(a) Specialty: advanced manufacturing, data science, AI/deep learning, design, automation, mechatronics, robotics/haptics, VR/AR, computational optimization, meta-heuristics, modeling and simulation, mariner and offshore safety, port management and logistics, Engineering Education, etc.

(b) Interdisciplinary Research: I have secured $9.2M ($5M as PI; $6.4M since joining UH in fall 2018) funding from UH (6), Lamar (18), Gill Foundation (3), industry (2), Texas (1), Ship Operations Cooperative Program (1), American Bureau of Shipping (3), National Academy of Science, Engineering and Medicine (NASEM) (2), Ocean Energy Safety Institute (1), U.S. Department of Agriculture (USDA) (3), Environmental Protection Agency (1), and National Science Foundation (NSF) (8). I have consulted with several industrial projects in haptics, manufacturing, and reliability. My research is built on rigorous methodology and solid collaboration with many other researchers.

(c) Teaching: I have created 11 new courses, lectured 200+ sections and guided or supported 200+ labs in CAD/CAM, manufacturing, automation, robotics, dynamics, and simulation since Fall 2005. The total credit hours are ~9,000 for ~3,600 students as of fall 2023. I have developed 3 online courses that passed 'Quality Matters' (QM) certification. I am a certified QM reviewer and have reviewed QM courses 12 times.

(d) Publication: I have published 120+ refereed papers. I am the first author or the corresponding author for many papers. Some papers are single authored or co-authored with students. For many projects that requires programming, I personally work on the coding on PC, mobile devices, and GPU. I have received three Best Paper Awards.

(e) Student: I have advised many undergraduate research projects, 5 undergraduate research fellows, 6 master theses, 1 master project, and 5 doctoral dissertations. Currently I am co-advising 13 doctoral students and 1 master student. I have involved 200+ undergraduate students in engineering education research. The 'Engineering Economics Jeopardy!' and 'Engineering Economics Career' apps developed by us have been downloaded 10,000+ times worldwide. I mentor 1~2 senior design project teams each year. Since Fall 2022 I am teaching senior design projects (16~20 teams / semester).

(f) Internal services: Currently I am the Program Coordinator of UH MET program and completed hosting the ABET visit in 2022. From 2006 to 2018, I had served as the Graduate Advisor for Lamar IE graduate program which had varied from ~30 to ~220 students. I had contributed significantly to ABET accreditation and SACS affirmation process. I was the SACS coordinator for Master of Engineering (ME), Master of Engineering Science (MES) and Doctor of Engineering (DE) degrees in the College of Engineering at Lamar from 2007 to 2016, and for Industrial Engineering from 2007 to 2018. Each year, I lead a team with members from five engineering departments to define rubrics, collect data, compile reports, and submit reports of ME/MES/DE programs to the Weave System. In 2014, I led a team to complete the SACS Program Improvement Reports (similar to ABET reports in terms of workload) for ME/MES/DE programs. I was elected as faculty senator, research council member, and undergraduate research committee member. I have served in committees at the department, college, and university levels. I have supported many student extracurricular activities.

(g) External services: I have served in 25 NSF panels, 5 NIH panels, 4 ORAU panels, as program committee members, associate editor, symposium organizer, track chair, session chairs, and reviewers for 30 journals and 36 conferences. I have co-founded Modeling & Simulation Division for IISE. I have given seminars and invited talks to several hundreds of K-12 students and teachers in the past years.

(h) Industry: I have two years of commercial software and hardware development experience. I am proficient in Information Technology and programming under Windows, Mac, Linux, Android, and iOS. I provided haptic SDK training in Germany, Japan, and China as a domain expert. I provided consulting service to several companies in medical simulation, reliability, and statistics.

(i) Recognition: I received the 2009 LU Merit Award which is granted to 3 or 4 junior faculty members per year. I received the 2015 inaugural Distinguished Faculty Fellow in Teaching which is granted to only 3 faculty members of any rank each year. I received 2018 University Scholar Award, the highest research award to only one faculty member each year at Lamar. I have been granted 3 NSF fellowships. I am the UH University Ambassador for Nvidia Deep Learning Institute. I am a '50-in-5' UH scholar.

Weihang Zhu

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Mechanical Engineering Technology Program
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University of Houston
Houston, Texas 77204

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Phone: 713.256.2890 (C)

Education

2000 – 2003 North Carolina State University (NCSU), Raleigh, North Carolina, USA

- Ph.D. Industrial Engineering
- Dissertation: "*Virtual Sculpting and Polyhedral Machining Planning System with Haptic Interface*"

  Advisor: Dr. Yuan-Shin Lee, ASME Fellow, IISE Fellow
- Minor: Computer Science

1997 – 2000 Zhejiang University (ZJU), Hangzhou

- M.S. Mechanical and Energy Engineering, 2000
- Thesis: "*Power Plant Online Performance Optimization and Production Information System in Intranet*"

  Advisors: Prof. Haoren Ren and Prof. Deren Shen

1993 – 1997 Zhejiang University (ZJU), Hangzhou

- B.S. Thermal Energy Engineering, 1997
- Thesis: "*Automated Power Plant Report Generation*"

  Advisor: Prof. Deren Shen and Prof. Jianhong Chen
- Advanced Class of Engineering Education (ACEE, an honor class for top Engineering students selected from freshmen of ZJU, part of Chu Kechen Honors College) 1994~1997;
- Advanced Class of Physics, 1994~1995;

Certificate and Training

- NVIDIA Deep Learning Institute University Ambassador, Certified Instructor (2021 – 2022)
  - Fundamentals of Accelerated Computing with CUDA C/C++
  - Fundamentals of Deep Learning
  - Applications of AI for Predictive Maintenance
  - Computer Vision for Industrial Inspection
- University of Houston HPE Data Science Institute, Certificates (2020 – 2021)
  - Introduction to Cluster Computing
  - Introduction to Machine Learning
  - Data Science and Scientific Computing using Julia
  - R for Data Science
  - Data Visualization using ParaView and Tableau
- HAAS CNC Mill and Lathe Training, 2019
- Fanuc Robot Programing Training, 2022
- University of Houston Cougar Chairs Leadership Academy (CCLA) (2021 – 2022)

- "Quality Matters" Online Course Certified Reviewer (2016 – present)

Professional Experience

2018 – present **University of Houston**
Professor of Mechanical Engineering Technology

- Founding the *Computational Optimization and Smart Systems (COSS)* Lab:
  - The lab is equipped with Kuka KR-6 Robot, Meca500 Robot, Yamaha X-Y high precision linear stage, SonoPlot Microplotter (50% ownership), Peter Pugmill, Nano3DPrint A2200, 5-axis CNC machine, HTC Vive Cosmos, HTC Vive Pro Eye, Oculus Rift HMD, Meta 2 AR HMD, 2 sets of Geomagic Touch haptic devices, 4 sets of Novint Falcon haptic devices, FDM 3D Printers, Form2 SLA 3D Printer, DLP 3D Printer, Markforged Mark II Composite 3D Printer, Laser Engraver, Structure 3D Sensor, Lego Mindstorm Robot, uARM robotic arm, 360 Fly 4K camera, many Arduino/BeagleBone Black/Raspberry Pi/Intel Edison embedded system and IoT accessories; SolidWorks, Autodesk Fusion 360, Ansys, Matlab, R, JMP, Unity3D, 3DS Max, Maya, Simio, CPlex, AIMMS, *etc*;

2005 – 2018 **Lamar University**
Assistant Professor (2005), Associate Professor (2011), Professor (2018)

- Founding the *Zhu Lab* of Industrial Engineering:
- Supervising the lab technician/instructor and the *Manufacturing lab* of Industrial Engineering: CAD/CAM, lathes, CNC milling machines, robots, PLC automation, embedded controllers, *etc*.;
- Directing the curriculum development of manufacturing program in the department;

2004 – 2005 **Yantric Inc., Cambridge, MA**
Research Engineer

- Touch-based virtual medical simulation research and development (NIST and DoD funded R&D): development of *Epidural Simulator* for Regional Anesthesia, which received critical acclaim at several conferences such as SIGGRAPH, MMVR and WorldHaptics;

2004 – 2004 **SensAble Technologies Inc., Woburn, MA**
Specialist Engineer

- Development of haptics Virtual Reality devices and applications, and OpenHaptics SDK: Phantom series of haptic device research and development, *OpenHaptics* SDK development;
- Strengthen the collaborative relationship between SensAble and universities, institutions, corporate research teams and other companies;
- Business negotiation and on-site visits with companies in Europe and Asia-Pacific areas;
- Attend conferences and expositions such as IEEE haptics symposium and EuroHaptics to keep abreast with the latest haptic research; demonstrate Phantom Haptic devices and applications;
- Train international engineers on haptic software and hardware in Europe and Asia-Pacific areas;

2003 – 2003 **Bosch-Siemens Home Appliances Corporation, New Bern, NC**
Industrial Engineering Intern

2000 – 2003 **North Carolina State University, Raleigh, NC**
Graduate Teaching Assistant

Graduate Research Assistant

- CAD/CAM/CNC algorithms and software development (National Science Foundation and Army Research Office funded research): 3-axis and 5-axis polyhedral surface machining, high performance machining, feedrate control, NC simulation and verification, make experiments on CNC (3-axis Cincinnati Milacron and 5-axis Shoda machine), use Solidworks, Surfcam, Unigraphics and Rhino 3D, *etc*;
- Computer haptics and graphics: construct haptic device controller, develop haptic collision detection and response algorithm, explore haptic applications in Virtual Reality and CAD/CAM;

1997 – 2000 **Zhejiang University, Hangzhou**
Graduate Research Assistant

- Optimization algorithms and software development: economy analysis, production performance evaluation and optimization, and its software development;
- Power plant Intranet implementation: deploy process monitoring and control hardware; deploy computer network; collect and process power plant process information (boiler, turbine, generator, pump, *etc*), integrate power plant production and office automation in power plant Intranet, help in maintaining database (MS SQL Server) and website (IIS & Exchange Server);
- On-site experience in power plants: collaborate with and work in Zhejiang Meixi power plant, Zhejiang Wenzhou power plant, Zhejiang Jiaxin power plant, Zhejiang Jinhua power plant and Guangdong Shajiao power plant;

Research Interests

- Design and Manufacturing, and Automation
  - Robotics and Manufacturing Automation, climate smart agricultural automation and IoT data analysis
  - Haptics, virtual reality and augmented reality, medical simulation
  - Computational geometry
  - Computer-aided design and manufacturing
  - Design for 3D printing, 3D printer hardware structure and algorithm design
  - Smart Manufacturing and Industrial Internet of Things

- Modeling, Simulation, and Computational Optimization
  - Machine learning, deep learning, data science, computer vision
  - Metaheuristics algorithms and applications, multi-objective optimization
  - Reliability, maintenance, and repair modeling
  - Discrete event simulation, Agent-based modeling and simulation
  - GPU and high performance computing, computational biology
  - Energy system modeling and analytics: natural gas network operations, unit commitment, big data-driven ship fuel consumption optimization
  - Production planning and scheduling: parallel machine scheduling, food processing production
  - Supply chain: live supply chain, order acceptance and resource allocation in hybrid production strategy, inventory control in port management, Houston ship channel traffic management
  - Electronics packaging analysis and optimization
  - Computational materials, molecular dynamics

- Engineering Education
  - Research experience of K-12 students, teachers, preservice teachers, and undergraduates
  - Haptic-augmented learning for dynamics
  - Learning with mobile apps

- Mariner and Offshore Safety
  - Mariner near miss and injury databases
  - Mariner safety culture and safety leading indicators

- Big data analytics and data/text mining in safety data
- Offshore oil drilling platform safety culture
- ASTM Standard for Injury and Illness Data Collection and Reporting and the ASTM Standard for Near Miss Collection and Reporting
- Autonomous ship navigation and collision avoidance
- Lean manufacturing and scheduling in shipbuilding

Honors & Awards

- University of Houston Cullen College of Engineering Technology Division "Research Excellence" Award, 2023
- University of Houston "50-in-5 Scholar" Award, 2020
- Lamar "University Scholar" Award, 2018: one per year selected as the highest recognition for research
- Lamar University Distinguished Faculty Fellowship - Teaching, 2015 – 2018: one of the three inaugural awards to faculty of any ranks in 2015
- Lamar University Merit Award, 2009: one of the four awards to junior faculty in 2009
- Fellowship from NSF Summer Institute on Energy Manufacturing, Northwestern University, June - July 2010
- Fellowship from NSF Summer Institute on Cancer Nanotechnology, Houston, June 2010
- Fellowship from NSF Summer Institute on Nanomanufacturing, Northwestern University, June 2008
- Guang Hua Scholarship for Zhejiang University Graduate Students, 1998
- Privilege to enter Graduate School of Zhejiang University, exempted from the admission test, 1997
- Excellent Graduate Student of Zhejiang University and Zhejiang Province, 1997
- Zhejiang University Scholarship: the only student in the class that received First Prize every year 1994~1997
- China National Electricity Education Foundation, "New Star" Award, 1996

Graduate Students at University of Houston

Doctor of Philosophy Advisor:

- Sandesh Risal, Doctor of Philosophy in Mechanical Engineering, University of Houston, co-advised with Dr. Li Sun, started in spring 2019;
- Bikram Koirala, Doctor of Philosophy in Mechanical Engineering, University of Houston, co-advised with Dr. Cunjiang Yu, started in spring 2020;
- Muhammad Hussain, Doctor of Philosophy in Mechanical Engineering, University of Houston, co-advised with Dr. Li Sun, started in spring 2020;
- Ezra Wari, Doctor of Philosophy in Industrial Engineering, University of Houston, co-advised with Dr. Gino Lim, started in spring 2020;
- Arturo Haces-Garcia, Doctor of Philosophy in Electrical and Computer Engineering, University of Houston, to start in fall 2020;
- Ji'An Chen, Doctor of Philosophy in Mechanical Engineering, University of Houston, co-advised with Dr. Gangbing Song, started in fall 2021;
- Jiming Kang, Doctor of Philosophy in Mechanical Engineering, University of Houston, co-advised with Dr. Gangbing Song, started in fall 2022;
- Abishek Kafle, Doctor of Philosophy in Mechanical Engineering, University of Houston, co-advised with Dr. Gangbing Song, started in fall 2022;
- Raman Silwal, Doctor of Philosophy in Mechanical Engineering, University of Houston, co-advised with Dr. Gangbing Song, started in fall 2022;
- Alex Lu, Doctor of Philosophy in Mechanical Engineering, University of Houston, co-advised with Dr. Gangbing Song, started in fall 2022;
- Guoyang Shen, Doctor of Philosophy in Mechanical Engineering, University of Houston, co-advised with Dr. Gangbing Song, started in fall 2022;
- Pratikshya Tiwari, Doctor of Philosophy in Mechanical Engineering, University of Houston, co-advised with Dr. Gangbing Song, started in fall 2022;

