

MOHAMMAD GHASSEMI, PH.D.

<https://ghassemi.xyz> ◊ ghassemi@alum.mit.edu ◊ [codebase](#)

AUTOBIOGRAPHY

I am the founder of [Ghamut Corporation](#) and an Associate Director of Data Science at [Standard & Poor's Financial Services](#). I also serve as a Professor of Computer Science at Michigan State University and hold a [research affiliation](#) with the Massachusetts Institute of Technology (MIT). I am interested in the applications of machine learning, data mining and natural language processing to problems of human health and behavior. I am particularly interested in recommendation systems, decision support, and human-in-the-loop methodologies. Presently, a majority of my time is dedicated to my role as founder at Ghamut Corporation, where I am developing an [Connect](#), an AI-enabled community building platform.

EDUCATION

PhD, Massachusetts Institute of Technology *February 2012 - May 2018*

Major: Electrical Engineering and Computer Science

Minor: Institutional Communications

Advisors: Dr. Roger G Mark and Dr. Emery N Brown

[Thesis]: *Life After Death: Techniques for the Prognostication of Post-anoxic Coma Patients*

MPhil, University of Cambridge (UK) *October 2010 - July 2011*

Major: Information Engineering

Advisor: Prof. Daniel Wolpert

[Thesis]: *Shadows of the Mind: Using Discrete Decision Tasks to Infer Mental Representations*

BSc, New Mexico State University *August 2003 - May 2008*

Major: Electrical Engineering & Applied Mathematics

Minor: Computer Science

Advisor: Dr. Joseph R Denk

Distinctions: [Outstanding Engineer](#)

[Thesis]: *Jesus Existed: An Investigation into the Pauline Letters for the Historical Jesus*

SKILLS AND CERTIFICATIONS

Certifications

[Kaufman Teaching Certificate](#)

[Cognitive Ability Test Results](#)

CASA Child Advocacy Certificate

Technical Expertise

Artificial Intelligence, Machine Learning,
Signal Processing, Databases, Web Development,
Statistics, Clinical Informatics

Non-Technical Expertise

Grant Writing, Project Management, Innovation,
Fund-raising, Public-Speaking, Strategy

Data Science Tools

Python, MATLAB, SQL, C

Web Design Tools

Python, HTML, CSS, JavaScript

JOURNAL PAPERS

[paper] **Dynamic EEG Signatures Predict Recovery in Hypoxic Encephalopathy**
Annals of Neurology (Submitted, 2018)

MM Ghassemi, E Amorim, T Alhanai, JW Lee, S Herman, A Sivaraju, N Gaspard, L Hirsch, BM Scirica, M Donnino, S Biswal, VM Junior, SS Cash, EN Brown, RG Mark, MB Westover

[paper] **Estimating the False Positive Rate of Absent Somatosensory Evoked Potentials in Cardiac Arrest Prognostication**

Critical Care Medicine (2018)

E Amorim, MM Ghassemi, JW Lee, DM Greer, PW Kaplan, AJ Cole, SS Cash, MT Bianchi, MB Westover

[paper] **Management of Atrial Fibrillation with Rapid Ventricular Response in the Intensive Care Unit: A Secondary Analysis of Electronic Health Record Data**

Shock (2017)

A Moskowitz, K Chen, A Cooper, A Chahin, MM Ghassemi, LA Celi

[paper] **A Datathon Model to Support Cross-Disciplinary Collaboration**

Science Translational Medicine (2017)

MM Ghassemi, J Aboab, LA Celi, P Charlton, M Feng, DC Marshall, L Mayaud, T Naumann, N McCague, KE Paik, TJ Pollard, M Resche-Rigon, JD Saliccioli, DJ Stone

[paper] **MIMIC-III, A Freely Accessible Critical Care Database**

Nature Scientific Data (2016)

T Pollard, A Johnson, L Shen, L Lehman, M Feng, MM Ghassemi, B Moody, P Szolovits, LA Celi, RG Mark

[invited paper] **Machine Learning and Decision Support in Critical Care**

Proceedings of the IEEE (2016)

AEW Johnson, MM Ghassemi, S Nemati, KE Niehaus, D Clifton, GD Clifford.

