

Industrial Engineering
Newsletter Fall 2023

OPTIMUM

ENGINEERED FOR
WHAT'S NEXT.



Cullen College of Engineering
UNIVERSITY OF HOUSTON

Letter from the Chair



Dear Colleagues,

Greetings and I hope that the fall semester has treated you well! I am proud to share some of the highlights and exciting accomplishments we have accomplished over the last six months. We recruited high-caliber faculty, significantly enhanced two new programs (B.S. degree in Systems Engineering and Master's degree in Engineering Management) and connected with outstanding alumni. I encourage you to reach out and visit our department when able, we are always seeking new and exciting partnerships.

Warm Regards,

Gino J. Lim, Ph.D.

R. Larry and Gerlene (Gerri) R. Snider Endowed Chair in Industrial Engineering
Cullen College of Engineering
University of Houston

UH IE **BY THE NUMBERS**



ENROLLMENT
(FALL 2023)

128 UNDERGRADUATE
STUDENTS

213 GRADUATE
STUDENTS



**DEGREES
AWARDED**
(FY 2023)



38 B.S.



130 M.S.



4 PH.D.



DEPARTMENT HIGHLIGHTS

UH IE GRADUATE PROGRAM RANKED IN TOP 50 BY U.S. NEWS & WORLD REPORT

INDUSTRIAL ENGINEERING

The Industrial Engineering graduate program at the University of Houston's Cullen College of Engineering was named a top 50 program in the latest annual rankings edition of U.S. News & World Report.

Overall, the Cullen College of Engineering was rated as the No. 69 graduate school in the nation. As of Fall 2022, the Cullen College of Engineering had about 3,266 undergraduate students enrolled, as well as 1,044 students pursuing Masters' degrees, and 558 doctoral students. The College awarded 569 undergraduate degrees, 212 Master's degrees and 101 doctorates in FY 2022. ⚙️

NEW

FACULTY

MATTHEW HU



Dr. Matthew Hu, serves as a lecturer and the Program Director of the Engineering Management Program in the Industrial Engineering Department in the Cullen College of Engineering. Hu earned his doctorate in Industrial Engineering from Wayne State University in Michigan. He has more than 20 years experience as an adjunct professor at the University of Houston, Wayne State University, Walsh College and Tianjin University in China. He was also employed as an instructor and trainer for the Ford Motor Company Design Institute.

NEW

FACULTY

NEIL DIAZ MARTINEZ



Neil Diaz Martinez, has joined the Industrial Engineering Department as a Lecturer. Martinez earned his doctorate in Industrial Engineering this year from Texas A&M, where he has also served as an instructor for the past two years. He was employed in various roles in the IT field in Colombia for 11 years before pursuing his doctorate.

FACULTY

PROMOTIONS

YING LIN

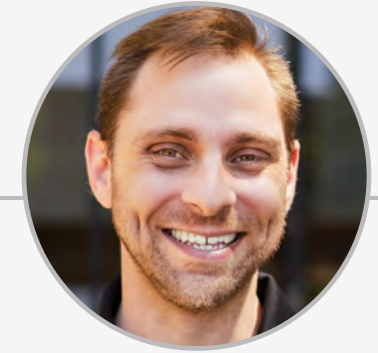


Ying Lin, joined the Industrial Engineering Department back in Fall 2017 as an assistant professor. Lin has been promoted to associate professor in Fall 2023. Prior to joining UH, she earned her Ph.D. in industrial and systems engineering at the University of Washington in Seattle.

FACULTY

PROMOTIONS

NATHANIAL WIGGINS



Nathaniel Wiggins, joined the department back in Fall 2021 as a senior lecturer for the systems engineering program. Wiggins has been promoted to instructional assistant professor. Prior to that role, he was a distinguished professor of Engineering and Mathematics at San Jacinto College for 12 years. He earned his doctorate in Systems and Engineering Management from Texas Tech in 2020.

NSF CAREER AWARD WINNER

TO JOIN UH IE DEPARTMENT IN SPRING 2024

Dr. Na Zou will join the Cullen College of Engineering as an Assistant Professor for the Spring 2024 semester. Zou currently serves as an Assistant Professor in the Department of Engineering Technology and Industrial Distribution at Texas A&M University. Zou's research focuses on developing data-centric fairness frameworks.

Zou's research was selected for an NSF CAREER award in 2023. The funding supports early-career faculty who have the potential to serve as academic role models in research and education and to lead advances in the mission of their department or organization. The grant, "Exploring and Exploiting Data-Centric Modeling for Fairness in Machine Learning," is for \$547,741 and runs through an estimated end date of April 2028.