Visiting Doctoral Student Advisor:
- Zhaoyi Zhang, Doctor of Philosophy in Maritime Engineering, Dalian Maritime University, Fall 2022 to Summer 2023;

Master of Science in Mechanical Engineering Technology Advisor:
- Bikram Koirala, Master of Science in Mechanical Engineering Technology, University of Houston, started in fall 2019 and switched to ME Ph.D. program in spring 2020;
- Kais Khemakhem, Master of Science in Mechanical Engineering Technology, University of Houston, fall 2020 to spring 2022;
- Christopher Kelly, Master of Science in Mechanical Engineering Technology, University of Houston, started in fall 2021;

Master of Science in Mechanical Engineering Advisor:
- Manjul Regmi, Master of Science in Mechanical Engineering, University of Houston, started in spring 2023;

Graduate Students at Lamar University

Doctor of Philosophy Committee:
- Xiang Li, Doctoral of Philosophy in Chemical Engineering, Lamar University, graduated in 2011; working for Bayer;
- Kailiang Zheng, Doctoral of Philosophy in Chemical Engineering, Lamar University, graduated in 2012; working for Bayer;
- Preeti Gangadharan, Doctoral of Philosophy in Chemical Engineering, Lamar University, graduated in 2013;

Doctor of Engineering Advisor:
- Ganesh Mudunuri, Doctor of Industrial Engineering, Lamar University, graduated in F2013; working for Dragon Products;
- Ezra Wari, Doctoral Student of Industrial Engineering, Lamar University, graduated in F2015; worked for Lamar University as an instructor and lab manager; currently pursuing Ph.D. at UH;
- Alem Demissie, Doctoral Student of Industrial Engineering, Lamar University, graduated in F2015, working as Lecturer of Industrial Engineering, American University of Sharjah, UAE;
- Arash Abedi, Doctoral Student of Industrial Engineering, Lamar University, graduated in S2017, working for Bank of America, Charlotte, NC;
- Mohammad Altayeb, Doctoral Student of Industrial Engineering, Lamar University, graduated in S2017, working for National Industry Development and Logistic Program, the largest program in Saudi Arabia under the Vision 2030;

Doctor of Engineering Committee:
- Pugalenthi Pandian, Doctor of Industrial Engineering, Lamar University, graduated in 2011; working for Schlumberger;
- B. Gangineni, Doctor of Industrial Engineering, Lamar University, graduated in 2012;
- Pridhvi Dandu, Doctor of Mechanical Engineering, Lamar University, graduated in 2012;
- Vishal Nagaraj, Doctor of Mechanical Engineering, Lamar University, graduated in 2012;
- Pavan Mhasavekar, Doctor of Industrial Engineering, Lamar University, graduated in 2013;
- Richshalla Papillion, Doctor of Industrial Engineering, Lamar University, graduated in 2014;
- Fatemeh Hosseinzadehdastak, Doctor of Industrial Engineering, Lamar University, graduated in 2014;
- Ammar Aldubaikhil, Doctor of Industrial Engineering, Lamar University, graduated in 2016;
- Pouyeh Rezazadeh, Doctor of Industrial Engineering, Lamar University, graduated in 2016;
- Ning Lou, Doctor of Industrial Engineering, Lamar University, graduated in 2016;
- Ravinder Singh, Doctoral Student of Chemical Engineering, Lamar University, graduated in 2017;
- Sujay Mahale, Doctoral Student of Industrial Engineering, Lamar University, graduated in 2017;

Master Thesis Advisor:

- Bhavan Parikh, MES of Mechanical Engineering, Lamar University, graduated in August 2008;
- Anjali Mishra, MES of Industrial Engineering, Lamar University, graduated in Dec 2009;
- Qi Xie, MES of Industrial Engineering, Lamar University, graduated in May 2013;
- Md A. Islam, MES of Mechanical Engineering, Lamar University, graduated in August 2013;
- Sumit Piya, MES of Industrial Engineering, Lamar University, graduated in May 2017;
- Kamal Thapa, MES of Industrial Engineering, Lamar University, graduated in May 2018;

Master Thesis Committee:

- Pavan Mhasavekar, MES of Industrial Engineering, Lamar University, graduated in Dec 2008;
- Maheshwaran Ramalingam, MES of Industrial Engineering, Lamar University, graduated in Dec 2008;
- Samuel Choudhary, MES in Electrical Engineering, Lamar University, graduated in Dec 2011;
- Sriram Pydi, MES of Industrial Engineering, Lamar University, graduated in Dec 2011;
- Kallul Paul, MES of Industrial Engineering, Lamar University, graduated in Dec 2012;
- Swaagatika Patra, MES of Industrial Engineering, Lamar University, graduated in S2017;
- Roghabendra Rout, MES of Industrial Engineering, Lamar University, graduated in S2017;
- Vishnu Mahesh, MES of Industrial Engineering, Lamar University, graduated in Su2017;
- Anirudh Juloori, MES of Industrial Engineering, Lamar University, since 2017;

Undergraduate Research Students at University of Houston

NSF Research Experience for Undergraduate (REU) Students:

- Charles Ortiz, Mechanical Engineering, University of Houston, Summer 2023
- Huy Nguyen, Mechanical Engineering Technology, University of Houston, Summer 2023
- Jonathan Olvera, Mechanical Engineering Technology, University of Houston, Summer 2022 and Summer 2023;
- Ashok Lama, Mechanical Engineering Technology, University of Houston, Summer 2022;
- Edward Fabian, Mechanical Engineering Technology, University of Houston, Summer 2022;
- Davis Drake, Mechanical Engineering Technology, University of Houston, Summer 2021 and Summer 2022;
- Gan Liu, Aerospace Engineering, University of Texas at Austin, Summer 2021;
- Kevin Diaz, Mechanical Engineering Technology, University of Houston, Summer 2021;
- Joshua Clark, Mechanical Engineering Technology, University of Houston, Summer 2021;

Undergraduate Research Students at Lamar University

Undergraduate Research Assistants:

- Jason Singleton, Civil Engineering, Lamar University, Spring 2009, funded by NSF;
- Brent Thrasher, Industrial Engineering, Lamar University, Spring 2009, funded by NSF;
- Aleksander Allen, Electrical Engineering, Lamar University, Fall 2016 – Spring 2018,
    - Funded by three grants from Office of Undergraduate Research: OUR 2016, SURF 2017, OUR 2017;
    - Selected as one of the seven demos campus wide for President's Circle (Million $ donors);
    - Awarded the first place in the Talk category at the Texas STEM Conference 2017;
    - Selected for presentation from 4,000+ submission at the National Council for Undergraduate Research (NCUR) Conference, 2018 at University of Central Oklahoma

Proposals Funded at University of Houston ($5,466,363 total, $4,782,560 external, 18 grants)

- Title: "Using Safety Culture-related Assessment Results to Enhance the Effectiveness of Safety Management Systems"

  Source: National Academy of Sciences, Engineering, and Medicine – American Bureau of Shipping Subcontract

  Amount: $ 200,000
  Duration: 10/01/2023 – 09/30/2025
  PI: Weihang Zhu

- Title: "Reduce the frequency and impact of crane lifting-related incidents by developing an enhanced understanding of Human Factors issues/concerns"

  Source: TAMU Ocean Energy Safety Institute – American Bureau of Shipping

  Amount: $ 25,000
  Duration: 10/01/2023 – 09/30/2024
  PI: Weihang Zhu

- Title: "Using Organic Mushroom Stems as Sustainable Feed Resource for Organic Poultry Production"

  Source: US Department of Agriculture

  Amount: $ 1,999,987, UH share $750,000
  Duration: 12/1/2023 – 11/30/2026
  PI: Jayant Lohakare, Co-PI: Abdul Hakeem (PVAMU), Venkatesh Balan, Weihang Zhu (UH), Woo Kyun Kim, Claudia Dunkley, Lilong Chai (UGA)

- Title: "Bridging the Gap between Image Analysis and Rapid Prototyping with a Pin Matrix Mechanism for Breast Reconstruction Surgical Planning"

  Source: University of Houston Division of Research

  Amount: $ 40,000
  Duration: 5/15/2023 – 11/15/2024
  PI: Weihang Zhu, Co-PI: Fatima Merchant

- Title: "Demonstrating the nutrient removal in agricultural watershed using macrophytes"

  Source: U.S. Environmental Protection Agency

  Amount: $ 623,720 (Total $1,500,000)
  Duration: 6/1/2023 – 5/31/2026
  PI: Venkatesh Balan, Co-PI: Weihang Zhu, Xiaonan Shan

- Title: "Large-Scale Testbed at UH Sugarland Campus for Promoting Biotechnology Research"

  Source: University of Houston Division of Research

  Amount: $ 320,803
  Duration: 2/1/2023 – 1/31/2024
  PI: Venkatesh Balan, Co-PI: Weihang Zhu, Driss Benhaddou

- Title: "3D Printing Integrated Engineering Design Education for Preservice STEM Teachers"
  Source: National Science Foundation
  Amount: $ 299,998
  Duration: 9/1/2022 – 8/31/2025
  PI: Weihang Zhu, Co-PI: Mariam Manuel, Paige Evans
- Title: "ET Capstone@UH: An Industry Educational Engagement Win-Win"
  Source: University of Houston Cougar Initiative to Engage (CITE) Program
  Amount: $ 23,000
  Duration: 9/1/2022 – 8/31/2022
  PI: Enrique Barbieri, Co-PI: Weihang Zhu Venkatesh Balan, Wajiha Shireen, Xiaojing Yuan
- Title: "Industries of the Future Research Experience for Preservice Teachers in a STEM Setting"
  Source: National Science Foundation
  Amount: $ 500,000
  Duration: 6/1/2021 – 5/31/2024
  PI: Weihang Zhu, Co-PI: Paige Evans, Venkatesh Balan, Driss Benhaddou, Lei Fan; Senior Personnel: Ganging Song, Ramona Mateer; Evaluator: Tomika Greer
- Title: "Developing Automated Robotic System for Mushroom Harvesting"
  Source: U.S. Department of Agriculture
  Amount: $ 590,004
  Duration: 9/1/2022 – 8/31/2025
  PI: Weihang Zhu, Co-PI: Driss Benhaddou, Venkatesh Balan, Fatima Merchant
- Title: "Pipeline Leakage Detection"
  Source: SPL Leak Detection, LLC
  Amount: $45,000
  Duration: Unrestricted Gift
  PI: Gangbing Song, Co-PI: Weihang Zhu
- Title: "IoT Based Smart Automated Mushroom Production System"
  Source: U.S. Department of Agriculture
  Amount: $ 500,000
  Duration: 6/1/2021 – 5/31/2024
  PI: Venkatesh Balan, Co-PI: Driss Benhaddou, Weihang Zhu
- Title: "ABS/LU Maritime Safety Research Subaward 2020"
  Source: Lamar University and American Bureau of Shipping
  Amount: $ 20,257
  Duration: 6/1/2020 – 8/31/2020

PI: Weihang Zhu

- Title: "Preparing Effective STEM Teachers by Advancing the Cultural and Computational Engagement of STEM Scholars"

Source: National Science Foundation (#1950036)

Amount: $ 1,199,872

Duration: 4/1/2020 – 3/31/2025

PI: Paige Evans Co-PI: Donna Stokes, Weihang Zhu, Jaspal Subhlok, Conra Gist

- Title: "Developing an Integrated Offshore Energy Industry Safety Culture Evaluation and Improvement Toolbox"

Source: National Academy of Sciences, Engineering, and Medicine (#200011064)

Amount: $ 380,456 (Total amount $1,440,340, led by American Bureau of Shipping)

Duration: 1/1/2020 – 11/30/2022

PI: Weihang Zhu (UH PI) ABS PI: Kevin McSweeney

- Title: "RET Site: High School Teacher Experience in Design and Manufacturing"

Source: National Science Foundation (#1855147)

Amount: $ 579,490 RET + $12,000 REU 2020 + $12,000 REU 2022 2020 + $12,000 REU 2023

Duration: 5/1/2020 – 4/30/2024

PI: Weihang Zhu Co-PI: Augustina Reyes

- Title: "ABS/LU Maritime Safety Research Subaward 2019"

Source: Lamar University and American Bureau of Shipping

Amount: $ 19,763

Duration: 7/15/2019 – 8/31/2019

PI: Weihang Zhu

- Title: "Transforming Lab-scale Technologies of Developing Smart Contact Lenses to Manufacturing, Phase II"

Source: University of Houston Advanced Manufacturing Institute

Amount: $ 50,000

Duration: 2/1/2019 – 8/31/2021

PI: Cunjiang Yu Co-PI: Weihang Zhu

- Title: "Transforming Lab-scale Technologies of Developing Smart Contact Lenses to Manufacturing, Phase I"

Source: University of Houston Advanced Manufacturing Institute

Amount: $ 50,000

Duration: 2/1/2018 – 8/31/2020

PI: Cunjiang Yu Co-PI: Weihang Zhu

- Title: "University of Houston Startup Grant"

Source: University of Houston

Amount: $ 200,000

Duration: 9/1/2018 – 12/31/2020
PI: Weihang Zhu

Proposals Funded at Lamar University ($2,745,271 total, $2,577,409 external, 31 grants)

- Title: "FuelWatch: Fuel Economy Assessment and Prediction for Ship Fuel Management"
  Source: Center for Advances in Port Management, Lamar University
  Amount: $ 10,000
  Duration: 6/15/2018 – 7/15/2019
  PI: Weihang Zhu
- Title: "A Decision Framework for Enhancing Waterway Utilization with Application to Houston Ship Channel"
  Source: Center for Advances in Port Management, Lamar University
  Amount: $ 30,000
  Duration: 6/15/2018 – 7/15/2019
  PI: Maryam Hamidi Co-PI: Weihang Zhu, Xing Wu
- Title: "Exploring the Multi-Modal User Interface for Drone"
  Source: Gill Foundation
  Amount: $ 2,210
  Duration: 06/01/2018 – 12/31/2018
  PI: Weihang Zhu
- Title: "University Scholar Award"
  Source: Lamar University
  Amount: $ 5,000
  Duration: 05/01/2018 – 08/31/2019
  PI: Weihang Zhu
- Title: "Simio Academic Software: Institution Grant"
  Source: Simio LLC
  Amount: $ 120,000
  Duration: 1/15/2018 – 06/30/2020
  PI: Weihang Zhu
- Title: "Dual Myo Sensor Bio-signal Analysis and Control for a Prosthetic Hand"
  Source: Lamar University Office of Undergraduate Research
  Amount: $ 1,500
  Duration: 11/01/2017 –04/30/2018
  PI: Aleksander A. Allen Faculty Mentor: Weihang Zhu
- Title: "Data-driven Ship Fuel Consumption Optimization", Phase I
  Source: Center for Advances in Port Management, Lamar University