[paper] **A Data-Driven Approach to Optimized Medication Dosing: A Focus on Heparin**

Intensive Care Medicine (2014)

MM Ghassemi, SE Richter, IM Eche, TW Chen, J Danziger, LA Celi

[paper] **Nocturnal pulsatile LH Secretion is Preserved Even During Fragmented Deep Sleep in Pubertal Children**

Journal of Clinical Endocrinology & Metabolism (2014)

ND Shaw, JP Bulter, S Nemati, T Kangarloo, MM Ghassemi, A Malhotra, JE Hall

[paper] **Cognitive Tomography Reveals Complex Task-independent Mental Representations**

Current Biology (2013)

NMT Houlby, F Huszar, MM Ghassemi, G Orban, DM Wolpert, M Lengyel

[paper] **An ICA with Reference Approach in Identification of Genetic Variation and Associated Brain Networks**

Frontiers of Human Neuroscience (2012)

J Liu, MM Ghassemi, AM Michael, D Boutte, W Wells, N Perrone-Bizzozero, F Macciardi, DH Mathalon, JM Ford, SG Potkin, JA Turner, VD Calhoun

CONFERENCE PAPERS

[paper] **Spotting Survivors: A Method to Predict the Fate of Startup Ventures**
International Conference on Knowledge Discovery and Data Mining (Submitted, 2018)
MM Ghassemi, T Alhanai

[paper] **A Repository of Corpora for Summarization**
The International Conference on Language Resources and Evaluation (2018)
F Deroncourt, MM Ghassemi, W Chang

[paper] [award] **Detecting Depression with Audio/Text Sequence Modeling of Interviews**
Interspeech (2018)
T Alhanai, MM Ghassemi, J Glass

[paper] [website] **You Snooze, You Win: the PhysioNet/Computing in Cardiology Challenge**
Conference on Computing in Cardiology (2018)
MM Ghassemi, BE Moody, LH Lehman, C Song, Q Li, H Sun, RG Mark, MB Westover, GD Clifford

[paper] **A Deep Deterministic Policy Gradient Approach to Medication Dosing and Surveillance in the ICU**
IEEE Engineering in Medicine and Biology Society (2018)
R Lin, MD Stanley, MM Ghassemi, S Nemati

[paper] **How is the Doctor Feeling? ICU Provider Sentiment is Associated with Diagnostic Imaging Utilization.**
IEEE Engineering in Medicine and Biology Society (2018)
MM Ghassemi, T Alhanai, J Rafa, RG Mark, S Nemati, FH Chokshi

[paper] **Personalized Medication Dosing Using Volatile Data Streams**
Association for the Advancement of Artificial Intelligence Workshops (2018)
MM Ghassemi, T Alhanai, MB Westover, RG Mark, S Nemati

[paper] **One-year mortality after recovery from critical illness: A retrospective cohort study**
PloS one (2018)
S Lokhandwala, N McCague, A Chahin, B Escobar, M Feng, MM Ghassemi, D J Stone, LA Celi

[paper] **An Open-Source Tool For The Automated Transcription of Paper-Spreadsheet Data**
IEEE International Conference on Big Data (2017)
MM Ghassemi, W Jarvis, T Alhanai, RG Mark, EN Brown, MB Westover

[paper] **Predicting Latent Narrative Mood using Audio and Physiologic Data**
Association for the Advancement of Artificial Intelligence (2017).
MM Ghassemi, T Alhanai

[paper] **The Effects of Deep Network Topology on Mortality Prediction**
IEEE Engineering in Medicine and Biology Society (2016)
D Hao, MM Ghassemi M Feng

[paper] **Optimal Medication Dosing from Suboptimal Clinical Examples: A Deep Reinforcement Learning Approach**
Engineering in Medicine and Biology Society (2016)
S Nemati, MM Ghassemi, GD Clifford

[paper] **Using Paraphrases to Improve Tweet Classification: Comparing WordNet and Word Embedding Approaches**
IEEE International Conference on Big Data (2016)
Q Li, S Shah, M Ghassemi, R Fang, A Nourbakhsh, X Liu

[paper] **Monitoring and Detecting Atrial Fibrillation using Wearable Technology**

