Joyce C. Ho

400 Dowman Drive
Atlanta, GA 30322
☎ 404-727-5605
✉ joyce.c.ho@emory.edu
🖥 http://joyceho.github.io

Academic Appointments

1/16–Present	**Mathematics and Computer Science Department at Emory University**, *Assistant Professor*.

Education

2011–2015	**University of Texas at Austin**, *Ph.D in Electrical and Computer Engineering*, Thesis: Clinically Interpretable Models for Health Data Advisors: Dr. Joydeep Ghosh and Dr. Sriram Vishwanath.
2003–2004	**Massachusetts Institute of Technology**, *M.Eng in Electrical Engineering and Computer Science*, Advisor: Dr. Stephen Intille.
1999–2003	**Massachusetts Institute of Technology**, *B.S in Electrical Engineering and Computer Science*.

Selected Publications

Joyce C Ho, Jin-Mann S Lin, Brian M Gurbaxani, Jimeng Sun, and Joydeep Ghosh. Uncovering medication usage patterns of patients with chronic fatigue syndrome via nonnegative tensor factorization. In *AMIA 2015 Joint Summits on Translational Science*, 2015.

Joyce C Ho, Joydeep Ghosh, Steve R Steinhubl, Walter F Stewart, Joshua C Denny, Bradley A Malin, and Jimeng Sun. Limestone: High-throughput candidate phenotype generation via tensor factorization. *Journal of Biomedical Informatics*, 52:199–211, 2014.

Joyce C Ho, Joydeep Ghosh, and Jimeng Sun. Marble: High-throughput phenotyping from electronic health records via sparse nonnegative tensor factorization. In *Proceeding of the 20th ACM SIGKDD International Conference on Knowledge Discovery and Data Mining*, pages 115–124, 2014.

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

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

Joyce C Ho, Yubin Park, Carlos M Carvalho, and Joydeep Ghosh. DYNACARE: Dynamic cardiac arrest risk estimation. In *Proceedings of the 16th International Conference on Artificial Intelligence and Statistics*, pages 333–341, 2013.

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*, pages 3222–3225, 2013.

Invited Talks

2015	Department of Computer Science, USC

2015 Mathematics and Computer Science Department, Emory University

Awards & Honors

Awards Dr. Brooks Carlton Fowler Endowed Presidential Graduate Fellowship in Electrical and Computer Engineering (2014)

KDD Student Travel Award Winner (2014)

Innovative Signal Analysis Fellowship (2012)

Cockrell School of Engineering Doctoral Fellowship (2011-2014)

Microelectronics and Computer Development Fellowship (2011)

Honors Tau Beta Pi, Eta Kappa Nu

Teaching Experience

Emory Database Systems (undergraduate). Spring 2016

Big Data Analytics (graduate). Spring 2016

Service

PC Member NIPS 2016 Workshop on Machine Learning for Health

ACM-BCB 2016 Workshop on Methods and Applications in Healthcare Analytics

IEEE International Conference on Healthcare Informatics 2016

IEEE International Conference on Healthcare Informatics 2015

AIME 2015 Workshop: Matrix Computations for Biomedical Informatics

AMIA 2014 Workshop on Data Mining for Medical Informatics: Electronic Phenotyping

BigMUD 2013: ICDM Workshop on Mining and Understanding from Big Data

Reviewer Machine Learning for Healthcare 2016

Journal of Machine Learning

AMIA 2015 Joint Summits on Translational Science

Data Mining and Knowledge Discovery

Transactions on Knowledge Discovery from Data

Work Experience

6/14–Present **ORISE Fellow**, *Centers for Disease Control and Prevention*, Atlanta.

Used sparse tensor factorization to discover medication usage patterns for Chronic Fatigue Syndrome

Collaborated with domain experts and epidemiologists to evaluate quality of phenotypes

9/13–Present **Co-founder, Chief Data Scientist**, *Accordion Health*, Austin.

Co-founded company to pair big data analytics with a friendly user interface to empower users to understand and manage their healthcare costs

Co-authored an NSF Phase I SBIR award winning proposal

Led an award winning Health Datapalooza data visualization team

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.