Amount: $ 6,402
Duration: 5/15/2017 – 8/31/2017
PI: Weihang Zhu

- Title: "Summer Undergraduate Research Fellowship: Portable Intelligent Prosthetic Hand Control"
  Source: Lamar University Office of Undergraduate Research
  Amount: $ 4,500 + summer dorm room
  Duration: 4/21/2017 –11/30/2017
  PI: Aleksander A. Allen Faculty Mentor: Weihang Zhu

- Title: "Design and Improvement a 3D Printed Prosthetic Hand"
  Source: Lamar University Office of Undergraduate Research
  Amount: $ 1,500
  Duration: 11/1/2016 – 4/30/2017
  PI: Aleksander A. Allen Faculty Mentor: Weihang Zhu, Hassan Zargarzadeh

- Title: "Scheduling Optimization for Food Processing Industry"
  Source: Lamar University Research Enhancement Grant
  Amount: $ 5,000
  Duration: 9/1/2016 – 8/31/2017
  PI: Weihang Zhu Co-PI: Ezra Wari

- Title: "3D Printing a Prosthetic Hand for a Rehabilitation System"
  Source: Gill Foundation
  Amount: $ 2,100
  Duration: 6/1/2016 – 12/31/2016
  PI: Weihang Zhu Co-PI: Yueqing Li

- Title: "Gill Foundation Summer Projects Competition: Student 3D Printing and Virtual Reality / Augmented Reality Contest - Pilot Project"
  Source: Gill Foundation
  Amount: $ 3,300
  Duration: 6/1/2016 – 12/31/2016
  PI: Weihang Zhu Co-PI: Stefan Andrei

- Title: "RET Site: Incorporating Engineering Design and Manufacturing into High School Curriculum"
  Source: National Science Foundation – EEC RET Program
  Amount: $ 545,380 RET + $10,000 REU supplement
  Duration: 9/1/2016 – 8/31/2019
  PI: Weihang Zhu Co-PI: Xuejun Fan

- Title: "Simulation-based Decision Support System for Port Management: Operations, Expansion and Disaster Recovery Planning"
  Source: Center for Advances in Port Management, Lamar University
  Amount: $ 29,250
  Duration: 5/1/2016 – 5/31/2017
  PI: Weihang Zhu

- Title: "Industrial and Mechanical Engineering Scholars with Scholarships, Career Mentoring, Outreach and Advisement, Professional Societies and Engineering Learning Community (SCOPE)"

Source: National Science Foundation – DUE S-STEM Program
Amount: $ 625,300
Duration: 9/1/2015 – 8/31/2020
PI: Weihang Zhu Co-PIs: James Curry, Brian Craig, Jiang Zhou, Hsing-wei Chu

- Title: "Instruction Innovation Grant for Distinguished Faculty Fellow"
  Source: Lamar University
  Amount: $ 5,000
  Duration: 9/1/2015 – 8/31/2018
  PI: Weihang Zhu

- Title: "Distinguished Faculty Fellow – Teaching"
  Source: Lamar University
  Amount: $ 30,000
  Duration: 9/1/2015 – 8/31/2018
  PI: Weihang Zhu

- Title: "Mariner Prototype Leading Indicators Tool"
  Source: American Bureau of Shipping
  Amount: $ 437,099
  Duration: 9/1/2010 – present (renewed each year since 2010)
  PI: Brian Craig Co-PI: James Curry, Weihang Zhu

- Title: "Mariner Personnel Safety"
  Source: American Bureau of Shipping
  Amount: $ 469,402
  Duration: 9/1/2009 – present (renewed each year since 2009)
  PI: Brian Craig Co-PIs: James Curry, Weihang Zhu

- Title: "Presidential Faculty Fellowship for Undergraduate Teaching Research"
  Source: Lamar University
  Amount: $ 15,000
  Duration: 9/1/2015 – 8/31/2016
  PI: Jiang Zhou Co-PI: Ken Aung, Weihang Zhu, Xinyu Liu

- Title: "Development of the ASTM Standard for Injury and Illness Data Collection and Reporting and the ASTM Standard for Near Miss Collection and Reporting"
  Source: Ship Operations Cooperative Program (SOCP), Woodinville, Washington
  Amount: $ 50,000
  Duration: 9/1/2014 – 08/31/2016
  PI: Brian Craig Co-PIs: James Curry, Weihang Zhu

- Title: "Multimedia Learning of Engineering Economics with Role Play Gaming on a Mobile Platform"
  Source: National Science Foundation – DUE TUES Program
  Amount: $ 191,505
  Duration: 5/15/2012 – 4/30/2016
  PI: Alberto Marquez Co-PI: Weihang Zhu, Julia Yoo

- Title: "ABS Safety Culture"
  Source: American Bureau of Shipping
  Amount: $ 20,000
  Duration: 6/1/2012 – 12/31/2012

PI: Brian Craig Co-PI: James Curry, Weihang Zhu

- Title: "Agent-based Modeling and Simulation for Hazardous Waste Reverse Logistics"
  Source: Texas Hazardous Waste Research Center
  Amount: $ 5,000
  Duration: 9/1/2008 – 8/31/2009
  PI: Weihang Zhu Co-PIs: James Curry, Helen Lou

- Title: "Wood Procurement Optimization for MeadWestvaco"
  Source: MeadWestvaco
  Amount: $ 10,000
  Duration: 9/1/2008 – 8/31/2009
  PI: James Curry Co-PIs: Weihang Zhu, Alberto Marquez

- Title: "A Study of the Impact of Haptic-augmented Learning Tools on Dynamics Course"
  Source: National Science Foundation – DUE CCLI Program
  Amount: $ 88,323
  Duration: 4/1/2008 – 3/31/2010
  PI: Weihang Zhu Co-PIs: Jiang Zhou, Ken Aung, Malur Srinivasan

- Title: "Online Teaching Grant for Manufacturing Processes"
  Source: Lamar University
  Amount: $ 3,000
  Duration: 9/1/2011 – 12/31/2012
  PI: Weihang Zhu

- Title: "Research Enhancement Grant"
  Source: Lamar University
  Amount: $ 5,000
  Duration: 9/1/2010 – 8/31/2011
  PI: Weihang Zhu

- Title: "Research Enhancement Grant"
  Source: Lamar University
  Amount: $ 5,000
  Duration: 9/1/2009 – 8/31/2010
  PI: Weihang Zhu

- Title: "Research Enhancement Grant"
  Source: Lamar University
  Amount: $ 5,000
  Duration: 12/1/2006 – 8/31/2007
  PI: Weihang Zhu

- Title: "Research Enhancement Grant"
  Source: Lamar University

Amount: $ 5,000
Duration: 12/1/2005 – 8/31/2006
PI: Weihang Zhu

Book Chapter at University of Houston

1. Alem Demissie, Weihang Zhu, Multi-objective Optimization of Natural Gas Transmission Network, Gas Pipeline – An Overview, Advances in Engineering Research, Page 113-146, Volume 39, Nova Publishers House. ISBN: 978-1-53618-733-5

Journal Papers under Review or in Progress

1. *Fei Wang*, *Boran Zhou*, *Rui Wang*, *Jim Jenkinson*, **Weihang Zhu**, Jing Zhong, Zheng Fan and Li Sun, Engineering Microcracks in MWCNT/Elastomer Bilayers for High-performance Stretchable Sensor Development, Advanced Functional Materials, submitted in December 2022
2. *Ezra Wari*, Venkatesh Balan, **Weihang Zhu***, A Simulation Study of Mushroom Farm Energy Auditing, working paper
3. *Sandesh Risal*, Venkatesh Balan, **Weihang Zhu***, A Simulation Study of Energy Auditing for Container-based Mushroom Production, working paper
4. *Muhammad Ayser*, *Muhammad Muzamil Hussain*, Venkatesh Balan, **Weihang Zhu**, A Survey on Chitin and Chitosan on Biomedical Applications, working paper

Journal Publications at University of Houston (student names in italics, corresponding author marked with *)

1. Zhaoyi Zhang, Ying Li*, Zhichen Liu, Siwen Wang, Hu Xing, **Weihang Zhu***, Enhancing the Reliability of Shipborne INS/GNSS Integrated Navigation System during Abnormal Sampling Periods Using Bi-LSTM and Robust CKF, Ocean Engineering, accepted September 27, 2023
2. Hongan Wu; Yong Lv; Rui Yuan; Xingkai Yang; Ke Feng; **Weihang Zhu**, Synchro-Reassigned Extracting Transform: An Effective Tool for Rotating Machinery Fault Diagnosis under Varying Speed Condition, IEEE Transactions on Instrumentation & Measurement, accepted on September 2, 2023
3. *Ezra Wari*, **Weihang Zhu***, Gino Lim, A Corrosion Maintenance Model Using Continuous State Partially Observable Markov Decision Process for Oil and Gas Pipelines, Algorithms, accepted July 14, 2023
4. *Shijie Xu*, Rui Yuan, Yong Lv, Huangxing Hu, **Weihang Zhu**, A novel fault diagnosis approach of rolling bearing using intrinsic feature extraction and CBAM-enhanced InceptionNet, Measurement Science and Technology, accepted June 2023
5. *Samprash Risal*, *Chaoshan Wu*, *Fei Wang*, Sandesh Risal, Francisco Carlos Robles Hernandez, **Weihang Zhu**, Yan Yao, Zheng Fan, Silver-Carbon Interlayers in Anode-Free Solid-State Lithium Metal Batteries: Current Development, Interfacial Issues, and Instability Challenges, Carbon, accepted in June 2023
6. *Sandesh Risal*, Navdeep Singh*, Andrew Ian Duff, Yan Yao, Li Sun, *Samprash Risal*, **Weihang Zhu***, Development of RF-MEAM interatomic potential for Fe-C system to study temperature dependent elastic properties, Materials, accepted on May 15, 2023
7. Kevin McSweeney, James Curry, Rick Curtis, *Ezra Wari*, **Weihang Zhu***, Brian Craig, *Muhammad Muzamil Hussain*, *Arturo Haces-Garcia*, *Oghosa P Idahosa*, *Emad Zeni*, *Gubbala Seshasaikrishna*,

Development of a Comprehensive Multi-Component Toolkit for Offshore Safety Culture Assessment, Process Safety and Environmental Protection, accepted on May 11, 2023

8. *Ezra Wari*, **Weihang Zhu***, Gino Lim, Maintenance in the Downstream Petroleum Industry: A Survey on Methodology and Implementation, Computers & Chemical Engineering, Volume 172, April 2023, 108177, doi.org/10.1016/j.compchemeng.2023.108177
9. *Zhaoyi Zhang*, Ying Li*, Zhichen Liu, Jiajia Xiao, **Weihang Zhu***, An Autonomous Navigation Algorithm for MASS with INS Aiding and Virtual Motion Constraints under the Action of Wind and Drift Current, Ocean Engineering, May 2023, 10.1016/j.oceaneng.2023.113790
10. *Ji'An Chen;* Zheng Chen; **Weihang Zhu**; Song, Gangbing Song; Underwater bolted flange looseness detection using percussion-induced sound and Feature-reduced Multi-ROCKET model, Structural Health Monitoring, accepted on January 13, 2023
11. *Ezra Wari*, **Weihang Zhu***, Gino Lim, Pipeline Maintenance Optimization with Partially Observable Markov Decision Process, Algorithms, 16 (1), 54, https://doi.org/10.3390/a16010054
12. *Faheem Ershad*, *Michael Houston*, *Shubham Patel*, Luis Contreras, *Bikram Koirala*, *Yuntao Lu*, Zhoulyu Rao, *Yang Liu*, *Nicholas Dias*, *Arturo Haces-Garcia*, **Weihang Zhu**, Yingchun Zhang, Cunjiang Yu, Anatomically Coordinated Large-Area Surface Electromyography Mapping from In Situ Fabricated, Customizable and Reconfigurable Drawn-on-Skin Multielectrode Arrays, Proceedings of National Academy of Sciences - Nexus, Volume 2, Issue 1, January 2023, pgac291, doi.org/10.1093/pnasnexus/pgac291
13. *Shubham Patel*†, *Faheem Ershad*†, *Jimmy Lee*, *Lourdes Chacon-Alberty*, *Yifan Wang*, *Marco Morales*, *Arturo Haces-Garcia*, *Seonmin Jang*, *Lei Gonzalez*, Luis Contreras, Aman Agarwal, Zhoulyu Rao, Igor Efimov, Yu Shrike Zhang, Min Zhao, Roslyn Rivkah Isseroff, Alamgir Karim, Abdelmotagaly Elgalad, **Weihang Zhu**, Xiaoyang Wu, Cunjiang Yu*, Drawn-on-Skin Sensors from Fully Biocompatible Inks toward High-Quality Electrophysiology, Small, February 2022, doi.org/10.1002/smll.202107099
14. Yang, Di; Lv, Yong; Yuan, Rui; Li, Hewenxuan; **Zhu, Weihang**, Robust fault diagnosis of rolling bearings via entropy-weighted nuisance attribute projection and neural network under various operating conditions, Structural Health Monitoring, accepted in January 2022
15. Venkatesh Balan*; **Weihang Zhu**; Harish Krishnamoorthy; Driss Benhaddou; Jake Mowrer; *Hasan Husain*; *Artin Eskandari*, Challenges and Opportunities in Producing High-Quality Edible Mushrooms from Lignocellulosic Biomass in a Small-Scale, Applied Microbiology and Biotechnology, 2021, https://doi.org/10.1007/s00253-021-11749-2.
16. *Sandesh Risal*, **Weihang Zhu***, Pablo Guillen-Rondo, Li Sun, Improving phase prediction accuracy for high entropy alloys with Machine learning, Computational Material Science, Vol. 192, May 2021, 110389, https://doi.org/10.1016/j.commatsci.2021.110389
17. *Yue Shi*, **Weihang Zhu**, Yisha Xiang*, Qianmei Feng, Condition-based maintenance optimization for multi-component systems subject to a system reliability requirement, *Reliability Engineering and Safety Systems*, Vol. 202, 2020, https://doi.org/10.1016/j.ress.2020.107042
18. Chenghang Zheng, Zhongyang Zhao, Yishan Guo, Haitao Zhao, Weiguo Weng, **Weihang Zhu**, Baoyun Yu, Xiang Gao*, A Real-time Optimization Method for Economic and Effective Operation of Electrostatic Precipitators, Journal of the Air & Waste Management Association, 70 (7), page 708-720, July 2020, https://doi.org/10.1080/10962247.2020.1767227
19. Linchu Yang, *Ji'An Chen**, **Weihang Zhu**, Dynamic hand gesture recognition based on a leap motion controller and two-layer bidirectional recurrent neural network, *Sensors*, 20(7), 2106; https://doi.org/10.3390/s20072106