Engineering in Medicine and Biology Society (2016)

S Nemati, [MM Ghassemi](#), V Ambai, N Isakadze, O Levantsevych, A Shah, and GD Clifford

[paper] **Newsworthy Rumor Events: A Case Study of Twitter**

International Conference on Data Mining: Workshop on Event Analytics (2015)

A Nourbakhsh, X Liu, S Shah, R Fang, [MM Ghassemi](#), Quanzhi Li

[paper] **A Visualization of Evolving Clinical Sentiment Using Vector Representations of Clinical Notes**

Conference on Computing in Cardiology (2015)

[MM Ghassemi](#), RG Mark, S Nemati

[paper] **Patient Prognosis from Vital Sign Time Series: Combining Convolutional Neural Networks with a Dynamical Systems Approach**

Conference on Computing in Cardiology (2015)

L Lehman, [MM Ghassemi](#), S Nemati

[paper] **An Enhanced Cerebral Recovery Index**

IEEE Engineering in Medicine and Biology Conference (2015)

[MM Ghassemi](#), E Amorim, RG Mark, EN Brown, MB Westover

[paper] **A Fast and Memory-Efficient Algorithm for Learning and Retrieval of Phenotypic Dynamics in Multivariate Cohort Time Series**

IEEE International Conference on Big Data: Workshop on Big Data in Bioinformatics (2014)

S Nemati, [MM Ghassemi](#)

[paper] **Management and Analysis of Biomedical Big Data with Cloud-based In-memory Database and Dynamic Querying: a Hands-on Experience with Real-world Data**

Knowledge Discovery and Data Mining Conference (2014)

M Feng, [MM Ghassemi](#), T Brennan, J Ellenberger, I Hussain, RG Mark

[paper] **Global Optimization Approaches for Parameter Tuning in Biomedical Signal Processing: A Focus of Multi-scale Entropy**

Computing in Cardiology Conference (2014)

[MM Ghassemi](#), L Lehman, J Snoek, S Nemati

BOOKS AND BOOK CHAPTERS

[course] **An Innovative, Blended, Project-Based Health Informatics Course**

MIT Press (2018)

ML Braunstein, JC Cox, V Sadiraj, JF Sweeney, C Hiddleson, TG Buchman, [MM Ghassemi](#), S Nemati, P Braun, and AB Goodman

[chapter] **Communication Networks and Global Health**

Global Health Informatics Book

MIT Press (2017)

M Feng, [MM Ghassemi](#)

[book] **Secondary Analysis of Electronic Medical Records**

Springer (2016)

LA Celi, P Charlton, [MM Ghassemi](#), AEW Johnson, M Komorowski, D Marshall, T Naumann, K Paik, TJ Pollard, J Raza, J Saliccioli

[chapter] **Hyperparameter Selection**

Secondary Analysis of Electronic Medical Records

Springer (2016)

F Dernoncourt, S Nemati, EB Kassis, [MM Ghassemi](#)

[chapter] **Big Data and Optimization of Treatment Strategies**

Machine Learning for Healthcare Technologies

Springer (2016)

S Nemati, MM Ghassemi

SHORT PAPERS AND ABSTRACTS

[abstract] **The Challenges and Opportunities for Healthcare Recommendation Systems in a Rapidly Evolving Health Data**

American Clinical Neurophysiology Society (2017)

MM Ghassemi

[poster] **Dynamic EEG Features in Neurologic Prognosis of Coma Following Cardiac Arrest**

American Clinical Neurophysiology Society (2017)

MM Ghassemi, E Amorim, JW Lee, M van Putten, J Hofmeijer, A Sivaraaju, N Gaspard, B Ruijter, S Herman, S Biswal, V Junior, MB Westover

[poster] **Dynamic Quantitative EEG Signatures Predict Outcome in Cardiac Arrest**

Neurocritical Care Society (2016)

MM Ghassemi, E Amorim, JW Lee, MB Westover.

