

**Mingshao Zhang**  
Southern Illinois University Edwardsville  
Associate Professor  
Mech and Mechatronics Eng  
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## **Education**

MBA, Southern Illinois University Edwardsville, 2021.  
Major: Business Administration

Ph D, Stevens Institute of Technology, 2016.  
Major: Mechanical Engineering  
Dissertation Title: Vision-based Object Tracking using 3-D Scanners with Applications in Educational Laboratories

MS, Stevens Institute of Technology, 2012.  
Major: Mechanical Engineering

BSE, University of Science and Technology of China, 2010.  
Major: Mechanical Engineering and Automation

## **Professional Positions**

Associate Professor, Southern Illinois University Edwardsville. (August 16, 2022 - Present).

Assistant Professor, Southern Illinois University Edwardsville. (August 16, 2016 - August 15, 2022).

STEM Center Faculty Fellow, Southern Illinois University Edwardsville. (July 1, 2018 - June 30, 2019).

Graduate Research Assistant, Stevens Institute of Technology. (August 20, 2010 - May 30, 2016).

Undergraduate Research Assistant, University of Science and Technology of China. (February 1, 2009 - May 30, 2010).

## **Patents and Patent Publications**

York, T. E., Crabtree, T., McKay, M., Zhang, M. "Multifunctional Camera System for Video Assisted Thoracic Surgery." (Application: April 5, 2019, Approved: December 20, 2022).

## **Trials, Testimony and Depositions**

Case PGR2022-00050, Danxiao Information Technology v. Shenzhen Svakom Technology Co., filed expert report

Case PGR2020-00001, Dong Guan Leafy Windowware Co. Ltd. v. ANLI SPRING CO., LTD., HSIEN-TE HUANG, filed expert report.

Case Nos. IPR2019-00530 and 00616, Man Wah Holdings Limited et al. v. Raffel Systems, LLC, filed expert reports

Case PGR2019-00029, Man Wah Holdings Limited et al. v. Raffel Systems, LLC, filed expert report and was deposed as an expert witness

## Publications

- Liu, C., Le, L., Zhang, M., & Ding, J. (2021). *Tunable large-scale compressive strain sensor based on carbon nanotubes/PDMS foam composites by additive manufacturing*. Published.
- Zhang, Z., Zhang, A., Zhang, M., & Esche, S. K. (2020). *Project-based courses for B. Tech. program of robotics in mechanical engineering technology*. 11(1), 1–7.
- Duan, P., Liu, Y., Ding, J., & Zhang, M. (2019, November). *Development of Vision-based Control System for Mobile 3D Printer*. Published.
- Zhang, Z., Zhang, A. S., Zhang, M., & Esche, S. K. (2019). *Design and Application of a Platform of Wireless Sensor and Control Network in Robotics Course of Mechanical Engineering Technology*. 10(1), 1–7.
- Zhang, M., Duan, P., Zhang, Z., & Esche, S. (2018, November). *Development of Telepresence Teaching Robots With Social Capabilities*. Published.
- Zhang, Z., Zhang, S., Zhang, M., & Esche, S. (2018, November). *Immersive Educational Systems with Procedure-Oriented Combination of Real and Virtual Environments*. Published.
- Zhang, Z., Zhang, A., Zhang, M., & Esche, S. (2018, June). *Conceptual Framework for Integrating a Wireless Sensor and Control Network into a Robotics Course for Senior Students of Mechanical Engineering Technology*. Published.
- Zhang, Z., Zhang, M., Chang, Y., Aziz, E., Esche, S. K., & Chassapis, C. (2018). Collaborative virtual laboratory environments with hardware in the loop. In *Cyber-Physical Laboratories in Engineering and Science* (pp. 363–402). Springer.
- Rafibakhsh, N., Zhang, M., & Lee, H. F. (2018). *Comparison of Three Non-contact Scanners for Reverse Engineering: A Case Study for Industrial Products*. 1(1), 24–33 (10 pages).
- Zhang, M., Zhang, Z., Chang, Y., Aziz, E., & Chassapis, C. (2018). *Recent developments in game-based virtual reality educational laboratories using the Microsoft Kinect*. 13(1), 138–159.
- Zhang, M., Lotfi Yagin, N., Zhang, Z., & Esche, S. (2017, June 25). *Development of automatic reconfigurable robotic arms using vision-based control*. Published.
- Chang, Y., Aziz, E., Zhang, Z., Zhang, M., & Esche, S. (2016, October 12). *Evaluation of a video game adaptation for mechanical engineering educational laboratories*. Published.
- Zhang, Z., Zhang, M., Chang, Y., Esche, S., & Chassapis, C. (2016, June 26). *A virtual laboratory combined with biometric authentication and 3D reconstruction*. Published.
- Zhang, Z., Zhang, M., Chang, Y., Aziz, E., Esche, S., & Chassapis, C. (2016, June 26). *A virtual laboratory system with biometric authentication and remote proctoring based on facial recognition*. Published.
- Zhang, Z., Zhang, M., Chang, Y., Esche, S., & Chassapis, C. (2016). *Real-time 3D Reconstruction for Facilitating the Development of Game-based Virtual Laboratories*. 7(1), 85–99.
- Chang, Y., Aziz, E., Zhang, Z., Zhang, M., & Esche, S. (2016). *Usability evaluation of a virtual educational laboratory platform*. 7(1), 24–36.
- Zhang, M., Zhang, Z., Chang, Y., Esche, S. K., & Chassapis, C. (2015). *Kinect-based Universal Range Sensor and its Application in Educational Laboratories*. 11(2), 26–35.
- Zhang, Z., Zhang, M., Chang, Y., Esche, S. K., & Chassapis, C. (2015). A Smart Method for Developing Game-Based Virtual Laboratories. *ASME 2015 International Mechanical Engineering Congress and Exposition*, V005T05A036–V005T05A036.
- Zhang, M., Zhang, Z., Chang, Y., Esche, S. K., & Chassapis, C. (2015, June). *Simultaneous Tracking and Reconstruction (STAR) of Objects and its Application in Educational Robotics Laboratories*. Published.