20. *Arash Abedi*, **Weihang Zhu***, An Advanced Order Promising Mechanism for Hybrid Production Strategy, *SME Journal of Manufacturing Systems,* https://doi.org/10.1016/j.jmsy.2020.02.012
21. Qingmin Hou, **Weihang Zhu***, An EKF based method for small leakage detection and location of natural gas pipeline, *Applied Sciences*, 9(15) 3193, 2019, https://doi.org/10.3390/app9153193
22. *Huiling Chen*, Liguo Shuai*, **Weihang Zhu**, Wei Miao, An Investigation of the Electrostimulation Threshold under Nonsteady Contact Conditions, *Industrial Robot*, 46(7), May 2019, DOI: 10.1108/IR-11-2018-0230
23. *Ezra Wari*, **Weihang Zhu***, A Constraint Programming Model for Food Processing Industry: a Case for an Ice Cream Processing Facility, *International Journal of Production Research*, 57(21), 6648-6664, doi: 10.1080/00207543.2019.1571250
24. *Acyut Kaneria*, Maryam Hamidi*, **Weihang Zhu**, Brian Craig, Traffic Simulation Study of Houston Ship Channel for Assessing the Impact of Waterway Closures on Vessel Waiting Time, *ASCE Journal of Waterway, Port, Coastal, and Ocean Engineering*, 145(4), July 2019
25. *Zhicheng Zhu*, Yisha Xiang*, Mingyang Li, **Weihang Zhu**, Kellie Schneider, Preventive Maintenance subject to Equipment Unavailability, *IEEE Transactions on Reliability*, Vol. 68 (3), 1009-1020, doi:10.1109/TR.2019.2913331

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26. *Alem Demissie*, **Weihang Zhu***, Daniel Kitaw, Amare Matebu, Quality Assessment and Improvement for Ethiopian Garment Enterprises, *Journal of Industrial and Production Engineering*, v 34, n 6, p 450-460, August 18, 2017, doi: 10.1080/21681015.2017.1362484
27. *Alem Demissie*, **Weihang Zhu***, Chanyalew Taye Belachew, A Multi-objective Optimization Model for Gas Pipeline Operations, *Computers and Chemical Engineering*, doi: 10.1016/j.compchemeng.2017.02.017
28. *Arash Abedi*, **Weihang Zhu***, An Optimization Model for Purchase, Production, and Distribution in Fish Supply Chain – A Case Study, *International Journal of Production Research*, v 55, n 12, p 3451-3464, June 18, 2017, doi: 10.1080/00207543.2016.1242800
29. *Julia Griffin*, **Weihang Zhu***, Chang S. Nam, The Role of Haptic Feedback in Retinal Microsurgery Systems: A Systematic Review, *IEEE Transactions on Haptics*, v 10, n 1, p 94-105, January-March 2017, doi: 10.1109/TOH.2016.2598341
30. *Ezra Wari*, **Weihang Zhu***, Multi-week MILP Scheduling for an Ice Cream Processing Facility, *Computers and Chemical Engineering*, v 94, p 141-156, November 2, 2016, doi: 10.1016/j.compchemeng.2016.07.025
31. Ge Jiang, Dingzhong Feng, **Weihang Zhu***, A Large and Heavy Cargo Transport System Designed for Small and Medium Ship Maintenance and Repair, *Journal of Ship Production and Design*, 33 (3), pp. 212-220, doi:10.5957/JSPD.33.3.160019; Received the **Best Paper Award** from the 15th Annual Meeting of China Society of Logistics
32. *Yuci Shen*, Leilei Zhang, **Weihang Zhu***, Jiang Zhou, Xuejun Fan, Finite-Element Analysis and Experimental Test for a Capped-Die Flip-Chip Package Design, *IEEE Transactions on Components, Packaging and Manufacturing Technology*, v 6, n 9, p 1308-1316, September 2016, doi: 10.1109/TCPMT.2016.2592947; Received 2016 **Best Paper Award** - IEEE Transactions on Components, Packaging and Manufacturing Technology in the Advanced Packaging Technologies category
33. *Ezra Wari*, **Weihang Zhu***, A survey on metaheuristic for optimization in food manufacturing industry, *Applied Soft Computing*, v 46, p 328-343, September 1, 2016, doi: 10.1016/j.asoc.2016.04.034
34. Xinyu Liu*****, **Weihang Zhu**, Development of a Fiber Optical Occlusion Based Non-contact Automatic Tool Setter for a Micro-milling Machine, *Robotics and Computer Integrated Manufacturing*, v 43, p 12-17, February 1, 2017, doi:10.1016/j.rcim.2016.04.002

35. Ge Jiang, Dingzhong Feng, **Weihang Zhu***, Towards Efficient Merchant Shipbuilding Based on the Lean Production Methodology, *Journal of Ship Production and Design*, 32 (4), pp. 245-257, doi:10.5957/JSPD.32.4.150042
36. **Weihang Zhu***, Alberto Marquez, Julia Yoo, "Engineering Economics Jeopardy!" Mobile App for University Students, *Engineering Economist*, v 60, n 4, p 291-306, October 2, 2015, DOI:10.1080/0013791X.2015.1067343
37. Kevin McSweeney*****, Brian Craig, James Curry, **Weihang Zhu**, Are Mariner Near Misses Influencing Design?, *Transportation Research Record* Issue 2326 pp 54-58, 2013
38. **Weihang Zhu**, *Ashraf Yaseen*, Yaohang Li*****, DEMCMC-GPU: An Efficient Multi-Objective Optimization Method with GPU Acceleration on the Fermi Architecture, *Journal of New Generation Computing*, v 29, n 2, p 163-184, April 2011
39. **Weihang Zhu***, Massively Parallel Differential Evolution – Pattern Search Optimization with Graphics Hardware Acceleration: an Investigation on Bound Constrained Optimization Problems, *Journal of Global Optimization*, doi: 10.1007/s10898-010-9590-0, (2011) 50:417-437;
40. **Weihang Zhu***, Nonlinear Optimization with a Massively Parallel Evolution Strategy Algorithm on Graphics Hardware, *Applied Soft Computing Journal*, doi: 10.1016/j.asoc.2010.05.020;
41. *Carol Schulte*, James Curry*****, Victor Zaloom, **Weihang Zhu**, Helen Lou, Alberto Marquez, Scheduling Hazardous Waste Incinerators Using a Simulated Annealing Linear Programming Heuristic, *Journal of Environmental Engineering Science*, July 2010, 27(7): 569-575. doi:10.1089/ees.2009.0380;
42. **Weihang Zhu***, James Curry, Alberto Marquez, SIMD Tabu Search for Quadratic Assignment Problem with Graphics Hardware Acceleration, *International Journal of Production Research*, Volume 48, Issue 4, 2010,1035 - 1047
43. Wei Li*****, H. Peng, **Weihang Zhu**, D. Sheng, J. Chen, An Immune-Tabu Hybrid Algorithm for Thermal Unit Commitment of Electric Power Systems, *Journal of Zhejiang University-Science A,* Issue 4, 2009
44. **Weihang Zhu***, J. Curry, A. Marquez, GPU-accelerated SIMT Tabu Search for the Quadratic Assignment Problem, *Transactions of SME/NAMRC 2009*
45. **Weihang Zhu***, A Methodology for Building up an Infrastructure of Haptically Enhanced Computer-Aided Design Systems, *Transactions of the ASME: Journal of Computing and Information Science in Engineering*, Volume 8, Issue 4, 2008
46. Yongfu Ren, **Weihang Zhu**, Yuan-Shin Lee*****, Feature Conservation Conversion of Tri-dexel Volume Models to Polyhedral Surface Models for Product Prototyping, *Computer-Aided Design and Application*, Vol. 5, No. 6, 932-941, 2008
47. Yongfu Ren, **Weihang Zhu** and Yuan-Shin Lee*****, Tri-dexel Modeling and Analysis for Virtual Prototyping, *Transactions of SME/NAMRC 2008*
48. **Weihang Zhu**, Yuan-Shin Lee*****, An Infrastructure Towards Haptic Virtual Assembly with Native 3D Models in Mainstream CAD Systems, *Transactions of SME/NAMRC 2007*
49. Yongfu Ren, **Weihang Zhu** and Yuan-Shin Lee*****, Pencil-cut Machining with Material Side Tracing and Curve Refinement for Complex Polyhedral Models, *Transactions of SME/NAMRC 2006*
50. **Weihang Zhu**, Yuan-Shin Lee*****, A Visibility Sphere Marching Algorithm of Constructing Polyhedral Models for Haptic Sculpting and Product Prototyping, *Robotics and Computer-Integrated Manufacturing*, Vol 21, Issue 1, Page 19-36, 2005
51. Yongfu Ren, **Weihang Zhu**, Yuan-Shin Lee*****, Material Side Tracing and Curve Refinement for Pencil-cut Machining of Complex Polyhedral Models, *Computer Aided Design*, Vol. 37, Issue 10, 2005, Pages 1015-1026
52. **Weihang Zhu**, Yuan-Shin Lee*****, Five-axis Pencil-Cut Machining Planning and Virtual Prototyping with a 5-DOF Haptic Interface, C*omputer-Aided Design*, Vol. 36, Issue 13, 2004, pages 1295-1307
53. **Weihang Zhu**, Yuan-Shin Lee*****, Dexel-Based Force-Torque Rendering and Volume Updating for 5-DOF Haptic Product Prototyping and Virtual Sculpting, *Computer in Industry*, Vol. 55, Issue 2, 2004, pages 125-145

54. Deren Sheng, Haoren Ren*****, J. Chen, W. Li, **Weihang Zhu**, Optimization of Main Steam Pressure of Steam Turbine Unit under Cycling Loading, *Power Engineering*, Vol 20, No. 5, 2000
55. **Weihang Zhu**, Haoren Ren*****, Deren Sheng, Power Plant Management Information System for Production Based on MS SQL Server, *Zhejiang Electric Power*, Vol 19, No. 1, 2000
56. Deren Sheng, Haoren Ren*****, **Weihang Zhu**, Power Plant Reporting By OLE, *Thermal Power Generation*, No.173, P35-38, 1999
57. Haoren Ren, W. Li, D. Sheng*****, J. Chen, J. Li, X. Lu, **Weihang Zhu**, The Analysis of Operation Index for the Power Unit under Different Loads, *Transactions of the Chinese Society for Electrical Engineering*, Vol.19, No.9, P50-53, 1999

Conference Papers and Presentations at University of Houston

1. **Weihang Zhu**, Peter Weber, Development and Application of Assessment Tools for a Research Experience for Teachers Site, American Society of Engineering Education Annual Conference 2023, Baltimore, MD
2. **Weihang Zhu**, Mariam Manuel, Paige Evans, Peter Weber, Dissecting 3D Printing for Engineering Design Process Education of High School Preservice Teachers, American Society of Engineering Education Annual Conference 2023, Baltimore, MD
3. *Sandesh Risal*, Venkatesh Balan, **Weihang Zhu**, *Ezra Wari*, *Mhasa Alian*, Modeling and Optimization of Shipping Container-based Mushroom Farms for Agaricus biporus, and Pleurotus ostreatus, IISE Annual Conference 2023, New Orleans, LA
4. *Ezra Wari*, Venkatesh Balan, **Weihang Zhu**, *Sandesh Risal*, *Mhasa Alian*, Energy Efficient Simulation Model for Agro-processing Industry: A Case Study for Mushroom Production, IISE Annual Conference 2023, New Orleans, LA
5. *Ezra Wari*, **Weihang Zhu**, Gino Lim, Yisha Xiang, Optimal Maintenance Using a Continuous Partially Observable Markov Decision Process Model for the Oil and Gas Pipeline, IISE Annual Conference 2023, New Orleans, LA
6. *Ezra Wari*, **Weihang Zhu**, Gino Lim, A Discrete Partially Observable Markov Decision Process Model for the Maintenance Optimization of Oil and Gas Pipeline, IISE Annual Conference 2023, New Orleans, LA
7. **Weihang Zhu**, James Curry, Kevin McSweeney, Brian Craig, Rick Curtis, *Ezra Wari*, Development of an Offshore Safety Culture Maturity Model, IISE Annual Conference 2023, New Orleans, LA
8. **Weihang Zhu**, Rick Curtis, James Curry, Kevin McSweeney, Brian Craig, *Ezra Wari*, Identifying Safety Leading Indicators for the Offshore Industry, Proceedings of the 28th SNAME Offshore Symposium, March 8th, 2023, Houston, Texas
9. Enrique Barbieri, Burak Basaran, Driss Benhaddou, Navdeep Singh, Vassilios Tzouanas, Venkatesh Balan, **Weihang Zhu**, Teaching Applied Mathematics in ET to Increase Student Engagement & Success in Engineering, Conference for Industry and Education Collaboration (CIEC), February 8, 2023, Charleston, SC
10. *Ezra Wari*, James Curry, **Weihang Zhu**, Brian Craig, *Muhammad Muzamil Hussain*, *Arturo Haces-Garcia*, *Oghosa P Idahosa*, *Emad Zeni*, *Gubbala Seshasaikrishna*, Describing Offshore Safety Culture with a Multi-Component Toolkit Approach, Mary K O'Connor Safety Conference, College Station, TX, USA, October 2022
11. **Weihang Zhu**, Huda Sarraj, Zheng Fan, Francisco Robles, Medhat El Nahas, Burak Basaran, Kamran Alba, Augustina Reyes, First Year Experience from RET Site: High School Teacher Experience in Engineering Design and Manufacturing, American Society of Engineering Education Annual Conference, Minneapolis, MN, USA, June 2022

12. James Curry, **Weihang Zhu**, Brian N. Craig, *Emad Mohammad Zeni, Saikrishna S Gubbala*, An Investigation on the Impact of Safety Culture Surveys Questionnaire on the Results through the Correlation Analysis, 24th Annual Process Safety International Symposium, October 19-21, 2021, College Station, Texas
13. Ning Lou, Ezra Wari, James Curry, Kevin McSweeney, Rick Curtis, Brian Craig, Muhammad Hussain, **Weihang Zhu**, Identifying Safety Culture Factors for Offshore Industry, 26th SNAME Symposium, Houston, TX, Apr 6-7, 2021
14. Robert Kelley Bradley, James Curry, Victor Zaloom, Brian Craig, Alberto Marquez, Xinyu Liu, Berna Tokgoz, Yueqing Li, Maryam Hamidi, Gary Yentzen, Acyut Kaneria, **Weihang Zhu**, Results of the First 6 Years of a 2 + 2 Online BS Industrial Engineering Degree Pathway, ASEE Annual Conference 2021
15. **Weihang Zhu**, Xinyu Liu, Xuejun Fan, Nicholas Brake, Xianchang Li, Jiang Zhou, Dorothy Sisk, Julia Yoo, Assisting High School Design and Manufacturing Curriculum Development through RET, Industrial and Systems Engineering Research Conference, Orlando, Florida, 2019
16. **Weihang Zhu**, Julia Yoo, James Curry, Brian Craig, Jiang Zhou, Hsing-wei Chu, The Impact of Scholarship on Current Students, American Society of Engineering Education Annual Conference, Tamp, Florida, 2019