*Recipient of Best Poster Award

[paper] **Neurological Severity of Illness Is Associated with Increased Resource Utilization**

International Symposium on Intracranial Pressure and Neuromonitoring (2016)

MM Ghassemi, S Nemati, MB Westover

[paper] **A Cascaded Regression Approach for Precision Medication Dosing**

IEEE Strategic Conference on Healthcare Innovations and Point of Care Technologies for Precision Medicine (2015)

MM Ghassemi and S Nemati

[paper] **Hierarchical Event Detection via Hidden Markov Modeling**

NIH-NBIB Trainee Conference (2014)

MM Ghassemi, EN Brown

INVITED TALKS

International Workshop on Health Recommender Systems

October 2018

Invited Keynote

Vancouver, CA

Presented “The Challenges and Opportunities for Healthcare Recommendation Systems in a Rapidly Evolving Health Data Ecosystem”; see announcement [here](#).

Intelligent Health

September 2018

Invited Speaker

Basel, Switzerland

Presented “A Wearable AI system to Detect Conversational Tone”; see programme [here](#).

Medical Development Group Forum

September 2018

Invited Speaker

Weston, MA

Presented “Artificial Intelligence (AI) in Healthcare: How AI Applications Will Affect Your Life Personally and Professionally”; see announcement [here](#).

Michigan State University

Jan 2018

Invited Speaker

East Lansing, MI

Presented “Healthcare 2.0: Integrating health and Behavioral Data for AI-driven Care”; see announcement [here](#).

- Aetna** March 2018
Invited Speaker, Leader Speaker Series Hartford, CT
Discussed how technology can play a role in helping us learn more about ourselves, and improve our lives.
- University of Tennessee** March 2018
Invited Speaker Knoxville, TN
Discussed how advances in data science and machine learning can help us better understand and improve our personal lives; see announcement [here](#); see video of talk [here](#)
- TEDx Beacon Street** November 2017
Invited Speaker Somerville, MA
Presented “How to find the most interesting person you’ve never met”; see full presentation [here](#).
- Massachusetts Institute of Technology** October 2017
Invited Speaker Cambridge, MA
Presented “Techniques for the Prognostication of Coma Following Cardiac Arrest” at the Institute for Medical Science and Engineering.
- International Conference on Extreme Learning Machines** October 2017
Keynote Speaker Yantai, China
Presented “Time Sensitive Modeling For Better Clinical Prognostication”; see announcement [here](#).
- Affectiva** March 2017
Invited Speaker Boston, MA
Presented “Detecting latent narrative mood using audio and physiologic data”; see announcement [here](#).
- Samsung Strategy and Innovation Center** February 2017
Invited Speaker San Jose, CA
Presented “Detecting Latent Narrative Mood using Audio and Physiologic Data”.
- Stanford University** February 2017
Invited Speaker Stanford, CA
Presented “Echo Chambers? There’s an App for That” at the SPARQ Research Collaborative in the Department of Psychology”; see announcement [here](#).
- American Clinical Neurophysiology Society** February 2017
Invited Speaker Phoenix, AZ
Presented “Quantifying Dynamic EEG Features in Prognosis of Hypoxic Ischemic Encephalopathy”; see program [here](#).

CONFERENCE/CHALLENGE ORGANIZATION

Physionet Challenge 2018
Organizing Committee Member Cambridge, MA

Organized a data science challenge for the detection of sleep arousals; see challenge page [here](#).

Critical Data Conference and Workshop January 2014
Organizing Committee Member Cambridge, MA

Assisted in the collection of over \$40,000 in sponsorship funding for the event. Encouraged attendance from over 300 medical and engineering researchers across 12 countries. Arranged prominent speakers including the editor in chief of the *New England Journal of Medicine*.

Computing in Cardiology Conference September 2014
Organizing Committee Member Boston, MA

Reserved venue, organized activities and scientific sessions.

PATENTS

Method and Device for the Passive Recording of the Electrocardiogram while Working at a Desk Submitted November 2018
US Patent Pending

The invention is a workstation that passively measures the user's electrocardiogram.

Methods And Systems For Determining People You Should Know and Autonomous Social Coaching Submitted April 2017
US Patent App. 15/482,487 Pending

The invention provides users with suggestions on other users that they should meet, who they would not have been likely to meet without such a suggestion, and provides data-driven social coaching through an AI agent.