- Chang, Y., Aziz, E., Zhang, Z., Zhang, M., Esche, S., & Chassapis, C. (2014). *A Platform for Mechanical Assembly Education Using the Microsoft Kinect*. V005T05A019–V005T05A019.
- Zhang, M., Zhang, Z., Esche, S. K., & Chassapis, C. (2014). *Algorithm Modification Approach to Improve the Kinect's Performance in Point Cloud Processing*. V005T05A015–V005T05A015.
- Zhang, Z., Zhang, M., Chang, Y., Esche, S. K., & Chassapis, C. (2014). *An Efficient Method for Creating Virtual Spaces for Virtual Reality*. V005T05A016–V005T05A016.
- Zhang, Z., Zhang, M., Tumkor, S., Chang, Y., Esche, S. K., & Chassapis, C. (2013). *Integration of Physical Devices into Game-based Virtual Reality*. 9(5), 25–38.
- Zhang, M., Zhang, Z., Aziz, E., Esche, S. K., & Chassapis, C. (2013). *Kinect-based universal range sensor for laboratory experiments*. V005T05A047–V005T05A047.
- Zhang, Z., Zhang, M., Chang, Y., Aziz, E., Esche, S. K., & Chassapis, C. (2013). *Real-time 3D model reconstruction and interaction using Kinect for a game-based virtual laboratory*. V005T05A053–V005T05A053.
- Zhang, M., Zhang, Z., Esche, S. K., & Chassapis, C. (2013, June). *Universal range data acquisition for educational laboratories using Microsoft Kinect*. Published.
- Tumkor, S., Zhang, M., Zhang, Z., Chang, Y., Esche, S. K., & Chassapis, C. (2012). *Integration of a real-time remote experiment into a multi-player game laboratory environment*. 181–190.

## **Presentations**

- Zhang, M., 2019 International Mechanical Engineering Conference & Exposition, "Development of Vision-based Control System for Mobile 3D Printer," American Society of Mechanical Engineering, Salt Lake City, Utah, USA. (November 11, 2019).
- Zhang, M., 2019 ASEE Annual Conference and Exposition, "Project-based Robotics Courses for the Students of Mechanical Engineering Technology," Tampa, FL, USA. (June 17, 2019).
- Zhang, M., 2018 International Mechanical Engineering Conference & Exposition, "Immersive Educational Systems with Procedure-Oriented Combination of Real and Virtual Environments," American Society of Mechanical Engineering, Pittsburgh, USA. (November 15, 2018).
- Zhang, M., 2018 ASEE Annual Conference & Exposition, "Conceptual Framework for Integrating a Wireless Sensor and Control Network into a Robotics Course for Senior Students of Mechanical Engineering Technology," American Society for Engineering Education, Salt Lake City, Utah. (June 27, 2018).
- Zhang, M., 2017 ASEE Annual Conference & Exposition, "Development of automatic reconfigurable robotic arms using vision-based control," American Society for Engineering Education, Columbus, Ohio. (June 26, 2017).
- Zhang, M., 2015 ASEE Annual Conference & Exposition, "Simultaneous Tracking and Reconstruction (STAR) of Objects and its Application in Educational Robotics Laboratories," Seattle. (June 14, 2015).
- Zhang, M., ASME International Mechanical Engineering Conference & Exposition, "Algorithm Modification Approach to Improve the Kinect's Performance in Point Cloud Processing," Montreal, Quebec, Canada. (November 14, 2014).