Conference Papers and Presentations at Lamar University

17. **Weihang Zhu**, Xuejun Fan, Nicholas Brake, Xinyu Liu, Xianchang Li, Jiang Zhou, Dorothy Sisk, Julia Yoo, Engineering Design and Manufacturing Education through Research Experience for High School Teachers, SME/NAMRC, June 2018, College Station, TX; Procedia Manufacturing, Volume 26, 2018, Pages 1340-1348, doi.org/10.1016/j.promfg.2018.07.127
18. **Weihang Zhu**, Xuejun Fan, Julia Yoo, Dorothy Sisk, Nicholas Brake, Xinyu Liu, Xianchang Li, Jiang Zhou, First Year Experience RET Site: Incorporating Advanced Design and Manufacturing to High School Curriculum, American Society of Engineering Education, June 2018, Salt Lake City, UT
19. *Kamal Thapa*, Maryam Hamidi, **Weihang Zhu**, Brian Craig, A GIS-based Optimization Model for Port of Beaumont Inventory Management, Industrial and System Engineering Research Conference, May 2018, Orlando, FL
20. *Anirudh Juloori*, Yueqing Li, **Weihang Zhu**, Development of a Game-Based and Haptically Enhanced Application for People with Visual Impairment, *Advances in Intelligent Systems and Computing*, v 608, p 186-192, 2018, Advances in Human Factors in Wearable Technologies and Game Design - *Proceedings of the AHFE 2017 International Conference on Advances in Human Factors and Wearable Technologies*, 2017
21. **Weihang Zhu**, Julia Yoo, James Curry, Brian Craig, Jiang Zhou, Hsing-wei Chu, Nicholas Brake, Industrial and Mechanical Engineering Scholars with Scholarships, Career Mentoring, Outreach and Advisement, Professional Societies and Engineering Learning Community (SCOPE) S-STEM Program, ASEE Annual Conference and Exposition, Conference Proceedings, v 2017-June, June 24, 2017, Columbus, OH, USA
22. *Ezra Wari*, **Weihang Zhu**, Yisha Xiang, A Constraint Programming Model for Ice Cream Processing, 67th Annual Conference and Expo of the Institute of Industrial Engineers, p 331-337, May 20 – 23, 2017, Pittsburgh, PA, USA, Received the **Best Track Paper Award** for Production Planning & Scheduling Track
23. *Alem Demissie*, **Weihang Zhu**, Multi-objective Optimization of Natural Gas Pipeline Operation, Industrial and System Engineering Research Conference, May 21 – 24, 2016, Anaheim, CA, USA
24. *Ezra Wari*, **Weihang Zhu**, Energy-efficient Scheduling for an Ice Cream Processing Facility, Industrial and System Engineering Research Conference, May 21 – 24, 2016, Anaheim, CA, USA

25. **Weihang Zhu**, Ge Jiang, Brian Craig, Online Simulation Course and "Arena Video Tutor" Mobile App Development, Industrial and System Engineering Research Conference, May 21 – 24, 2016, Anaheim, CA, USA
26. James Curry, **Weihang Zhu**, Brian Craig, An Online 2+2 Bachelor's Degree Program Track in Industrial Engineering at Lamar University, ASEE Annual Conference and Exposition, Conference Proceedings, June 26, 2016, New Orleans, LA, USA
27. *Huiling Chen*, Liguo Shuai, **Weihang Zhu**, Preliminary study on SED distribution of tactile sensation in fingertip, MATEC Web of Conferences, v 45, March 15, 2016, 2016 7th International Conference on Mechatronics and Manufacturing, ICMM 2016
28. **Weihang Zhu**, Alberto Marquez, Julia Yoo, Development of "Engineering Economics Career" Mobile App, *ASEE Annual Conference and Exposition, Conference Proceedings*, June 2015, Seattle, Washington, USA
29. Ge Jiang, Dingzhong Feng, **Weihang Zhu**, Lean Shipbuilding for Project-based Manufacturing, *IIE Annual Conference and Expo 2015, p 1730-1739, 2015*, Nashville, TN, USA
30. *Ezra Wari*, **Weihang Zhu**, Xinyu Liu, Genetic Algorithms Applications in the Food Process Industry, *IIE Annual Conference and Expo 2015, p 288-297*, May 2015, Nashville, TN, USA
31. *Alem Demissie*, **Weihang Zhu**, A Survey on Gas Pipelines Operation and Design Optimization, *IIE Annual Conference and Expo 2015, p 734-742*, May 2015, Nashville, TN, USA
32. *Alem Demissie*, **Weihang Zhu**, Daniel Kitaw, Amare Matebu, Quality Assessment on the Garment Enterprises in Ethiopia, *IIE Annual Conference and Expo 2015, p 743-752*, May 2015, Nashville, TN, USA
33. Liang Diao, Liguo Shuai, *Huiling Chen* and **Weihang Zhu**, Improvement of ELM algorithm for multi-object identification in gesture interaction, *The International Conference on Extreme Learning Machines* (ELM 2015), December 2015, Hangzhou, China
34. **Weihang Zhu**, Alberto Marquez, Julia Yoo, "Engineering Economics Jeopardy!" Mobile App Development Process and Student Satisfaction, *ASEE Annual Conference and Exposition, Conference Proceedings 2014*, Indianapolis, IN, USA
35. Brian Craig, *Richshalla Papallion*, James Curry, **Weihang Zhu**, Maritime Safety Reporting, *Offshore Technology Conference* 2014, Houston, TX, USA
36. Xinyu Liu, **Weihang Zhu**, Design of a low-cost fiber optical occlusion based automatic tool setter for micro milling machine, *FAIM 2014 - Proceedings of the 24th International Conference on Flexible Automation and Intelligent Manufacturing: Capturing Competitive Advantage via Advanced Manufacturing and Enterprise Transformation, p 777-783, 2014*, San Antonio, TX, USA
37. James Curry, **Weihang Zhu**, Brian Craig, *Lonnie Turpin Jr*., *Majed Al-Bokhari*, *Pavan Mhasavekar*, Using a natural language generation approach to document simulation results, *Proceedings of the 2013 Winter Simulation Conference - Simulation: Making Decisions in a Complex World, p 2116-2126, 2013*, Washington DC, USA
38. *Shreyas Shashidhara*, Xinyu Liu, **Weihang Zhu**, James Curry, Victor Zaloom, Experimental Investigation of the Tool Wear and Tool Life in Micro Hard Milling, *ASME International Mechanical Engineering Congress and Exposition, Proceedings (IMECE), v 2 A*, November 2013, San Diego, USA
39. **Weihang Zhu**, Jiang Zhou, *Md. A. Islam*, *Md. Shufean*, Xinyu Liu, Development of a Mobile App for Learning System Dynamics, *ASME International Mechanical Engineering Congress and Exposition, Proceedings (IMECE), v 5*, 2013, San Diego, CA, USA
40. **Weihang Zhu**, Alberto Marquez, Julia Yoo, Development of Mobile App for Engineering Economics, *Proceedings of the ASEE annual conference 2013*, Atlanta, GA, USA
41. Xinyu Liu, *B. Gangineni*, **Weihang Zhu**, Victor Zaloom, Finite Element Analysis of Micro-grinding Process, *Proceedings of the Industrial Engineering Research Conference*, May 2012, Orlando, FL, USA

42. Xinyu Liu, **Weihang Zhu**, Victor Zaloom, Multi-objective Optimization for the Micro-milling Process with Adaptive Data Modeling, *Proceedings of the ASME 2011 International Manufacturing Science and Engineering Conference* MSEC2011 June 13-17, 2011, Corvallis, Oregon, USA
43. Wen-Chyuan Chiang, Gangshu Cai, *Xiaojing Xu*, *Ganesh Mudunuri* and **Weihang Zhu**, Two-Stage Tabu - Particle Swarm Algorithms for the Facility Layout Problem with Size Constraints, *IEEE CEC* 2011, June 5~8, 2011, New Orleans, LA, USA
44. **Weihang Zhu**, Kendrick Aung, Jiang Zhou, Design Improvement and Analysis on 3D Haptic-augmented Learning Tools for Dynamics Course, *Proceedings of the American Society of Engineering Education 2010 annual conference*, Louisville, KY, USA, June 2010;
45. **Weihang Zhu**, James Curry, Massively Parallel Genetic Algorithm for Nonlinear Optimization with GPU Computing, *the 13th AIAA/ISSMO Multidisciplinary Analysis Optimization (MAO) Conference*,13-15 September 2010, Fort Worth, Texas, co-located with the 10th AIAA Aviation Technology, Integration, and Operations (ATIO) Conference;
46. **Weihang Zhu**, Parallel Biogeography -based Optimization with GPU Acceleration for Nonlinear Optimization, *ASME IDETC/CIE Conference*, August 15- 18, 2010, Montreal, Canada;
47. **Weihang Zhu**, James Curry, *Anjali Mishra*, Alberto Marquez, Victor Zaloom, An Experimental Study of GPU-accelerated Ant Colony Optimization for Sequence Dependent Parallel Machine Scheduling, *Proceedings of the Industrial Engineering Research Conference*, Cancun, Mexico, June 5-9, 2010
48. James Curry, Alberto Marquez, **Weihang Zhu**, Setting Gate Prices with Intermediate Actors and Transportation Costs, *Proceedings of the Industrial Engineering Research Conference*, Cancun, Mexico, June 5-9, 2010
49. **Weihang Zhu**, Yaohang Li, GPU-Accelerated Differential Evolutionary Markov Chain Monte Carlo Method for Multi-Objective Optimization over Continuous Space, *2nd Workshop on Bio-Inspired Algorithms for Distributed Systems*, BADS 2010, held in conjunction with 7th International Conference on Autonomic Computing (ICAC 2010), Washington DC, USA, June 7-11, 2010.
50. Yaohang Li, **Weihang Zhu**, GPU-accelerated Multi-scoring Function Protein Loop Structure Sampling, *Ninth IEEE International Workshop on High Performance Computational Biology*, Atlanta, GA, April 19, 2010, held in conjunction with International Parallel & Distributed Processing Symposium (IPDPS).
51. *Hani Almufti*, *Kody Duplechin*, *Brent Trasher*, **Weihang Zhu**, A Simulation Study of Medical Office Practice, *IIE Regional Conference* 2010, held at St. Mary's University, San Antonio, TX, Feb 26~27, 2010 (Undergraduate student research paper).
52. **Weihang Zhu**, James Curry, *Anjali Mishra*, Victor Zaloom, Sequence Dependent Parallel Machine Scheduling on a GPU Platform Using Ant Colony Optimization, *Proceedings of ASME Manufacturing Science and Engineering Conference*, Oct 4~7, 2009, West Lafayette, IN, USA
53. **Weihang Zhu**, James Curry, Parallel Ant Colony for Nonlinear Function Optimization with Graphics Hardware Acceleration, *Proceedings of IEEE System, Man and Cybernetics Conference*, Oct 11~14, 2009, San Antonio, TX, USA
54. **Weihang Zhu**, Parallel Population Based Incremental Learning with GPU Acceleration for Nonlinear Optimization, *Proceedings of ASME IDETC/CIE Design Automation Conference*, Aug 30 ~ Sept 2, 2009, San Diego, CA, USA
55. **Weihang Zhu**, GPU-based Parallel Differential Evolution with Local Pattern Search on Function Optimization, *Proceedings of Industrial Engineering Research Conference*, May 30 ~ June 3, 2009, Miami, FL, USA
56. **Weihang Zhu**, Kendrick Aung, Jiang Zhou, Development and Analysis of 3D Haptic-augmented Learning Tools for Dynamics Course, *Proceedings of American Society of Engineering Education 2009 annual conference*, June 14 ~ 17, Austin, TX, USA

57. **Weihang Zhu**, A Study of Parallel Evolution Strategy – Pattern Search on a GPU Computing Platform, *Proceedings of ACM SIGEVO Genetic and Evolutionary Computation Summit Conference*, Shanghai, China, June 12 ~ 14, 2009
58. **Weihang Zhu**, J. Curry, Multi-walk Parallel Pattern Search on a GPU computing Platform, *Proceedings of the IEEE International Conference on Computational Science*, Baton Rouge, Louisiana, USA, May 25 ~ 27, 2009
59. **Weihang Zhu**, J. Curry, Particle Swarm with Graphics Hardware Acceleration and Local Pattern Search on Bound Constrained Optimization Problems, *IEEE Symposiums Series on Computational Intelligence*, 2009, Nashville, TN, USA, March 30 ~ April 2, 2009
60. **Weihang Zhu**, Kendrick Aung, *Bhavan Parikh*, Jiang Zhou, Malur Srinivasan, Thomas Matthews, A Study of the Impact of Haptic-augmented Learning Tools on Dynamics Course, *Proceedings of ASME Annual Conference*, IMECE 2008-66339, Boston, MA, USA, November 2008
61. Jiang Zhou, Paul Corder, **Weihang Zhu**, Kendrick Aung, Direct Assessment of Course Outcomes Part II: Results and Continuing Improvement for Mechanical Engineering Courses, *Proceedings of ASME Annual Conference*, IMECE 2008-67421, Boston, MA, USA
62. **Weihang Zhu**, Haptic Guided Rigid Body Dynamic Study for Virtual Assembly in Mainstream CAD Systems, *Proceedings of ASME IMECE*, Seattle, WA, USA, IMECE2007-41513, November 2007
63. Xianchang Li, **Weihang Zhu**, Paul Corder, Numerical Study on Heat Transfer of Inclined Jet Impingement with Explicit Crossflow, *Proceedings of ASME-JSME Thermal Engineering Summer Heat Transfer Conference*, July 8-12, 2007, Vancouver, British Columbia, Canada, HT2007-32478
64. **Weihang Zhu**, Yuan-Shin Lee, Haptic Manipulation of Native 3D CAD Models in Mainstream CAD/CAM Systems, *Proceedings of ASME IMECE* 2006
65. **Weihang Zhu**, Yuan-Shin Lee, Constructing Polyhedral Models from Dexel Models with Marching Algorithm for Haptic Virtual Sculpting, *Proceedings of ASME MSEC* 2006
66. Brandon Itkowitz, Josh Handley, **Weihang Zhu**, OpenHaptics: Add 3D Navigation and Haptics to Graphics Application, *Proceedings of World Haptics* 2005, Pisa, Italy, March 2005
67. **Weihang Zhu**, Yuan-Shin Lee, Virtual Sculpting and Multi-axis Polyhedral Machining Planning Methodology with 5-DOF Haptic Interface, *Proceedings of EuroHaptics* 2004, Munich, Germany
68. **Weihang Zhu**, Yuan-Shin Lee, Product Prototyping and Manufacturing Planning with 5-DOF Haptic Sculpting and Dexel Volume Updating, *Proceedings of IEEE Haptics Symposium* 2004, Chicago, USA
69. **Weihang Zhu**, Yuan-Shin Lee, Haptic Sculpting and Machining Planning with 5-DOF Haptic Interface for Virtual Prototyping and Manufacturing, *Proceedings of the International Conference on Advanced Research in Virtual and Rapid Prototyping*, Leiria, Portugal, Oct 2003
70. **Weihang Zhu**, Yuan-Shin Lee, Haptic Sculpting and Pencil-cut Planning in Virtual Prototyping and Manufacturing, *Proceedings of The ASME IMECE (International Mechanical Engineering Congress and Exposition)*, Washington DC, USA, Nov 2003, IMECE2003-42489

<u>Extended Abstract, Abstract, Presentation Only or Poster Only at University of Houston</u>

1. **Weihang Zhu**, High School Teacher Research Experience in Advanced Design and Manufacturing (poster only), NSF EEC Grantees Conference, September 21-23, 2022
2. **Weihang Zhu**, Applied Optimization in Energy Efficient Manufacturing (poster only), NSF Workshop at SMU on Future Directions in Service, Manufacturing, and Operations Research, March 29-31, 2019
3. **Weihang Zhu**, Virtual Reality and Augmented Reality for Safety Training and Workforce Development, ISA Process Control Symposium 2018, Houston, TX.