Adjustable Solar Cell Network August 2010
US Patent 20100193055 Visible Light Solar Technologies

Describes a controllable voltage and current module that allows for up to 20% more effective capture of photovoltaic energy.

Modular Solar Device Power Distribution February 2010
US Patent 20100033019 Visible Light Solar Technologies

Describes a unique, highly efficient engineering architecture for interface between a wide range of photovoltaic energy sources, battery technologies, and applications.

ACADEMIC APPOINTMENTS

Michigan State University November 2018 - Present
Adjunct Professor East Lansing, MI

Performing research at the interface of Artificial Intelligence, health, and behavioral science.

Massachusetts Institute of Technology July 2018 - Present
Affiliate, Institute for Medical Engineering and Science Cambridge, MA

Serve as a research affiliate with the Laboratory of Computational Physiology; see laboratory profile [here](#). Play a leading role in the organization of the annual Physionet Challenge; see website [here](#).

WORK EXPERIENCE

Ghamut Corporation October 2016 - Present
Founder Cambridge, MA

Ghamut is developing technologies to reinvent community building. Our flagship product, **Connect**, is used to build community on university campus across America. In 2017, Ghamut was a [winner of the MassChallenge](#). In 2019, Ghamut was the recipient of a Phase I Small Business Innovation Research Grant From the National Science Foundation.

Standard and Poor's Financial Services October 2018 - Present
Associate Director, Data Science New York, NY

Working in the ratings division to develop tools and techniques for the assessment of nations and corporations.

Brevi Inc. August 2018 - Present
Technology Partner New York, NY

Developing machine learning tools for talent allocation within organizations.

Mindchild Medical May 2018 - August 2018
Consultant Andover, MI

Characterized and improved algorithms for fetal electrocardiogram extraction.

Allstate May 2017 - July 2017
Consultant Chicago, IL

Provided strategic expertise in data management, analysis, and visualization.

Estée Lauder Company September 2016 - Present
Consultant New York, NY

Provide strategic expertise in data management, analysis, and visualization.

Thomson Reuters May 2015 - August 2015
Technology Summer Associate New York, NY

Investigated the use of social media data to predict rumors, and detect rare events. Utilized LSTM neural networks to infer the topical content and sentiment of social media activity.

HappiTech LLC April 2014 - July 2015
Consultant Amsterdam, Netherlands

Developed algorithm for estimation of heart rate from cell phone camera; see app [here](#).

The Boston Consulting Group October 2011 - January 2012
Associate Dubai, UAE

Provided evidence-based strategies to public and private sector executives in the Middle East.

Mind Research Network April 2010 - April 2011
Consultant Albuquerque, New Mexico

Investigated functional brain networks in the context on psychiatric illness.

Visible Light Solar Technologies May 2008 - March 2010
Engineering Lead Albuquerque, NM
Lead the development effort of dynamic, intelligent solar powered electrical applications. Designed and implemented software to control LED lighting applications. Designed hardware for LED lighting applications. Performed research on affordable and novel solar cell lamination techniques as well as viability of indoor photovoltaic applications.

New Mexico State University January 2008 - May 2008
Scientific Specialist Las Cruces, NM
Developed a software package using LabVIEW to more effectively run, and interpret data from, an Ion Mobility Spectrometer.

Agilent Technologies May 2007 - August 2007
Intern Pleasanton, CA
Designed and contributed toward the implementation of a driver for Agilent's 35900E analog-to-digital converter.

Agilent Technologies May 2006 - August 2006
Intern Santa Clara, CA
Investigated, improved and redesigned components of Agilent's Mass Spectrometer line. Increased the speed of the device by approximately 1000 times after introducing redesigned components to the device. The redesigned components are currently being developed into a new product.

IBM Corporation May 2005 - August 2005
Intern Tucson, AZ
Improved security of the 3584 Automated Tape Library by designing a specialized security interface for the library operator panel.

GRANTS, SCHOLARSHIPS AND FELLOWSHIPS

Small Business Innovation Research Grant (Phase I) January 2018
\$225,000 National Science Foundation
Awarded to [Ghamut Corporation](#) for the development of an [AI-enabled community building platform](#).

Google Cloud Platform Startup Program November 2018
\$20,00 Google Cloud
Awarded to support research and development activities of the [Ghamut Corporation](#).

