsoft ActiveSync 4.0 Device Sync Setup Wizard.
- 6/01–8/01 **Advanced Systems Intern**, *Trimble Navigation*, Sunnyvale.  
Designed a circuit board to connect a wireless LAN card and GPS receiver for real-time collision prevention.

## Academic Experience

- 9/11–Present **Research Assistant**, *The University of Texas at Austin*, Austin, Advisor: Dr. Joydeep Ghosh and Dr. Sriram Vishwanath.  
Created a dynamic cardiac arrest risk prediction model to track individual patient's cardiac risk  
Characterized the temporal symptomatic signature of cardiac arrest  
Participated in the PhysioNet 2012 challenge and placed in the top 10  
Developed a septic shock prediction model that generalizes to patients with missing data
- 8/03–8/04 **Research Assistant**, *Massachusetts Institute of Technology*, Cambridge, Advisor: Dr. Stephen Intille.  
Developed a real-time activity detection system using wireless accelerometers, a receiver, and a PocketPC.  
Designed a rechargeable battery pack to power the PocketPC and wireless receiver.
- 6/02–8/02 **Research Assistant**, *Stanford University*, Stanford, Advisor: Dr. Terry Winograd.  
Designed and implemented voice input for the Interactive Workspace project.  
Assisted the development of one-bit LED receivers controlled by a remote source.

## Teaching Experience

- 1/14–Present **Teaching Assistant**, *The University of Texas at Austin*, Austin, Advanced Predictive Modeling.
- 1/13–5/13 **Teaching Assistant**, *The University of Texas at Austin*, Austin, Data Mining.

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## Skills

Programming Languages    Java, C++, R, Python, SQL, NoSQL, Matlab, Perl, CORBA, Scheme

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## Honors

Awards    Innovative Signal Analysis Fellowship (2012), Cockrell School of Engineering Doctoral Fellowship (2011-2013), Microelectronics and Computer Development (2011) Fellowship

Honors    Tau Beta Pi, Eta Kappa Nu