<u>Extended Abstract, Abstract, Presentation Only or Poster Only at Lamar University</u>

4. **Weihang Zhu**, Julia Yoo, James Curry, Brian Craig, Jiang Zhou, Hsing-wei Chu, SCOPE STEM Scholarship for Industrial and Mechanical Engineering Scholars (Extended Abstract), Industrial and System Engineering Research Conference, May 2018, Orlando, FL
5. **Weihang Zhu**, Xuejun Fan, Nicholas Brake, Xinyu Liu, Xianchang Li, Jiang Zhou, Dorothy Sisk, Julia Yoo, Incorporating Advanced Engineering Design and Manufacturing into High School Curriculum, National Science Foundation EEC Grantee Conference, Arlington, VA, October 29-31, 2017
6. *Sujay Mahale*, Alberto Marquez, **Weihang Zhu**, A Client Server Framework for A Job Shop Scheduling System To Minimize Tardiness and Labor Overtime Costs Under Labor and Machine Constraints, INFORMS 2017 Annual Conference, Houston, TX, October 22-25, 2017
7. *Sujay Mahale*, Ezra Wari, Alberto Marquez, **Weihang Zhu**, A MILP Model For Job And Labor Scheduling To Minimize Weighted Tardiness And Labor Costs for Parallel Machines, INFORMS 2017 Annual Conference, Houston, TX, October 22-25, 2017
8. *Mohammad Altayeb*, **Weihang Zhu**, Port Pilotage Discrete Event Simulation with GIS in AnyLogic, INFORMS 2017 Annual Conference, Houston, TX, October 22-25, 2017
9. *Arash Abedi*, **Weihang Zhu**, An Order Acceptance Model for Hybrid Production Strategy, INFORMS 2017 Annual Conference, Houston, TX, October 22-25, 2017
10. *Zhicheng Zhu*, Yisha Xiang, **Weihang Zhu**, James Curry, An Opportunistic Maintenance Policy for Degradation-based Multi-unit Systems, Industrial and System Engineering Research Conference, May 20 – 23, 2017, Pittsburgh, PA, USA
11. *Zhicheng Zhu*, Yisha Xiang, **Weihang Zhu**, Brian Craig, Preventive Maintenance for Port Equipment with Schedule Constraints, Industrial and System Engineering Research Conference, May 21 – 24, 2016, Anaheim, CA, USA
12. *Ezra Wari*, **Weihang Zhu**, Multi-week Scheduling for an Ice Cream Processing Facility, Industrial and System Engineering Research Conference, May 21 – 24, 2016, Anaheim, CA, USA
13. **Weihang Zhu**, Julia Yoo, Brian Craig, James Curry, Jiang Zhou, Hsing-wei Chu, SCOPE Scholarship for Industrial Engineering and Mechanical Engineering, the 2016 Lamar University Educational Conference, Beaumont, Texas, March, 2016;
14. **Weihang Zhu**, Julia Yoo, Alberto Marquez, "Engineering Economics Career" Mobile App for Assisting Teaching Engineering Economics Course, the 2016 Lamar University Educational Conference, Beaumont, Texas, March, 2016;
15. Kevin McSweeney, Brian Craig, James Curry, **Weihang Zhu**, Are Near Misses Impacting Safety Decision? (Presentation Only), *Transportation Research Board of the National Academies*, Washington, D.C., 2013
16. James Curry, **Weihang Zhu**, Brian Craig, Victor Zaloom, Development of a Web-based Safety Survey Data Analysis System for the Maritime Industry (Presentation only), *Proceedings of the Industrial Engineering Research Conference*, May 2012, Orlando, FL, USA;
17. **Weihang Zhu**, Haptic-augmented Learning Tools for Dynamics, the 2011 Lamar University Educational Conference, Beaumont, Texas, March 24 - 25, 2011;
18. **Weihang Zhu**, Kendrick Aung, Jiang Zhou, Haptic-augmented Learning Tools for Dynamics (invited only, poster), the 2011 CCLI/TUES PI Conference in Washington, D.C. on January 26 - 28, 2011;
19. **Weihang Zhu**, James Curry, Victor Zaloom, A Framework of GPU-accelerated Evolutionary Algorithms for Global Optimization, *INFORMS* 2010, Austin, TX (Presentation Only);

<u>Other Presentations at University of Houston</u>

1. Craig, B., Curry, J., Zhu., W., and McSweeney, K., ABS/Lamar University Leveraging Data Analysis to Improve Lifeboat Safety, Human Factors Lectern Session, Invited Speaker, Transportation Research Board 99th Annual Meeting, Washington DC, January 2020

Other Presentations at Lamar University

2. Optimization with Applications in Energy, Department of Industrial Engineering, University of Houston, Houston, TX, April 28, 2017
3. Virtual Reality and Augmented Reality for Education, Invited Talk at Mega Mobile Mania Conference at Education Service Center for Region 5, Beaumont, Texas, Nov 7, 2016
4. Introduction to Computer-aided Design for 3D Printing, Invited Talk at Mega Mobile Mania Conference at Education Service Center for Region 5, Beaumont, Texas, Oct 20th, 2015
5. Computational Optimization with GPU Computing, Department of Industrial Engineering, University of Houston, Houston, TX, USA, Oct 2010;
6. Computational Optimization with GPU Computing, Department of Computer Science, Lamar University, Beaumont, TX, USA, Nov 2009;
7. Haptics technologies and applications, The College of Engineering Advisory Council Conference, Lamar University, Beaumont, TX, USA, Mar 2006
8. Haptics technologies, The Instrumentation, Systems and Automation Society, Beaumont, TX, USA, Sept 2005
9. OpenHaptics Chinese Training, Shanghai, China, June 2004
10. OpenHaptics Japanese Training, Tokyo, Japan, June 2004
11. OpenHaptics European Training, Munich, Germany, June 2004
12. Haptics technologies and applications, Southern New Hampshire University, Apr 2004
13. Haptics technologies and Dental Simulation, School of Dentistry, Loma Linda University, Feb 2004

Demos

1. Epidural Simulator, *WorldHaptics* 2005, Pisa, Italy, March 2005
2. OpenHaptics SDK applications, *WorldHaptics* 2005, Pisa, Italy, March 2005
3. Haptic Device and Toolkit, *SIGGRAPH* 2004, Los Angeles, USA, August 2004
4. *Advanced Initiative in Medical Simulation* (AIMS), Capitol Hill, Washington D.C., May 2004
5. OpenHaptics SDK applications, Haptic Symposium 2004, Chicago, USA, March 2004
6. Freeform 3D Modeling system, School of Dentistry, Loma Linda University, CA, February 2004

Courses Taught at University of Houston

Course	**Semester**	**Title**	**Enroll**	**Credit**
MECT 3358	F2018	Dynamics of Mechanisms (+1 lab)	46	138
MECT 3365	S2019	Computer Aided Design – I (+1 lab)	39	117
MECT 3360	S2019	Automated Manufacturing Systems (+3 labs)	58	174
MECT 4397	S2019	Independent Study	2	6
MECT 3358	F2019	Dynamics of Mechanisms (+1 lab)	16	48
MECT 3360	F2019	Automated Manufacturing Systems (+3 labs)	57	171
MECT 6396	F2019	Special Topics: Advanced Manufacturing	1	3
MECT 3360	S2020	Automated Manufacturing Systems (+3 labs)	58	174
MECT 1364	S2020	Materials and Processes (+6 labs)	110	330
MECT 1364	F2020	Materials and Processes (+5 labs)	106	318
MECT 3360	F2020	Automated Manufacturing Systems (+3 labs)	59	177

MECT 1364	S2021	Materials and Processes (+2 labs)	39	78
MECT 3360	S2021	Automated Manufacturing Systems (+3 labs)	77	231
MECT 3360	F2021	Automated Manufacturing Systems (+3 labs)	54	162
MECT 4368	F2021	Simulation of Manufacturing Systems (+ 1 lab)	14	42
MECT 6397	F2021	Simulation of Manufacturing Systems (+ 1 lab)	3	9
MECT 3360	S2022	Automated Manufacturing Systems (+3 labs)	46	138
MECT 3330	S2022	Advanced Engineering Graphics (+ 1 lab)	14	42
MECT 6397	S2022	Advanced Engineering Graphics (+ 1 lab)	3	9
MECT 4275	F2022	Senior Design I	45	90
MECT 4276	F2022	Senior Design II	21	42
MECT 4275	S2023	Senior Design I	39	78
MECT 4276	S2023	Senior Design II	45	90
MECT 4275	F2023	Senior Design I	30	60
MECT 4276	F2023	Senior Design II	39	78
		Total	1,021	2,805

Courses Taught at Lamar University

Course	**Semester**	**Title**	**Enroll**	**Credit**
ENGR 5301	F2005	Haptics in Manufacturing *	9	27
INEN 4300	F2005	Quality Improvement	19	57
ENGR 5312	F2005	Quality Improvement	12	36
INEN 3322	S2006	Engineering Material and Processes	12	24
INEN 3322	S2006	Engineering Material and Processes Labs	12	12
INEN 4345	S2006	Computer-Integrated Manufacturing	10	30
ENGR 5345	S2006	Computer-Integrated Manufacturing	14	42
ENGR 4301	S2006	Automated System Engineering *	1	3
ENGR 5301	S2006	Automated System Engineering	16	48
ENGR 5301	SI2006	Haptics in Manufacturing	9	27
ENGR 4301	SI2006	Engineering Database Design *	1	3
ENGR 5301	SI2006	Engineering Database Design	6	18
ENGR 5301	SII2006	Advanced Pro/Manufacturing *	5	15
ENGR 5301	F2006	Haptics in Manufacturing	7	21
INEN 4300	F2006	Quality Improvement	26	78
ENGR 5312	F2006	Quality Improvement	12	36
INEN 3322	F2006	Engineering Material and Processes	32	64
INEN 3322	F2006	Engineering Material and Processes Labs	32	32
INEN 3322	S2007	Engineering Material and Processes	18	36
INEN 3322	S2007	Engineering Material and Processes Labs	18	18
INEN 4345	S2007	Computer-Integrated Manufacturing	8	24

INEN 5345	S2007	Computer-Integrated Manufacturing	11	33
INEN 4396	SI2007	Automated System Engineering	2	6
INEN 5394	SI2007	Engineering Database Design	7	21
INEN 5396	SI2007	Automated System Engineering	6	18
INEN 3322	F2007	Engineering Material and Processes	38	76
INEN 3322	F2007	Engineering Material and Processes Labs	20	20
ENGR 5101	F2007	ST: Research Seminar *	9	9
ENGR 5301	F2007	ST: Computational Methods *	5	15
ENGR 5392	F2007	Computer Haptics	5	15
ENGR 5301	S2008	ST: Robotics *	7	21
INEN 4345	S2008	Computer-Integrated Manufacturing	10	30
INEN 5345	S2008	Computer-Integrated Manufacturing	6	18
ENGR 5101	F2008	ST: Research Seminar	6	6
ENGR 5301	F2008	ST: Computational Methods	6	18
INEN 3322	F2008	Engineering Material and Processes	38	76
INEN 3322	F2008	Engineering Material and Processes Labs	20	20
ENGR 5301	S2009	ST: Robotics	11	33
INEN 4345	S2009	Computer-Integrated Manufacturing	11	33
INEN 5345	S2009	Computer-Integrated Manufacturing	13	39
ENGR 5101	F2009	ST: Research Seminar	11	11
INEN 3322	F2009	Engineering Material and Processes	40	80
INEN 3322	F2009	Engineering Material and Processes Labs	21	21
INEN 5394	F2009	Engineering Database Design	10	30
ENGR 6320	S2010	Justification Engineering	1	3
ENGR 5301	S2010	ST: Multi-objective Optimization *	7	21
INEN 4345	S2010	Computer-Integrated Manufacturing	12	36
INEN 5345	S2010	Computer-Integrated Manufacturing	15	45
ENGR 5301	SI2010	ST: Robotics	8	24
INEN 5394	SI2010	Engineering Database Design	11	33
ENGR 6320	F2010	Justification Engineering	1	3
ENGR 6601	F2010	Field Study	1	6
ENGR 5101	F2010	ST: Research Seminar	5	5
ENGR 6110	F2010	Doctoral Seminar	13	13
INEN 3322	F2010	Engineering Material and Processes	44	88
INEN 3322	F2010	Engineering Material and Processes Labs	21	21
INEN 5394	F2010	Engineering Database Design	6	18
ENGR 6320	S2011	Justification Engineering	1	3
ENGR 6601	S2011	Field Study	1	6
ENGR 5320	S2011	Statistical Decision Making	11	33
INEN 4345	S2011	Computer Integrated Manufacturing and lab	10	30
INEN 5345	S2011	Computer Integrated Manufacturing and lab	9	27