Community Building Grants November 2018
Worth \$75,000
Awarded to support the [Connect](#) platform.
\$50,000: University of Virginia
\$20,000: Massachusetts Institute of Technology
\$3,500: Johns Hopkins University
\$1,500: University of Toledo

Amazon Web Services Startup Grant

\$10,00

November 2018

Amazon Web Services

Awarded to support research and development activities of the [Ghamut Corporation](#).

National Research Service Award (T32HL007901)

\$65,00

January 2017

National Heart, Lung, and Blood Institute

Awarded as part of a graduate training grant for research in sleep medicine.

MIT Sandbox Grant

\$20,000

October 2016, April 2017

MIT Sandbox Initiative

Awarded to facilitate continued development of a platonic match-making software platform.

MIT Graduate Student Life Grant

\$16,000

Spring 2015-Present

MIT Office of the Dean of Graduate Education

Awarded to facilitate continued development of a platonic match-making software platform.

MIT Mind-Hand-Heart Grant

Worth \$5,000

Summer 2016

MIT Mind Hand Heart

Awarded to facilitate continued development of a platonic match-making software platform.

AWS Research Education Grant

Worth \$8,000

May 2015

Amazon Corporation

Awarded to support the distribution of a large, publicly accessible clinical data archive.

Advanced Multimodal Neuroimaging Training Program (T90DA22759)

Worth \$75,000

April 2014

Massachusetts General Hospital

Awarded to support advanced research activities on Prognostication of Neurological Outcomes Following Cardiac Arrest.

Henry Luce Fellowship

Worth \$40,000

February 2014

Luce Foundation

Successful candidates have a record of high achievement, outstanding leadership ability, and clearly defined interests. Provides stipends, language training, and individualized professional placement in Asia for 15-18 Scholars each year.

The Heinz Award

Nominee

December 2013

Heinz Family Foundation

Individual achievement award given annually to recognize outstanding individuals for innovative contributions.

NIH Neuroimaging Training Program (T32EB001680)

Worth \$75,000

September 2013

National Institute of Health

To enable the development of novel, interdisciplinary research involving neuroimaging techniques.

Salerno Foundation Fellowship

Worth \$225,000

June 2012

Salerno Foundation

Awarded to student with graduate research applicable to critical care medicine.

Gates Cambridge Scholarship*Worth \$60,000*

February 2010

Gates-Cambridge Trust

A highly prestigious full scholarship for study at the University of Cambridge (UK) granted on the basis of intellectual ability, leadership capacity and desire to use knowledge to contribute to society throughout the world. One of only 29 people in the United States to receive the distinction in 2010; see scholar-profile [here](#).

Goldwater Scholarship*Worth \$8,000*

February 2010

The Barry Goldwater Scholarship and Excellence in Education Program

The Goldwater Scholarship is considered the most prestigious undergraduate award of its kind in Engineering, Math and Science; see announcement [here](#).

Other Scholarships*Total worth \$25,000*

2003 - 2008

New Mexico State University

NMSU Alumni Association Scholarship
 Professor Harold Brown Scholarship
 Phelps Dodge Corporation Scholarship
 Pioneer Bank Scholarship
 International Test and Evaluation Scholarship
 Bryant E. Pedrick Memorial Scholarship
 Engineering College Scholarship

HONORS, AWARDS AND DISTINCTIONS**MassChallenge Boston***Silver Winner*

2017

The distinction is awarded to the top 1.5% of competitors.

MIT 100K*Semi-Finalist*

2017

Selected for work on a web-platform that facilitates platonic social interactions between users.

Bell-Labs Innovation Prize*Finalist*

2015

Selected for work on an invention that accomplished three high level objectives: patient monitoring, automated assessment of data, and the provision of actionable feedback.

Verizon Powerful Answers Award*Semi Finalist*

2015

Selected for work on a wearable, social coaching algorithm.

MIT T=0 Hackathon*Winner*

September 2013

Cambridge, MA

Awarded first place in the competition for developing a low-cost bicycle battery charger for deployment in the third world.

Outstanding Graduating Engineer*New Mexico State University*

May 2008

The highest academic distinction provided to the top graduating engineer each year.