## **Contract, Fellowships, Grants and Sponsored Research**

- Zhang, M., "COVID 19 Assigned Research Time," Sponsored by Southern Illinois University, Edwardsville, Southern Illinois University Edwardsville, \$4,500.00. (August 16, 2021 - May 15, 2022).
- Zhang, M. (Principal), "Phase II: Support Work for Autonomous Floor-Cleaning Robot," Sponsored by Arch & Lake, LLP, Private, \$3,201.75. (January 1, 2020 - December 31, 2021).

Zhang, M. (Principal), "Support Work for Autonomous Floor-Cleaning Robot," Sponsored by Arch & Lake, LLP, Private, \$16,937.09. (April 1, 2018 - December 31, 2019).

Zhang, M. (Principal), "Phase II: Improvement of Educational Robotic Platform," Sponsored by WeEducation Group, Inc., Private, \$26,146.40. (March 28, 2018 - December 31, 2019).

Zhang, M. (Principal), "STEM Center Faculty Fellow," Sponsored by Southern Illinois University Edwardsville, Southern Illinois University Edwardsville, \$6,000.00. (July 1, 2018 - June 30, 2019).

Zhang, M., "Graduate School New Faculty Incentive Program Funds," Sponsored by Southern Illinois University Edwardsville, Southern Illinois University Edwardsville, \$2,000.00. (March 1, 2018 - 2018).

Zhang, M. (Principal), Lotfi Yagin, N. (Co-Principal), Wang, Y. (Co-Principal), Shang, Y. (Co-Principal), Weinberg, J. B. (Co-Principal), "Research Equipment & Tools Program," Sponsored by Southern Illinois University Edwardsville, Southern Illinois University Edwardsville, \$11,797.00. (March 16, 2018 - June 30, 2018).

Zhang, M. (Co-Principal), Lotfi Yagin, N. (Principal), "Development of Low-cost Educational Platforms to Promote Mechatronics among the University Community and General Public," Sponsored by Excellence in Undergraduate Education, Southern Illinois University Edwardsville, \$4,000.00. (November 1, 2017 - June 30, 2018).

Zhang, M. (Principal), "Development of an Educational Robotic Platform," Sponsored by Wailian Education Group, INC., Private, \$56,304.00. (July 5, 2017 - October 5, 2017).

Zhang, M. (Supporting), Lotfi Yagin, N. (Principal), Noble, B. L. (Supporting), Hankins, M. J. (Supporting), "Research Equipment and Tools Grant," Sponsored by Graduate School, Southern Illinois University Edwardsville, \$13,451.00. (September 1, 2017).

## **Professional Memberships**

American Society for Engineering Education. (October 25, 2016 - Present).

## **Awards and Honors**

Outstanding Teacher, Southern Illinois University Edwardsville. (February 18, 2020).

Outstanding Service, School of Engineering, Southern Illinois University Edwardsville. (February 19, 2019).

## **Media Appearances and Interviews**

zippia.com EXPERTS WEIGH IN ON CURRENT JOB MARKET TRENDS. (January 4, 2021).

Research & Creative Activities. (October 2019).

SIUE News: SIUE's Zhang Advances Development of Remote Robotic Teaching Platform as STEM Center Faculty Fellow. (January 16, 2019).

SIUE News: Rededicated SIUE Science Complex Provides State-of-the-Art Teaching and Research. (September 23, 2018).

SIUE News: SIUE Undergraduate Scholars Showcase Spotlights Outstanding Research and Creative Activities. (May 2, 2018).

SIUE News: SIUE Researchers Receive Funding to Advance Telepresence Robot. (April 16, 2018).