ENGR 6320	SIII2011	Justification Engineering	1	3
ENGR 5301	SI2011	Introduction to Robotics	9	27
INEN 5396	SI2011	Automated System Engineering	11	33
ENGR 6320	F2011	Justification Engineering	1	3
ENGR 6602	F2011	Field Study	1	6
ENGR 6110	F2011	Doctoral Seminar	14	14
ENGR 5101	F2011	Masters Seminar	10	10
INEN 3322	F2011	Engineering Material and Processes	40	80
INEN 3322	F2011	Engineering Material and Processes Labs	21	21
INEN 5394	F2011	Engineering Database Design	10	30
ENGR 6320	S2012	Justification Engineering	1	3
ENGR 6601	S2012	Field Study	1	6
ENGR 6373	S2012	Multi-obj Optimization	7	21
INEN 4345	S2012	Computer Integrated Manufacturing and lab	13	39
INEN 5345	S2012	Computer Integrated Manufacturing and lab	7	21
ENGR 6110	S2012	Doctoral Seminar	13	13
ENGR 6320	SIII2012	Justification Engineering	1	3
ENGR 5390	SIII2012	Thesis	1	3
ENGR 4301	SIII2012	ST: Manufacturing for IT	12	36
INEN 5396	SI 2012	Automated System Engineering	7	21
ENGR 6320	F2012	Justification Engineering	1	3
ENGR 6601	F2012	Field Study	1	6
ENGR 6602	F2012	Field Study	1	6
ENGR 5390	F2012	Thesis	1	3
ENGR 5391	F2012	Thesis	1	3
ENGR 5110	F2012	Masters Seminar	2	2
INEN 3322	F2012	Engineering Material and Processes	33	66
INEN 4375	F2012	Simulation of Industrial Systems	13	39
INEN 5375	F2012	Simulation of Industrial Systems	7	21
ENGR 6601	S2013	Field Study	1	6
ENGR 6602	S2013	Field Study	1	6
ENGR 5391	S2013	Thesis	2	6
INEN 3322	S2013	Engineering Material and Processes	34	68
INEN 4345	S2013	Computer Integrated Manufacturing and lab	11	33
INEN 5345	S2013	Computer Integrated Manufacturing and lab	7	21
ENGR 6602	SIII2013	Field Study	1	6
ENGR 4301	SIII2013	ST: Manufacturing for IT	10	30
INEN 5396	SI 2013	Automated System Engineering	5	15
ENGR 6320	F2013	Justification Engineering	1	3
ENGR 5391	F2013	Thesis	1	3
INEN 3322	F2013	Engineering Material and Processes	44	88

INEN 4375	F2013	Simulation of Industrial Systems	15	45
INEN 5375	F2013	Simulation of Industrial Systems	10	30
ENGR 6320	S2014	Justification Engineering	2	6
ENGR 6601	S2014	Field Study	2	12
INEN 3322	S2014	Engineering Material and Processes	42	84
INEN 4345	S2014	Computer Integrated Manufacturing and lab	15	45
INEN 5345	S2014	Computer Integrated Manufacturing and lab	11	33
ENGR 6320	F2014	Justification Engineering	1	3
ENGR 6601	F2014	Field Study	2	12
ENGR 6602	F2014	Field Study	1	6
INEN 3322	F2014	Engineering Material and Processes	82	164
INEN 4375	F2014	Simulation of Industrial Systems	9	27
INEN 5375	F2014	Simulation of Industrial Systems	28	84
ENGR 6320	S2015	Justification Engineering	2	6
ENGR 6601	S2015	Field Study	2	12
INEN 3322	S2015	Engineering Material and Processes	56	112
INEN 4345	S2015	Computer Integrated Manufacturing and lab	8	24
INEN 4345	S2015	Computer Integrated Mfg and lab (online)	13	39
INEN 5345	S2015	Computer Integrated Manufacturing and lab	22	66
ENGR 6320	SIII2015	Justification Engineering	1	3
ENGR 4301	SIII2015	ST: Manufacturing for IT	11	33
ENGR 6320	F2015	Justification Engineering	2	6
ENGR 6601	F2015	Field Study	3	18
ENGR 6602	F2015	Field Study	2	12
INEN 3322	F2015	Engineering Material and Processes	81	162
INEN 4375	F2015	Simulation of Industrial Systems	11	33
INEN 4375	F2015	Simulation of Industrial Systems (online)	7	21
INEN 5375	F2015	Simulation of Industrial Systems	92	276
ENGR 6320	S2016	Justification Engineering	1	3
ENGR 6601	S2016	Field Study	4	24
ENGR 6602	S2016	Field Study	3	18
INEN 3322	S2016	Engineering Material and Processes	38	76
INEN 4345	S2016	Computer Integrated Manufacturing	14	28
INEN 4345	S2016	Computer Integrated Mfg and lab (online)	10	30
INEN 5345	S2016	Computer Integrated Manufacturing	20	40
INEN 3323	SIII2016	Fundamentals of Manufacturing	14	42
INEN 5301	SII2016	ST: Multi-method Simulation *	12	36
ENGR 6320	SIII 2016	Justification Engineering	3	9
ENGR 6601	SIII 2016	Field Study	1	6
ENGR 5390	F2016	Thesis	3	9

ENGR 6320	F2016	Justification Engineering	1	3
ENGR 6601	F2016	Field Study	4	24
ENGR 6602	F2016	Field Study	3	18
INEN 3322	F2016	Engineering Material and Processes	83	166
INEN 3322	F2016	Engineering Material and Processes Lab	7	7
INEN 4375	F2016	Simulation of Industrial Systems	17	34
INEN 4375	F2016	Simulation of Industrial Systems (online)	4	12
INEN 5375	F2016	Simulation of Industrial Systems	47	94
INEN 3322	S2017	Engineering Material and Processes	38	76
INEN 4345	S2017	Computer Integrated Manufacturing	19	38
INEN 4345	S2017	Computer Integrated Mfg and lab (online)	9	27
INEN 5345	S2017	Computer Integrated Manufacturing	20	40
ENGR 6320	S2017	Justification Engineering	1	3
ENGR 6603	S2017	Dissertation	1	6
ENGR 6604	S2017	Dissertation	2	12
ENGR 5391	S2017	Thesis	2	6
INEN 3323	SIII2017	Fundamentals of Manufacturing	18	54
INEN 4396	SIII2017	Automated Systems Engineering	12	36
ENGR 5391	F2017	Thesis	1	3
INEN 3322	F2017	Engineering Material and Processes	89	178
INEN 4375	F2017	Simulation of Industrial Systems	12	24
INEN 4375	F2017	Simulation of Industrial Systems	7	14
INEN 5375	F2017	Simulation of Industrial Systems	24	48
INEN 3322	S2018	Engineering Material and Processes	47	94
INEN 4345	S2018	Computer Integrated Manufacturing	18	36
INEN 4345	S2018	Computer Integrated Manufacturing (online)	19	38
INEN 5345	S2018	Computer Integrated Manufacturing	23	46
MEEN 3350	S2018	Computer-Aided Engineering I	49	147
MEEN 3350	S2018	Computer-Aided Engineering II	45	135
MEEN 3350	S2018	Computer-Aided Engineering I Lab	49	49
MEEN 3350	S2018	Computer-Aided Engineering II Lab	45	45
ENGR 6320	S2018	Justification Engineering	1	3
ENGR 6603	S2018	Dissertation	1	6
ENGR 5390	S2018	Thesis	1	3
ENGR 5391	S2018	Thesis	1	3
INEN 3323	SIII 2018	Fundamentals of Manufacturing	15	45
INEN 4396	SIII 2018	Automated Systems Engineering	11	33
		Total	2,531	5,884

Note: those courses marked with * are newly developed courses (9 new courses developed).

"Quality Matters" (QM) Assessment for Online Course Development

1. INEN 3322/3323 Engineering Materials and Manufacturing Processes, passed "Quality Matters" assessment in Summer 2012;
2. INEN 4375 Simulation of Industrial Systems, passed "Quality Matters" assessment in Fall 2015;
3. INEN 4345 Computer-integrated Manufacturing, passed "Quality Matters" assessment in Spring 2016;

In Fall 2017, I have completed training as a *Certified QM Reviewer*. Since then, I have completed 12 course reviews representing 'Quality Matters.'

Service & Synergistic Activities

Departmental Service at University of Houston

Program Coordinator, MET program: • Course scheduling • TA selection and hiring • Student petition reviews • Coordinate PCC meetings • Host ABET accreditation visit in 2022 • Annual SACS data collection for BS-MET • Prepare transition to Sugar Land campus • Represent MET in high school recruitment events • Outreach to industrial partners • Cooperate with undergraduate advisors	08/2022 – present
Graduate Program Coordinator, MET program: • New student admission • Course scheduling • TA recommendation • Student petition reviews • Give online seminars to potential students • Participate in PCC meetings • Coordinate ABET 2022 data collection for MET • Annual SACS data collection for MS-MET • Coordinate lab transition to Sugar Land campus • Represent MS-MET in graduate program open houses • Outreach to industrial partners • Cooperate with graduate advisors	2018 – 03/2023
Departmental Faculty Annual Review Committee: review ~23 ET faculty annual report each year and submit reports to ET chair	2022 – 2024

Departmental Promotion and Tenure Committee member	11/2022 – present
ABET 2022 data coordinator for MET: coordinate all the course data from MET faculty, review and revise the course data forms	2020 – 2022
Host a visiting scholar from Dalian Maritime University – Zhaoyi Zhang	07/2022 – 07/2023
Online lab task force for ET	2020
Coordinate manufacturing lab planning and assist manufacturing course planning in UH Sugar Land campus: lab equipment purchases coordination, lab reviews with UH facility planning and Dean, lead purchase planning	2019 - 2022
Chair of UH MET Tenure Track Faculty Search Committee 2022-23	2022-23
Committee member of UH MET Non-tenure Track Faculty Search Committee 2022-23	2022-23
Chair of UH MET Tenure Track Faculty Search Committee 2019	2019
Chair of UH MET Lab Technician Search Committee 2019	2019
Mechatronics Minor course planning	2019
Give a presentation on Respondus Lockdown Browser and Webcam-based Proctoring to ET faculty	Apr 10, 2020
Give a talk in the QM Online Course development workshop for UH COT	Feb 22, 2019

Departmental Service at Lamar University

Graduate Advisor at Lamar (annual number of graduate students: 40~220) • Recruit new students, increase student enrollment up to 220 • Review student records and determine student admission • Prepare DE, ME and MES admission requirement for IE • Advise student courses • Serve in numerous Comprehensive Exam committees • Organize Comprehensive Exams	9/2006 – 08/2018
Prepare course assessment materials for ABET	Every year
Search committee members for 3 IE Assistant Professors	2015 - 2016
Search committee chairs for two IE Assistant Professors and one instructor	2014 - 2015
Assist hiring two new IE Assistant Professors	2013 - 2014
Host Industrial Engineering Open House to high school students: Fall 2005, Spring 2006, Fall 2006, Spring 2007, Fall 2007, Spring 2008, Fall 2008, Spring 2009, Fall 2009, Spring 2010, Fall 2010, Spring 2011, Fall 2011, Spring 2012, Fall 2012, Spring 2013, Fall 2013, Spring 2014, Fall 2014, Spring 2015, Fall 2015, Spring 2016, Fall 2016, Spring 2017, Fall 2017, Spring 2018	Every semester from 2005 to 2018
Sat in and evaluate Mechanical and Industrial Engineering senior design presentations	Most semesters
The Tenure and Promotion Committee of Dr. J. Curry	2011
The Tenure and Promotion Committee of Dr. A. Marquez and Dr. X. Liu	2012
Complete annual research report for the IE department	2008 – 2018

Prepared job description for IE Technician position	2014
When Chair was not in, I attended CID meetings and Chair meetings a few times.	2014
Hosted a visiting scholar Dr. Ge Jiang and a visiting student, from Zhejiang University of Technology – Zhijiang College	Sept to Oct 2014
Hosted a visiting scholar Dr. Ge Jiang, from Zhejiang University of Technology – Zhijiang College	Sept to Nov 2011

College Service at University of Houston

COT By-law Committee	2021
COT Liaison for teachHOUSTON program, funded by NSF Robert Noyce Teachers Program	2020
Support UH COT Graduate Program Open House multiple times	2019, 2022

College Service at Lamar University

SACS Coordinator for Master of Engineering, Master of Engineering Science and Doctor of Engineering (ME/MES/DE) programs (for College of Engineering from 09/2007 to 08/2016, for Department of Industrial Engineering from 09/2007 to 08/2018) at Lamar University ● Prepare assessment plan each year; ● Prepare the learning objectives and institutional effectiveness documents; ● Collected assessment results and submitted to Weave system each year; ● Prepare high impact programs documentation; ● Prepare DE, ME and MES graduate plan for graduate catalog; ● In 2014~2015, completed Program Improvement Report (PIR) for DE, ME and MES programs;	9/2007 – 08/2018
Faculty Annual Evaluation Committee	2018
Teach Fundamental of Engineering course – Dynamics, each semester	2014 - 2016
The Tenure and Promotion Committee of Dr. T. Benson	2014
The University Professor and Merit Award 2011 nomination committee	2011, 2016
Lab Safety Committee	2015 - 2018
Various ad-hoc committees	2006 - 2016

University Service at University of Houston

Member of Cougar Chair Leadership Academy	2021-22
Liaison with teachHOUSTON for tH-ACCESS scholarship	2020 - 2025
Nominated for Faculty Senator at UH multiple times	2019 - 2023

University Service at Lamar University

Science DMZ Committee at Lamar University	2018

Member of Quality Enhancement Program (QEP) Assessment Committee	2015 – 2017
Faculty Mentor for SMART program	2016 – 2017
Member, Lamar University Undergraduate Research Advisory Committee	2014 - 2018
Member of Lamar University Research Council	2012 - 2015
Member of Lamar University Provost Search Committee	2014 - 2015
Faculty Senator	2009 - 2012

Professional Service

- Senior Editor: Journal of Industrial and Production Engineering (2017-present)
- Panelist
  - 'The Engineering Gap – Is Production Meeting Demand?', the Instrumentation, Systems and Automation Society Exposition, Houston, TX, USA, Oct 2006
  - National Science Foundation Panel reviewer for ENG-CMMI in Spring 2008
  - National Science Foundation Panel reviewer for ENG-IIP-SBIR in Summer 2008
  - National Science Foundation Panel reviewer for ENG-CMMI in Spring 2009
  - National Science Foundation Panel reviewer for ENG-IIP-SBIR in Summer 2009
  - National Science Foundation Panel reviewer for ENG-IIP-SBIR in Spring 2010
  - National Science Foundation Panel reviewer for ENG-IIP-SBIR in Spring 2011
  - National Science Foundation Panel reviewer for ENG-EEC in Summer 2011
  - National Science Foundation Panel reviewer for ENG-IIP-SBIR-II in Fall 2011
  - National Science Foundation Panel reviewer for ENG-CMMI in Spring 2012
  - National Science Foundation Panel reviewer for EHR-DUE in Summer 2012
  - National Science Foundation Panel reviewer for ENG-MRI in Spring 2013
  - National Science Foundation Panel reviewer for EHR-DUE in Fall 2015
  - National Science Foundation Panel reviewer for ENG-EEC in Jan 2017
  - National Science Foundation Panel reviewer for ENG-EEC in Nov 2017
  - National Science Foundation Panel reviewer for ENG-EEC in June 2019
  - National Science Foundation Panel reviewer for ENG-EEC in December 2019
  - National Science Foundation Panel reviewer for ENG in January 2020
  - National Science Foundation Panel reviewer for ENG-CMMI in July 2020
  - National Science Foundation Panel reviewer for ENG in January 2021
  - National Science Foundation Panel reviewer for EHR-DUE in April 2021
  - National Science Foundation Panel reviewer for ENG-CMMI in June 2021
  - National Science Foundation Panel reviewer for ENG-EEC in Dec 2021
  - National Science Foundation Panel reviewer for ENG-CMMI in June 2022
  - National Science Foundation Panel reviewer for EDU-DUE in March 2023
  - National Science Foundation Panel reviewer for EDU-DUE in September 2023
  - National Science Foundation Ad-hoc reviewer, Summer 2012
  - National Science Foundation Ad-hoc reviewer, Summer 2015
  - National Science Foundation Ad-hoc reviewer (twice), October 2022
  - National Institute of Health Panel reviewer in Spring 2012
  - National Institute of Health Panel reviewer in Summer 2012
  - National Institute of Health Panel reviewer in Fall 2012
  - National Institute of Health Panel reviewer on June 17, 2014
  - National Institute of Health Panel reviewer on June 30, 2014
  - Oak Ridge Associated Universities Panel reviewer for DoD HBCU/MI in July 2017
  - Oak Ridge Associated Universities Panel reviewer for Ralph E Powe Junior Faculty Enhancement Awards in March 2018