Four Corners Embrace Award April 2007
American Petroleum Institute
Award for excellent presentation and research ability regarding the future of fossil fuels, and sustainable energy.

C.A.R.E. Award 2007
Citizens Alliance for Responsible Energy
For research and presentation regarding the current state of global and national energy production and its relationship to the environment and poverty. Presented pragmatic solutions to scientists and policy makers in New Mexico for developing non-fossil fuel energy sources.

The President's Volunteer Service Award (National) 2005
The White House
Recognized for participating in over 400 hours of community service.

Deans Honor List 2004 - 2008
New Mexico State University
Placed in top 15% of student body.

SELECTED MEDIA MENTIONS

Model Can More Naturally Detect Depression in Conversations 2018
[\[MIT News\]](#) [\[TechCrunch\]](#) [\[AAAS\]](#) [\[Forbes\]](#) [\[Smithsonian\]](#) [\[Popular Science\]](#) [\[Axios\]](#)

Physician Intuition: Doctors Rely on More than Just Data for Medical Decision Making 2018
[\[MIT News\]](#) [\[BJ-HC\]](#) [\[Clinical Innovation\]](#) [\[CMAJNews\]](#) [\[TheNational-AE\]](#)

Sensing the Unspoken: Wearable AI System can Detect a Conversation's Tone 2017
[\[MIT News\]](#) [\[BBC\]](#) [\[Wired\(US\)\]](#) [\[Wired\(UK\)\]](#) [\[WSJ\]](#) [\[Newsweek\]](#) [\[Forbes\]](#) [\[Vice\]](#), [\[Engadget\]](#)

Algorithm Connects Students to the Most Interesting Person They've Never Met 2016
[\[MIT News\]](#) [\[World Economic Forum\]](#) [\[ACM\]](#) [\[The Conversation\]](#) [\[The Tech\]](#)

Gates-Cambridge Scholarship 2010
[\[Gates-Cambridge Trust News\]](#), [\[NMSU News Center\]](#)

Biofeedback Game 2015
[\[Business Insider\]](#)

TEACHING AND TUTORIALS

A Web App in 1 Hour Fall, 2018
Instructor *Massachusetts Institute of Technology*
A one hour course that walks students through the development of a Python Flask Web application; [course slides here](#).

Secondary Analysis of Health Records (HST.953) Fall, 2016
Instructor *Massachusetts Institute of Technology*
Designed a session on predictive modeling, and assessment techniques.

Pitch To The Public Fall, 2016
Instructor *Massachusetts Institute of Technology*
A four-session course designed to help scientists speak about their research to general audiences, and the media in pitch- (1 minute), short- (5 minutes) and conference- (15 minutes with slides) style formats. The course contained both lectures, and in-class exercises.

Machine Learning in Critical Care Winter, 2015
Instructor *Massachusetts Institute of Technology*
A four session course on machine learning in critical care teaching students how to: Formulate a research question, preprocess clinical data, apply machine learning algorithms and interpret results.

Quantitative Systems Physiology (6.022j) February 2012 - May 2012
Teaching Assistant *Massachusetts Institute of Technology*
Prepared exams, homework assignments and tutored students in MIT's Quantitative Systems Physiology class (6.022j). Supported physiological laboratories, which required dissection of specimens including rabbits, frogs and cow hearts.

SOCIETIES

Journal of Physiological Measurement 2019
Program Committee Member
Assessed scientific manuscripts for inclusion in the journal; manuscripts topics were generally associated with the applications of Artificial Intelligence methods to sleep.

Association for the Advancement of Artificial Intelligence 2018
W3PHIAI Workshop Program Committee Member
Assessed scientific manuscripts for inclusion in the workshop's proceedings; manuscripts topics were generally associated with the applications of Artificial Intelligence methods to health.

American Medical Informatics Society 2015-Present
Scientific Reviewer (JAMIA)
Serve as a technical reviewer for Journal articles.

Business Talent Group 2013 - Present
Member
An exclusive network of independent consultants trained by boutique firms.

MIT Graduate Student Council 2015 - 2016
Co-chair of Academics, Research and Careers Committee
Managed \$67,000 in resources. Served as student member of the *Committee for Graduate Admissions*. Organized multiple workshops and panel discussions on how to perform the academic search, secure a high-impact post-doctoral position, write a doctoral thesis, and communicate effectively.