Zou believes the outcome of this project will lead to advances in facilitating fairness in computing. This project will produce effective and efficient algorithms to explore fair data characteristics from different perspectives and enhance generalization and trust in the machine learning field. Zou's research is expected to impact the broad utilization of machine learning algorithms in essential applications, enabling non-discrimination decision-making processes and prompting more transparent platform for future information systems.

Zou says that fair machine learning has the potential to reduce or eliminate bias from the decision-making process, avoid making unwarranted implicit associations or amplifying societal stereotypes about people. ⚙️



Pictured: Na Zou

DEPARTMENT HIGHLIGHTS

MASTER'S OF ENGINEERING MANAGEMENT A FULLY ONLINE OFFERING



LEARN MORE AND APPLY TODAY AT:
WWW.IE.UH.EDU

INDUSTRIAL ENGINEERING



Students can take an online 30-credit hour master's in Engineering Management through the University of Houston's new UH Extend initiative. UH Extend is designed for students seeking fully online degree and certificate programs that are both convenient and affordable.

Engineering Management (EM) bridges the gap between engineering and technological problem-solving abilities of engineers with administrative skills for leading the day to day operations of today's complex organizations within the current global economy. The scope of EM includes engineering principles, business functions and advanced technologies. ⚙️

University of Houston | Cullen College of Engineering

FACULTY

ACCOLADES

GINO LIM



Gino Lim earned the 2023 Distinguished Educator Award at the 8th North American Industrial Engineering & Operations Management (IEOM) Conference. The award recognizes industrial engineering and operations management educators who have significantly contributed to the field through the publication of books and articles in peer reviewed journals; drawn externally funded research; employed creative teaching methods; and developed teaching aides; including software and other innovative methods.

YING LIN



Ying Lin earned the Data Analytics Award at the 8th North American Industrial Engineering & Operations Management (IEOM) Conference. This award recognizes the outstanding achievements and contributions to the field of industrial engineering and operations management.

JAMISON KOVACH



Jamison V. Kovach, the PMI Houston Endowed Professor in Project Management, is the 2023 recipient of the Industrial Engineering and Operations Management (IEOM) Society International's Lean Six Sigma Award. The award recognizes outstanding best practices using Lean and Six Sigma. Lean Six Sigma is a business philosophy focusing on breakthrough improvement. It incorporates Lean philosophies with the Six Sigma methodology. ⚙️

FENG, LIN EARN AMI GRANT FOR SUPERCONDUCTOR MANUFACTURING REFINEMENT

A pair of professors from the Industrial Engineering Department at the Cullen College of Engineering have received a grant from the University of Houston's Advanced Manufacturing Institute (AMI) to investigate using machine learning to improve the manufacturing of superconductors.

"Machine Learning-based Process-Structure-Property (PSP) Modeling and Monitoring for Superconductor Manufacturing" is funded for \$35,000. The AMI supports the transition of lab-scale technology to fully-fledged manufactured products for the market, and addresses manufacturing challenges by creating solutions in manufacturing R&D.

Qianmei (May) Feng – a professor, Brij and Sunita Agrawal Faculty Fellow and a Graduate Program Director in the Industrial Engineering Department – is the co- PI for the project.

Ying Lin, the lead PI an associate professor in the Industrial Engineering Department. Lin is also the director of the Smart Health & Intelligent Engineering Systems (SHINES) Lab.

According to an abstract for the project, their research is focused improving the manufacturing process for high-temperature superconductors (HTS). The research was started earlier this year, and will continue through the end of the year. The grant continues earlier research that the pair also received AMI funding for. ⚙️



