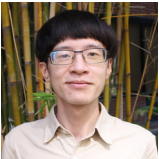# SCHOLARS
MHI 2023-24 PhD SCHOLARS

Each year, a select group of PhD students from the ECE Department are chosen as Ming Hsieh Institute Scholars. These students are carefully reviewed 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.

Ho-Chun Lin
Advisor: Wade Hsu

Juzheng Liu
Advisor: Mike Chen

Pooria Namyar
Advisor: Ramesh Govindan

Yuke Zhang
Advisor: Peter Beerel

Ziwei Zhao
Advisor: Krishna Nayak

The 2023-2024 MHI PhD Scholars joint efforts with WiEE to organize two social events for the ECE community. The first event was to decorate an ecosystem with airplants where 40+ PhD students and several staff participated. The second event was an ice-cream social for our PhD students and some faculty. The events were very successful in creating the bonds among ECE PhD students and between faculty and staff.

MHI 2023-24 UNDERGRAD SCHOLARS

2022-2023 marked the formation of the MHI Undergrad Scholar cohort. Each MHI Undergrad Scholar excels in doing research as an undergraduate student. Two of the first cohort received NSF Graduate Research Fellowships. They also led the formation of Undergraduate Research Hub to build a community for undergraduates that are doing research to get together to exchange ideas and experiences.
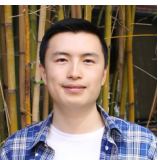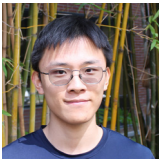

Matthew Ai
Advisor: Eli M. Levenson-Falk

Kary Angelly Cabrera
Advisor: Shrikanth Narayanan

Pooja Kowshik
Advisor: Krishna Nayak

Tianhao Wu
Advisor: Somil Bansal

Grace Zhang
Advisor: Hossein Hashemi

MING HSIEH INSTITUTE

The Ming Hsieh Institute (MHI) is focused on enhancing academic and research programs within the Ming Hsieh Department of Electrical and Computer 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 and computer engineering.

MHI Expenses
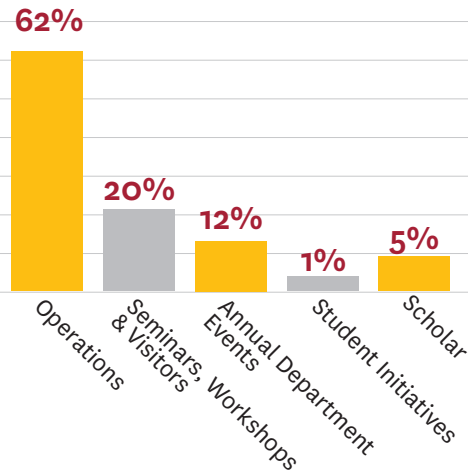
	Operations
62%	Supported faculty & staff payroll
20%	**Seminars, Workshops, and Visitors** Enabled leading researchers from around the world to visit, give talks, and work with faculty and students
12%	**Annual Department Events** Developed & organized by MHI to encourage collaboration between faculty, students, and alumni
1%	**Student Initiatives** Funding to support all innovative ideas and projects initiated by students ,
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

Landon Hall, Communications Manager

2023-2024 Faculty Advisory Council

Salman Avestimehr

Rehan Kapadia

Mahta Moghaddam

Krishna Nayak

Antonio Ortega

Mike Chen

Mihailo Jovanovic

USC Viterbi
School of Engineering
Ming Hsieh Department of
Electrical and Computer Engineering

Ming Hsieh Institute
intelligent technologies to empower mankind

by Kaley Tien

USC Viterbi

ANNUAL REPORT
2023/2024

SEMINARS

Series in AI Foundation for the Sciences
For the lunch series, this will be a space for faculty and specially students with interests in optimization, machine learning, statistics, high-dimensional probability, signal processing and systems to interact and learn about some recent advances in the area. This year we have a particular focus on LLMs. The main focus of the series will be on students. We will put together a list of tutorials/papers to read for the coming weeks. In each session a student will take the lead in presenting the paper and discussing some of the mathematical proofs of the paper in detail. We then will further discuss the paper as a group. In addition to providing a learning environment, this will also help students hone their presentation skills.

2023-24 Number of speakers: 10
2022-23 Budget: $9,000

Cyber-Physical Systems Research Seminar Series
The ECE department intends to expand in the research area of autonomy, Cyber-Physical Systems, and Internet-of-Things, with a plan to hire more faculty. To connect our faculties and students to state-of-the-art researchers and seek potential faculty candidates, we organized the cyber-physical systems research seminar series.

2023-24 Number of speakers: 26
2023-24 Budget: $20,559.64

Quantum Science and Technology Seminar Series
The ECE electro-physics department is intending to expand in the research area of quantum information science and engineering (QISE), with plan in hiring more faculty. To connect to state-of-the-art researchers and seek potential faculty candidates, we organized the quantum science and technology seminar series.

