

MING HSIEH INSTITUTE
2016-17 PhD SCHOLARS

Each year, a select group of PhD students from the EE Department is selected as Ming Hsieh Institute Scholars. These students are carefully chosen by a faculty committee on the basis of their research accomplishments and desire for an academic career. They assist MHI in carrying out its mission.



Yu Cao

Advisor: Chongwu Zhou



Pradipta Ghosh

Advisor: Bhaskar Krishnamachari



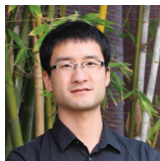
Guodong Xie

Advisor: Alan Willner



Erick Moen

Advisor: Andrea Armani



Yihang Zheng

Advisor: Petros Ioannou

2016 - 17 Scholar Highlights



The 2016-2017 MHI Scholars organized SHOT2, an academic moonshot program designed to enable high-impact research with minimal risk. Participants received fundamental and hands-on training in three of the hottest fields: Artificial Intelligence, Quantum Mechanics, and Mixed Reality.

The program consisted of a two-phase seminars series. The first phase included five “101” lectures to familiarize participants with the fundamental concepts of the subjects. The second phase consisted of advanced seminars from renowned professors and researchers addressing their cross-disciplinary use of the skills highlighted in phase one.

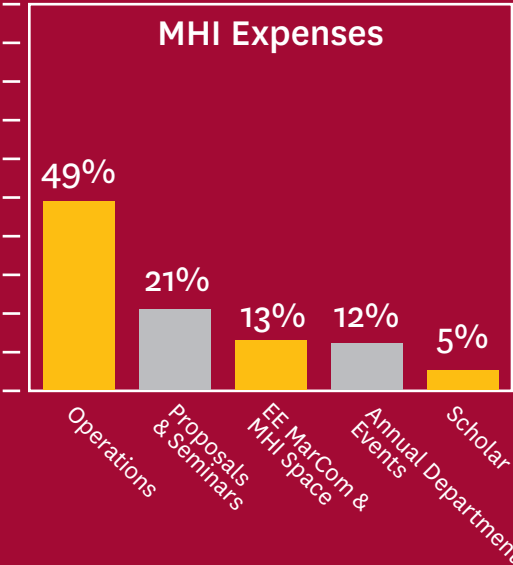
MHI Scholars also made themselves available as mentors and advisors to interested students, encouraging research proposals and connecting them with researchers in their respective fields of interest to engage in collaborative research.

Top students from the department also presented work. Student speakers included Soheil Soltani (soon-to-be Postdoctoral Researcher at Caltech), Debarun Kar (now a Data Scientist at Goldman Sachs), and MHI Scholar Erick Moen. Around 300 students from Electrical Engineering, Computer Science, Biomedical Engineering, and Cinema Departments registered.



ABOUT THE MING HSIEH INSTITUTE

The Ming Hsieh Institute (MHI) is focused on enhancing academic and research programs within the Ming Hsieh Department of Electrical Engineering. Through supporting innovative activities and hosting leading researchers from around the globe, MHI helps position the department at the forefront of emerging fields within electrical engineering.



- 49% Operations**
Supported faculty & staff payroll
- 21% Proposals & Seminars**
Enabled leading researchers from around the world to visit, give talks, and work with faculty and students
- 13% EE MarCom & MHI Space**
Upgraded the AV system in the conference room, created brainstorming energy in the lounge
- 12% Annual Department Events**
Developed & organized by MHI to encourage collaboration between faculty, students, and alumni
- 5% Scholar Program**
Awards, travel funding, workshop and event support to MHI Ph.D. Scholars

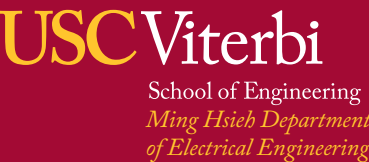
MHI Leadership

- Shri Narayanan, Director
- Hossein Hashemi, Co-Director
- Bhaskar Krishnamachari, Co-Director
- Cathy Huang, Business Officer
- Benjamin Paul, Communications Manager

2016-2017 Faculty Advisory Council

- Salman Avestimehr
- Rehan Kapadia
- Mahta Moghaddam
- Krishna Nayak
- Antonio Ortega

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Murals from the Viterbi Museum by Sandro Chia

ANNUAL REPORT
2016/2017

CELEBRATING 50 YEARS OF
THE VITERBI ALGORITHM

Ming Hsieh Institute
intelligent technologies to empower mankind

EVENTS



New PhD Student Welcome Dinner October 12, 2016

Annually hosted with EE Student Services. MHI Scholars met with new PhD students to provide mentorship, resources and fun. Last year's competition: Paper airplane making



Holiday Open House December 19, 2016

A better way to end the year! Music, food, drinks, singing - with MHI Director, Shri as bartender! Last year's special guest - Dr. Hsieh himself!



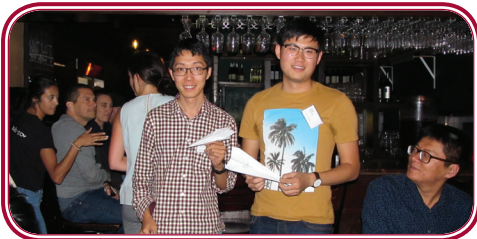
Lab Open House for Undergrads March 31, 2017

A total of six labs presented their current research projects and opportunities to the undergraduates to help them get their research started early.



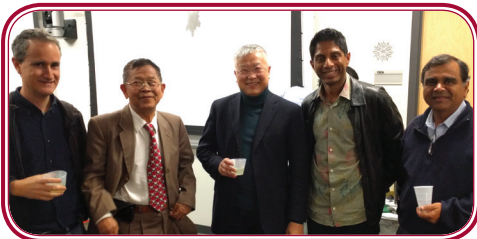
MHI Open House - Undergraduates September 2, 2016

An Open House for all undergraduates that are new to EE. Students were able to interact with professors and upper classmen casually to ask questions.