Pictured: L: Qianmei (May) Feng, R: Ying Lin



Pictured: Yisha Xiang

IE'S XIANG EARNS **AMI GRANT FOR SUPERCONDUCTOR RESEARCH**

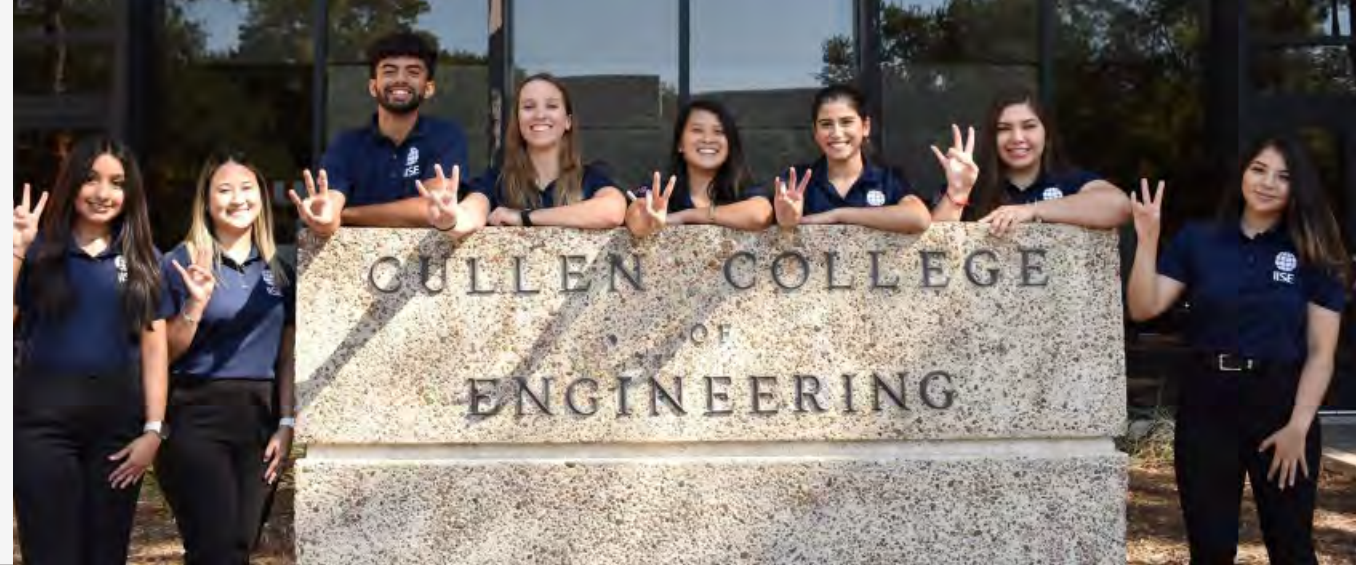
Yisha Xiang, associate professor in the Industrial Engineering Department of the Cullen College of Engineering, has received a grant from the University of Houston's Advanced Manufacturing Institute to apply machine learning methods to control the manufacturing process of high temperature superconductors (HTS). The goal of the research is to develop efficient and effective statistical machine learning methods to control the HTS manufacturing process.

"We aim to achieve this objective by creating novel and advanced models and algorithms to quantify the effects of the process variables dynamically on the quality and properties of HTS tapes and to predict the shift in the HTS manufacturing process so that process adjustment can be made in advance," Xiang wrote. "HTS has great potential to enable a number of groundbreaking science and technologies such as the game-changing compact fusion reactors and the highly anticipated aircraft motors."

Xiang joined the Cullen faculty in Fall 2022. She earned an NSF CAREER award in 2020, for her research proposal, "Enhancing Environmental and Economic Sustainability of Additive Manufacturing-based Remanufacturing." Research will continue on the project through the year. ⚙️

STUDENT

ORGANIZATIONS



The UH Institute of Industrial and Systems Engineers has been awarded the Gold Chapter Award for the second straight year. The award is the highest honor in the IISE University Chapter Recognition Program. The president for the preceding academic year was Diane Nguyen, who is now a senior industrial engineering student at the Cullen College of Engineering. She said that when notified of the award, she was “extremely proud” of her fellow UH IISE officers that made it possible. ⚙️

STUDENT

SUCCESS



JORDYN SIBERT

Jordyn Sibert, a systems engineering student in the Industrial Engineering Department at the Cullen College of Engineering, is the latest SMART scholarship recipient from the University of Houston. The scholarship will cover Sibert's tuition for the rest of her undergraduate degree pursuit, while also providing a stipend and a health allowance. Beyond financial support, the scholarship will also provide Sibert an opportunity to work directly in a government-affiliated, STEM-related field, via an internship in Summer 2024. ⚙️



Pictured: Viraj Lele

IE GRAD PROVIDES A CASE STUDY FOR **IMPORTANCE OF LOGISTICS**

A graduate of the Industrial Engineering master's program at the University of Houston's Cullen College of Engineering is now leading a team optimizing the operational dynamics at DHL as the firm continues to grow in size and revenue.

Viraj Lele earned his Master of Engineering in 2017, after completing his undergraduate studies at the University of Mumbai in 2014 with gold medalist distinction. He has also since earned a Master of Science degree from Penn State in 2020. This knowledge has merged with his experience in the field in order to be a valued member to perform critical roles at DHL Supply Chain. Lele's work has been recognized in several different ways. He was interviewed for an article on Artvoice in January 2023 about the growth of DHL. Lele also contributed three papers to the International Journal of Science and Research one of which was while at UH. Lele is currently leading other projects with managing supervisors, operations managers and associates in making their facility move towards LEAN processes. He likes to keep a mantra in mind when confronting problems.