PUBLIC SERVICE ACTIVITIES

MIT Sandbox 2018
Mentor Cambridge, MA

Mentoring several aspiring Entrepreneurs in the MIT ecosystem.

MIT Solve 2018
Reviewer Cambridge, MA

Reviewed applications for the “Work of the Future” challenge.

Save Yemen Fundraiser Fall 2016
Organizer Cambridge, MA

Organized a fundraiser lunch for Doctors without Borders (\$2,500 collected) for civilians in worn-torn Yemen.

Sana Engineering Workshop July 2013 - July 2014
Workshop Instructor Vellore, India

Guided undergraduate students in Vellore India through workshop on health-care informatics.

Science Fair Mentorship Program July 2012 - July 2013
Co-founder Boston, MA

Worked with underprivileged children in the Boston area to inspire an interest in science and engineering through science fair mentorship.

Cambridge iTeams October - December 2010
Market Penetration Lead Cambridge, MA

Developed Market penetration strategies for markerless motion capture software package being developed at the university.

The Court Appointed Special Advocate Program January 2009 - August 2009
Child Representative Albuquerque, NM

Certified legal advocate for abused and neglected children. Investigated child abuse and neglect cases and provided recommendations to judge.

MENTEES AND STUDENTS

Julian Ishii-Rousseau Undergraduate, Tokyo Medical and Dental University
August 2018 - November 2018

Invented and patented a desk that measures a user’s electrocardiogram.

Yasmine Simone Undergraduate, University of Maryland
July 2018 - August 2018

Developed creative and conceptual materials for viral marketing campaign.

Christopher Song Undergraduate, Johns Hopkins University
June 2018 - August 2018

Assembled materials for a Small Business Innovation Research (SBIR) grant.

Hedyeh Elahinia Undergraduate, University of Toledo
June 2017 - July 2018

Performed Natural Language Processing analysis of medical free-text to identify predictors of patient non-adherence.

Willow Jarvis

Undergraduate, MIT

August 2014 - August 2015

Developed algorithms for automated extraction of data from clinical flow-sheets.

Joe Rowley

Undergraduate, University of California at Santa Cruise

August 2014 - July 2015

Designed a full-stack interface for optimal medication dosing.

REFERENCES AND COLLABORATORS

Roger G. Mark, M.D. Ph.D.

2011 - Present

Professor, Massachusetts Institute of Technology

Ph.D. supervisor, scientific collaborator and mentor

Sameena Shah, Ph.D.

2018 - Present

Director of Data Science, Standard and Poor's Financial Services

Work supervisor and scientific collaborator

Tuka Alhanai, M.Sc.

2014 - Present

Founder, Ghamut Corporation

Co-founded Ghamut Corporation

Timothy Wilson, Ph.D.

2018 - Present

Professor, University of Virginia

Scientific collaborator and campus partner for the Connect platform

Ace Moghimi

2018-Present

President, Brevi Inc.

Collaborator at Brevi Inc.

Shamim Nemati, Ph.D.

2012 - 2018

Professor, Emory University

Scientific collaborator

Gari Clifford, Ph.D.

2015 - 2018

Professor, Georgia Institute of Technology

Scientific collaborator

Emery N. Brown, M.D. Ph.D.

2013 - 2018

Professor, Massachusetts Institute of Technology

Ph.D. supervisor

M. Brandon Westover, M.D. Ph.D.

2013 - 2018

Professor, Harvard Medical School

Ph.D. committee member

Thomas Heldt, Ph.D. <i>Professor, Massachusetts Institute of Technology</i> Ph.D. committee member	2016 - 2018
Surender Kumar <i>Associate Director of Innovation, Allstate</i> Supervisor for consulting engagement at Allstate	2017
Kushal Vora <i>Associate Director of Innovation, Samsung Corporation</i> Oversaw industrial partnership on a scientific collaboration	2017
Andrew Michael, Ph.D. <i>Director of Imaging Analytics and Informatics, Duke University</i> Oversaw scientific research at the Mind Research Network	2010-2011