- Oak Ridge Associated Universities Panel reviewer for Ralph E Powe Junior Faculty Enhancement Awards in 2019
- Oak Ridge Associated Universities Panel reviewer for DoD HBCU/MI in April 2020

- Program Chair: International Conference on Haptics and Virtual Reality (ICHVR 2022, ICHVR 2023)
- Program Committee member:
  - International Conference on Virtual Reality and Visualization 2016
  - International Symposium of Neural Networks 2011
  - Third International Workshop on Advanced Computational Intelligence 2011
  - International Symposium of Neural Networks 2010
  - International Conferences on Manufacturing Automation 2010
  - Eighth International Conference on Simulated Evolution And Learning (SEAL-2010)
- Symposium Organizer for ASME Manufacturing Science and Engineering Conference 2009, Purdue University, West Lafayette, Indiana
- Co-Founder of Modeling & Simulation Division of Institute of Industrial and Systems Engineering (IISE), inaugural Director of Award 2016-2018
- Vice Chair of Communication, ASEE Engineering Technology Division, webmaster of www.engtech.org, since June 2022
- Track chair/co-chair: ISERC 2016 Modeling and Simulation track
- Session chair/co-chair:
  - TAMU MKO Process Safety 2022 Conference
  - Texas STEM 2017 Conference
  - ISERC 2016 Conference
  - Texas STEM 2015 Conference
  - ISERC 2015 Conference
  - IEEE SMC 2009 Conference
  - ASME IMECE 2008 Conference
  - SME/NAMRI 2007 Conference
  - ASME MSEC 2006 Conference
- Book reviewer: The Handbook of Technology Management (2008) Two book proposals for CRC Press (2020) Two book proposals for Wiley Press (2020)
- Journal reviewer:

1. Agriculture (MDPI)
2. Algorithms (MDPI)
3. Applied Sciences (MDPI)
4. ACM-Computing Surveys
5. Aircraft Engineering and Aerospace Technology
6. ASEE Journal of Engineering Technology
7. ASME Journal of Manufacturing Science and Engineering
8. Computers (MDPI)
9. Computers and Industrial Engineering
10. Computers and Chemical Engineering
11. Energy Reports
12. IEEE Transactions on Automation Science and Engineering
13. IEEE Transactions on Cybernetics
14. IEEE Transactions on Human-Machine Systems
15. IEEE Transactions on System, Man and Cybernetics-B
16. IISE Transactions
17. Image and Vision Computing
18. International Journal of Bio-Inspired Computation

19. International Journal of Communication Systems
20. International Journal of Production Economics
21. International Journal of Production Research
22. Journal of Advanced Manufacturing and Processes
23. Journal of Automation, Mobile Robotics & Intelligent System
24. Journal of Cleaner Production
25. Journal of Computer-Aided Design
26. Journal of Heuristics
27. Mathematics and Computers in Simulation
28. Optimization Methods and Software
29. Production and Operation Management Journal
30. SME Journal of Manufacturing Systems
31. Sensor Review
32. Sensors (MDPI)
33. Transactions of the ASME: Journal of Computing and Information Science in Engineering
34. Virtual Reality

- Conference paper reviewer:

1. IISE 2023 Conference
2. ASEE 2023 Conference
3. ASEE 2022 Conference
4. ASEE 2021 Conference
5. ASEE 2020 Conference
6. ASEE 2019 Conference
7. ASME IDETC/CIE 2019 Conference
8. ASME IDETC/CIE 2018 Conference
9. NAMRC 2018 Conference
10. ASEE 2018 Conference
11. ISERC 2017 Conference
12. ASEE 2017 Conference
13. ICVRV 2016 Conference
14. ASME-IDETC 2016 Conference
15. ISERC 2016 Conference
16. ASEE 2016 Conference
17. WorldHaptics 2015 Conference
18. ASME IMECE 2015 Conference
19. FAIM 2014 Conference
20. ISCIE/ASME 2014 International Symposium on Flexible Automation (ISFA2014)
21. SME NAMRC 2014 Conference
22. IEEE SSCI 2014 Conference
23. ISERC 2012 Annual Conference,
24. IEEE CEC 2012
25. ASME MSEC 2011
26. ASME IDETC/CIE 2011
27. SEAL 2010 Conference
28. IERC 2010 Annual Conference
29. ASME IDETC/CIE 2010 Conference
30. ASME WINVR 2010 Conference
31. ASME MSEC 2009 Conference
32. ACM SIGEVO Genetic and Evolutionary Computing Summit 2009 Conference
33. ASME IMECE 2008 Conference

34. WorldHaptics 2007 Conference
35. ASME MSEC 2007 Conference
36. ASME MSEC 2006 Conference
37. ASME IDETC 2004 Conference
38. ASME IMECE 2004 Conference

- Professional Consulting:
  - Yantric *Inc*., Touch-based Medical Simulation proposals and projects, especially in Regional Anesthesia (*National Institute of Standards and Technology* and *U.S. Department of Defense* funded Research & Development), Collaboration with MIT (Massachusetts Institute of Technology) Touch Lab and MGH (Massachusetts General Hospital)
  - mySmartSimulation *Inc*., Education and Training, Virtual Reality and Haptic-based Medical Simulation projects; developed a haptic-based laser prostate surgical simulator (http://www.nxtbook.com/nxtbooks/nielsen/training0909/index.php?startid=Cover1&WidgetId=null&BookId=9afdeb795f7857e8cc4dc62aa37db9bb#/64)
  - PinnacleART, Industrial Reliability and Maintenance, Optimization
- Ph.D. dissertation adjudication for:
  - Andhra University, Visakhapatrnam, India, 2008
  - Indian Institute of Technology – Madras, India, 2015
  - Indian Institute of Technology – Madras, India, 2019
- Certified by Quality Matters as online course reviewer
- Faculty Advisor for UH Society of Manufacturing Engineers student chapter (2021 – present)

Major Community and Outreach Services

- Organized a golf ball tournament with ISA (Instrumentation, System and Automation Society) – Beaumont Section, and raised $5,000 for Lamar Industrial Automation and Process Control Initiative, May 2007
- Organized a golf ball tournament with ISA (Instrumentation, System and Automation Society) – Beaumont Section, and raised $30,000 for College of Engineering Scholarship, May 2009
- Gave haptics and robotics presentation to K8 students from the M.L.K. middle school at Beaumont, Texas, April 2007 and May 2008
- Gave haptics and robotics presentation to K9-12 students from the Lamar University Achievement in Mathematics Program, a summer enrichment camp for female, underrepresented, and economically disadvantaged high school students, June 2010
- Gave presentation of Mobile Learning to 100 high school students from Lumberton ISD, Dec 2013
- Gave presentation of Mobile Learning to 30 high school students from High Island High School, Dec 2013
- Supported presentation of Mobile Learning, Robotics and 3D printing to 30 middle school students in Lamar Introduction to Engineering (LITE) summer camp, July 2014
- Presentation of 3D printing to 50 high school teachers in STEM seminars, Jan 12, 2015
- Presentation of 3D printing and design software to 50 middle school students in Lamar Introduction to Engineering (LITE) summer camp, July 2015
- Presentation of 3D printing and design software to 40 high school teachers in July 2015
- Attended numerous ASME and ISA local professional section meetings
- Support presentation of Haptics and 3D printing to 50 middle school students in Lamar Introduction to Engineering (LITE) summer camp, July 2016
- Support presentation of Haptics and 3D printing to 50 middle school students in Lamar Introduction to Engineering (LITE) summer camp, July 2017
- Collaboration with Education Service Center for Region 5 (ESC5) and local school districts on

research proposals
- Take 12 high school teachers to visit four local companies in summer 2017
- Take 12 high school teachers to visit four local companies in summer 2018
- Take 12 high school teachers to visit four local companies in summer 2021
- Take 12 high school teachers to visit four local companies in summer 2022
- Take 15 high school teachers and 8 preservice teachers to visit four local companies in summer 2023
- Joined the Catapult Houston ISD visit to Sugar Land campus event and hosted 40 high school students for MET program, Feb 24, 2023
- Joined the Lamar CCISD student visit to Sugar Land campus event and hosted 5 panels, March 2, 2023
- Gave a talk to about 50 teachers in Science Leadership Network organized at Education Service Center at Texas Region 4 (ESC4), hosted by Dodie Resendez, March 8, 2023
- Gave talks in multiple teachHOUSTON classes to promote Industries of the Future summer research program for preservice teachers, March 2023

Major Faculty Development Activities

- As the only engineering faculty member, attended voluntary Accent Management short course (8 lectures) offered by Department of Speech and Hearing at Lamar University, April 2016
- Attended Entrepreneur Bootcamp organized by Lamar Center of Innovation, Commercialization and Entrepreneurship, September 16 - 17, 2016
- Attended 2017 Academic Leadership Workshop, Houston, TX, in INFORMS 2017 Conference, October 21, 2017
- Attended Entrepreneur Bootcamp on December 1 to 2, 2017, organized by Lamar Center of Innovation, Commercialization and Entrepreneurship
- Attended Workshop on Writing Grant Proposals, Oct 24, 2018
- Attended Manufacturing Education Conference in Houston Community College, Oct 26, 2018
- Attended ISA PCS 2018 Conference, Houston, Oct 31, 2018
- Attend HAAS Lathe training in Champion CNC, in Spring, Texas, Jan 8-9, 2019
- Attend HAAS Mill training in Champion CNC, in Spring, Texas, Jan 23, 2019
- Attended BTI annual meeting in Washington DC, June 26, 2019
- Attended Material Handling Teacher Institute in Texas State University at San Marcos, TX, July 23-26, 2019
- Attended DoD proposal workshop at Student Center South, UH, Oct 7, 2019
- Attended the UH 2-day workshop “Data Analytics Using GPUs”, Dec 12-13, 2019
- Attended Cluster 101 course at HPE Data Science Institute, 5 weeks, Jan 21 to Feb 20.
- Attended Machine Learning course at HPE Data Science Institute, 5 weeks, Feb 25 to Apr 14.
- Attended ‘Port of the Future’ Conference, March 11, 2020
- Completed ‘Data Science and Scientific Computing using Julia’ 15-hour training certificate training course at the UH HPE Data Science Institute in summer 2020
- Completed ‘R for Statistical Computing’ training certificate training course at the UH HPE Data Science Institute in summer 2020
- Completed the Virtual Bootcamp on Model-based System Engineering “Simulation in support of digital twins and industry 4.0”, October 15-16, 2020, at University of Texas – Rio Grande Valley
- Competed the Certificate in Data Visualization with Tableau and ParaView, by UH Data Science Institute, 15 hours study with an exam, Jan to Mar 2021
- Attended Port of the Future Conference, UH, March 15-18, 2021

- Attended Automation Forward Conference, March 22-26, 2021
- Attended SNAME Offshore Symposium, April 6-7, 2021, Houston, TX
- Attended NSF Academia-Industry Collaborative Workshop on Advanced Manufacturing, May 19-21, University of Florida (Virtual)
- Attended HAAS TEC Conference from July 19-21, 2021, Hudson Valley Community College, a virtual conference
- Attended NSF Convergence Accelerator Conference in July 28-29, 2021, a virtual conference
- Attended the UH FED Virtual Faculty Café, Operationalizing Diversity, Equity, and Inclusion in the Classroom, 12:30 – 2:00PM online, Sept 20, 2021
- Attended Maritime Risk Symposium, Nov 1 to 5, 2021, College of Technology, UH
- Attended Smart Manufacturing Summit, Nov 3-4, 2021
- Selected to be a member of the 2021-2022 University of Houston Cougar Chairs Leadership Academy (CCLA). Participation will provide you with an exceptional opportunity to enhance your leadership knowledge and skills, understand how to manage organizational change, and establish a network of peer colleagues for support.
- Certified by NVIDIA as the UH University Ambassador and as 'Fundamentals of Deep Learning' workshop instructor on Feb 17, 2022.
- Attended SIMIO Sync 2022: Practical Application virtual conference, Feb 28 – Mar 2, 2022
- Attended NVIDIA GTC Virtual Conference, March 23, 2022
- Attended ISA IIoT & Smart Manufacturing Virtual Conference, March 30, 2022.
- Attended Fanuc Robot Certified Instructor training, Apr 2022
- Attended Fanuc Robot in-person training, May 31 to June 3, 2022
- Attended Mary Kay O'Connor Process Safety Conference at TAMU, Oct 5-6, 2022
- Attended AI Across America event at Houston Community College – West Loop, Oct 27, 2022
- Attended 'Simio Sync' online conference, March 1. 2023
- Attended the 28th SNAME Houston Section Offshore Symposium and gave a talk on offshore safety leading indicator, March 8, 2023
- Attended NVIDIA AI City Forum at the Westin Hotel, Memorial City, Houston, Texas, March 22, 2023
- Passed Quality Matters (QM) course on the 7th edition standard update of the QM Standard, August 2023

Languages

- English (fluent); Chinese (native); Japanese (intermediate); Spanish (basic); French (basic)

Computer Skills

- *Tools*: Visual C++, Objective-C, Java, JavaScript+HTML5+CSS3, PHP, Python, Bootstrap, AngularJS, CUDA, R, OpenGL, Visual Basic, OpenHaptics, Novint Falcon SDK, Python, SolidWorks API; Work with Windows, Mac and Linux;
- *Commercial software development system*: Visual Studio, X-Code, Eclipse for Java, GIT;
- *Database*: MySQL/MariaDB, MS Access, MongoDB, MS SQL Server;
- *CAD/CAM*: PTC Creo, SolidWorks, AnSys, Autodesk Fusion 360, CNC programming;
- *Web Server*: Apache, Node.js;
- *Others*: MATLAB, Scikit-Learn, R, SPSS, MiniTab, Rockwell Arena, AnyLogic, NetLogo, MapWindowGIS, Irrlicht 3D, ODE, Rockwell RsLogix, TriLogi, CPLEX, DreamWeaver, Photoshop, MS Visio, *etc;*