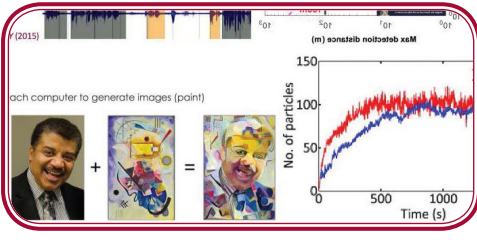
7th Annual EE Research Festival November 18, 2016

MHI welcomed the entire USC Viterbi community, alumni and engineering industry representatives to the showcase of current student projects. (Undergraduate Brandon Horton demos scientific visualization using VR.)



Prof. O'Brien Memorial Lunch April 21, 2017

The Memorial lunch for Professor and Executive Vice Dean John O'Brien brought together his family, friends, past students, and coworkers to share memories of him.



EE PhD Commencement Luncheon May 11, 2017

EE Ph.D. graduates from the class of 2016 were invited to celebrate their accomplishments. Advisors spoke about their students' time at the Ming Hsieh Department of EE.

SEMINARS

MHI CommNets and Systems Seminar Series

This series is a weekly seminar that brings together faculty and students in communications, networks and controls. One of the primary goals of the series is to expose students to the work taking place in other areas of engineering.
2016-17 Number of speakers: 23
2016-17 Budget: \$10,000

MHI Computer Engineering Research Seminar Series

This series offers an interdisciplinary perspective on the cutting-edge research and development in the computer engineering field. Computer engineering deals with the design, development, testing, and evaluation of componenets, systems, and networks. It provides society with many critical utilities.
2016-17 Number of speakers: 21
2016-17 Budget: \$20,000

MHI Cyber-Physical Systems Seminar Series

The first edition of the Cyber-Physical Systems Seminar Series was especially active in 2016. Visitors from industry and leading universities participated in the Spring as part of class EE 598. Even more talks will be scheduled for Fall of 2017.
2016-17 Number of speakers: 34
2016-17 Budget: \$10,000

MHI Integrated Systems Seminar Series

This series hosts researchers to cover topics related to integrated circuits, systems, and related devices in the context of diverse applications including communication, computation, networking, sensing and imaging. Speakers from academia and industry covered topics related to brain-inspired integrated circuits for computation and communications, silicon integrated circuits, and high-speed integrated transceivers.
2016-17 Number of speakers: 13
2016-17 Budget: \$10,000

MHI Medical Imaging Seminar Series

This series features lecturers from leading universities and medical institutions in the US and abroad on all topics related to the various aspects of medical imaging.
2016-17 Number of speakers: 9
2016-17 Budget: \$13,000 (continuing to run on funds from 2015-16)

MHI Nano Materials and Devices Seminar Series

This series aims to expose students to cutting-edge research in the field of nanotechnology. In 2016-17, leaders in academia and industrial research institutes shared their most recent achievement in the diverse field of nanoscale materials, devices and systems.
2016-17 Number of speakers: 16
2016-17 Budget: \$15,000

MHI Research and Technology Seminar Series

Developed in the Fall of 2016, this series focuses on inviting speakers from the industry to do technical sharing from the industry side. Speakers and EE students get to exchange ideas and brainstorm solutions. This year, Industry speakers are from VMWare, Google and Uber.



Dr. George Bekey and Professor Gaurav Sukhatme at the Electrical Engineering Pioneer Series held on October 3, 2016

MHI Electrical Engineering Pioneer Seminar Series

The EE Pioneer Seminar Series focuses its attention on the stories and journeys of the many faculty who have been a crucial part of the growth and evolution of the EE Department over the last several decades. This year's EE Pioneer Series was joint effort with the Viterbi Remarkable Trajectory Lecture Series to honor Dr. George Bekey.

MHI Emerging Trends Seminar Series

The Emerging Trends Seminar Series features Electrical Engineering faculty member sharing his/her recent work. The series focuses on looking inward and encourage the EE department to learn from our own fellow faculty members and explore the great researches on campus. This year the faculty learned from Prof. Jay Kuo and Prof. Kai Hwang.

WORKSHOPS & VISITORS PROGRAM

Workshop in Preparation of a White Paper for Semiconductor Research Council Joint University Microelectronics Program (SRC JUMP)

This all-day workshop brought together 16 of the 21 researchers who submitted a White Paper title "P2I: Physics to Information" in response to the SRC JUMP. Several collaborative research topics emerged from this meeting and provided valuable input for the white paper.

Pre-proposal Workshop on Internet of Battlefield Things

The workshop gathered 18 leading researchers from diverse areas to support the development of a white paper to the Army Research Laboratory. USC (including efforts and resources from ISI and ICT) led this particular effort, in partnership with MIT and Stanford.

Dr. David Allstot *UC Berkeley (PI: Eun Sok Kim, Anthony Levi, Hossein Hashemi, and Mike Chen)* Fall 2016 Dr. Allstot is the director of the Berkeley Wireless Research Center. During his visit, he met with the dean, three vice deans, three department chairs, 14 EE faculty, and two BME faculty members. In addition to sharing his expert knowledge in the RF Circuits and Systems areas, there is a high potential for future collaboration.

Dr. Magnus Halldorsson *Reykjavik University (PI: Bhaskar Krishnamachari)* Spring 2017 Dr. Halldorsson is the leading expert in algorithms for distributed computing and wireless networks. During his visit, he interacted with several EE and CS faculty and students working on wireless networks and controls and combinatorial algorithms.