"When challenges are high, only achievers rise above it," he said. ⚙️

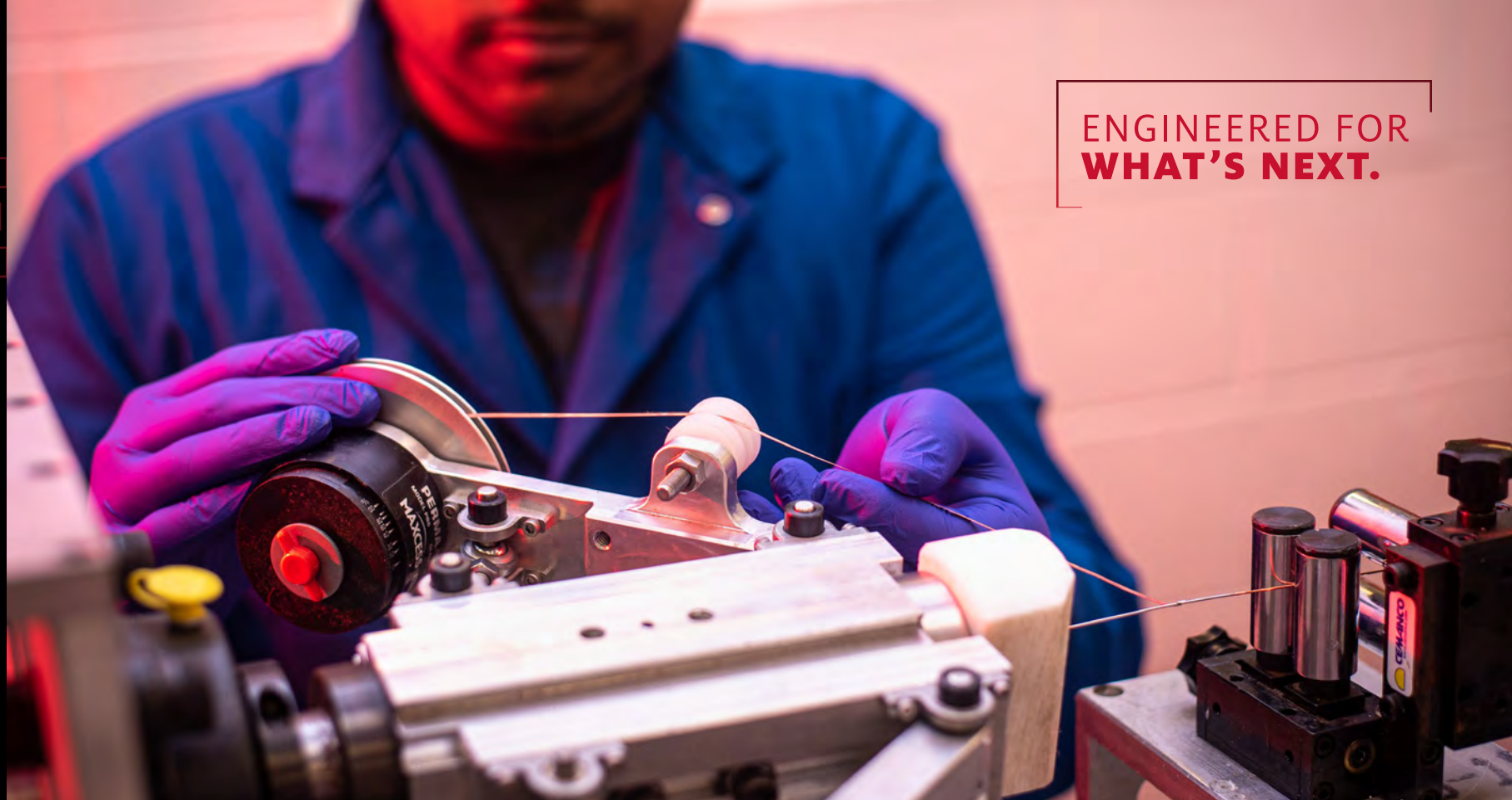
CULLEN

COLLEGE

The University of Houston

Cullen College of Engineering

The University of Houston Cullen College of Engineering addresses key challenges in energy, healthcare, infrastructure, and the environment by conducting cutting-edge research and graduating hundreds of world-class engineers each year. With research expenditures topping \$40 million and increasing each year, we continue to follow our tradition of excellence in spearheading research that has a real, direct impact in the Houston region and beyond.



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WHAT'S NEXT.



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UNIVERSITY OF HOUSTON

UH Cullen College of Engineering
Department of Industrial Engineering
Engineering Building 2, Room E 206
4222 Martin Luther King Boulevard
Houston TX 77204-4008

    @UHEngineering



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