2023-24 Number of speakers: 10
2023-24 Budget: $10,000

Semiconductors & Microelectronics Technology Seminar Series
The research in semiconductor materials, microelectronic devices and systems is a highly multidisciplinary field with rapidly emerging scientific breakthroughs and technological innovations that can impact our life and society in the years to come. There has been renewed emphasis on such topics from industry, government, and academia. The Ming Hsieh Department of Electrical Engineering at USC is uniquely positioned in this research field with a strong cluster of leading scientists and engineers focusing on material synthesis, characterization, advanced nanodevice fabrication and testing, as well as system level applications. This seminar series aims to bring together students, researchers and faculties from USC EE and beyond to interact with the leading worldwide experts in nanoscale science and technology research.

2023-24 Number of speakers: 11
2023-24 Budget: $10,000

MHI Nano Materials and Devices Seminar Series
Since fall 2008, Integrated Systems Seminar Series has been held at USC. Speakers from academia and industry have come to USC to give a talk on various aspects related in Integrated Systems, Circuits, and Devices with wide range of applications including communication, computation, networking, sensing, and imaging. Most speakers meet with selected faculty, Ph.D. students, and post-doctoral scholars within the Ming Hsieh Department of Electrical Engineering during their visit at USC. Some speakers attract audience beyond the Electrical Engineering, including those from Biomedical Engineering, Computer Science, and Materials Sciences.

2023-24 Number of speakers: 7
2023-24 Budget: Rolled over from prior year $15,000

July 2023

GRSS-MHI Remote Sensing Summer School
International Geoscience and Remote Sensing Symposium (IGARSS) 2023 organizing committee and IEEE University of Southern California GRSS/APS/SSCS joint student branch chapter organized a summer school on topics including synthetic aperture radar, geospatial analysis, space-based environmental monitoring, and their broad applications in geosciences and remote sensing.

August 2023

MHI Open House
An Open House for all undergraduates that are new to ECE. Students were able to interact with professors and upper classmen casually to ask questions. We were so excited to host this event in person this year. The students were very eager to attend and learn about their new home for the next 4 years.

October 2023

ECE Annual Research Festival
The 13th Annual Research Festival combined a great variety of research collaborations, project show cases from three student organizations (USC Makers, IEEE, & SC Solar Car), over 120 research poster presentations from our PhD, MS, and BS students. Industry partners set up info booths for our ECE community to learn more about their companies for future collaborations.

Fall 2023

GEEKS
GEEKS aims to promote engagement among graduate students in the department by organizing social and networking events for ECE students, with a particular focus on the doctoral student body. Over the 2022-2023 academic year, GEEKS hosted a total of 17 social events, which included coffee hours and game nights..

March 2024

ECE MHI + WiSE
In the Spring 2024 semester, two events were hosted with the sponsorships from ECE MHI department and Women in Women in Science & Engineering (WiSE) at USC, to help support women in Electrical and Computer Engineering. This was initiated by Ziwei Zhao, Yuke Zhang (2023-2024 MHI scholars) with Prof Leana Golubchik, who is the current director of WiSE program. The aim for these events is for community building, friends making, and help all women in ECE for career developments and guidance.

May 2024

ECE PhD Commencement Celebration
ECE PhD graduates from the class of 2023 were invited to celebrate their accomplishments from whereever they are at. Their family and friends from all the around the world called in to celebrate this proud moment with them. Faculty advisors shared moments and stories of the graduates with their family and friends.

STUDENT ORGANIZATIONS

MHI 2023-24 USC MAKERS
This year, ten Makers projects were fully funded by MHI, enabling our project members and managers to bring their wildest dreams and innovations to life. Each project combined hardware, software, and mechanical components, with the project members' interests and passions. These projects ranged from foosball to music to green energy. See some of the projects and their team members below!
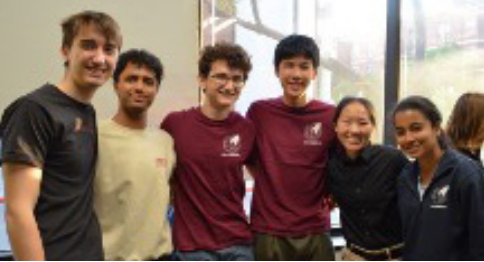
MHI 2023-24 USC IEEE
The IEEE committee successfully organized the 2024 Hack IoT, and from feedback provided by the participants, they are able to identify the positives from this event and the areas in which possible improvements could be made. To begin with, the majority of the students enjoyed this event and found it beneficial, which was a main goal of this event. They offered students a variety of hardware, provided them with a great space to work in. The participants mentioned that they really enjoyed everyone's projects this year as well as the food provided throughout the event. Another positive feedback was the flexibility of the event, and it seemed that the time provided was sufficient, as this year's event was for about 38 hours, compared to 24 hours in previous years. Timing improvement was a suggestion from previous years, and implementing it this year proved successful.