SIUE News: SIUE Researchers Aim to Enhance Telepresence Teaching Robots. (October 27, 2017).

## Teaching Experience

MRE 481, section 001, Design in Mech and Rob II. 2 credit hours. 21 enrolled.

ME 462, section 001, Robotic Vision. 3 credit hours. 5 enrolled.

MRE 462, section 001, Robotic Vision. 3 credit hours. 17 enrolled.

MRE 480, section 001, Design in Mech and Rob I. 2 credit hours. 21 enrolled.

MRE 481, section 001, Design in Mech and Rob II. 2 credit hours. 6 enrolled.

ME 380L, section 001, Stress Laboratory. 1 credit hours. 18 enrolled.

MRE 480, section 001, Design in Mech and Rob I. 2 credit hours. 6 enrolled.

HONS 320B, section 003, Interdisc Probs in Sci and Tech. 3 credit hours. 10 enrolled.

ME 598, section 012, Research Project. 3 credit hours. 2 enrolled.

ME 462, section 001, Robotic Vision. 3 credit hours. 5 enrolled.

MRE 462, section 001, Robotic Vision. 3 credit hours. 1 enrolled.

MRE 462, section 001, Robotic Vision. 3 credit hours. 16 enrolled.

MRE 320, section 001, Sensors and Actuators. 3 credit hours. 16 enrolled.

ME 380L, section 001, Stress Laboratory. 1 credit hours. 21 enrolled.

ME 380L, section 002, Stress Laboratory. 1 credit hours. 20 enrolled.

MRE 320, section 001, Sensors and Actuators. 3 credit hours. 17 enrolled.

ME 380L, section 001, Stress Laboratory. 1 credit hours. 22 enrolled.

FST 101, section 07E, Succeeding and Engaging at SIUE. 1 credit hours. 12 enrolled.

FST 101, section 08E, Succeeding and Engaging at SIUE. 1 credit hours. 22 enrolled.

MRE 480, section 001, Design in Mech and Rob I. 2 credit hours. 8 enrolled.

MRE 481, section 001, Design in Mech and Rob II. 2 credit hours. 8 enrolled.

HONS 320B, section 004, Interdisc Probs in Sci and Tech. 3 credit hours. 12 enrolled.

MRE 320, section 001, Sensors and Actuators. 3 credit hours. 9 enrolled.

ME 380L, section 001, Stress Laboratory. 1 credit hours. 19 enrolled.

ME 380L, section 003, Stress Laboratory. 1 credit hours. 9 enrolled.

ME 592, section 001, Topics in Mech Engineering. 3 credit hours. 8 enrolled.

MRE 492, section 001, Topics in MRE. 3 credit hours. 12 enrolled.

MRE 320, section 001, Sensors and Actuators. 15 enrolled.

ME 380L, section 001, Stress Laboratory. 1 credit hours. 18 enrolled.

MRE 480, section 001, Design in Mech and Rob I. 2 credit hours. 5 enrolled.

MRE 481, section 001, Design in Mech and Rob II. 2 credit hours. 5 enrolled.

MRE 481, section 001, Design in Mech and Rob II. 2 credit hours. 21 enrolled.

MRE 358, section 001, Introduction to Mechatronics. 3 credit hours. 17 enrolled.

ME 380L, section 001, Stress Laboratory. 1 credit hours. 20 enrolled.

ME 380L, section 002, Stress Laboratory. 1 credit hours. 13 enrolled.

ME 380L, section 003, Stress Laboratory. 1 credit hours. 15 enrolled.

ME 492, section 001, Topics in Mech Engineering. 3 credit hours. 1 enrolled.

ME 592, section 001, Topics in Mech Engineering. 3 credit hours. 5 enrolled.

MRE 492, section 001, Topics in MRE. 3 credit hours. 8 enrolled.

MRE 480, section 001, Design in Mech and Rob I. 2 credit hours. 21 enrolled.

ME 380L, section 001, Stress Laboratory. 1 credit hours. 15 enrolled.

MRE 358, section 001, Introduction to Mechatronics. 3 credit hours. 11 enrolled.

MRE 481, section 001, Design in Mech and Rob II. 2 credit hours. 20 enrolled.

ME 380L, section 001, Stress Laboratory. 1 credit hours. 20 enrolled.

ME 380L, section 002, Stress Laboratory. 1 credit hours. 19 enrolled.

ME 380L, section 003, Stress Laboratory. 1 credit hours. 20 enrolled.

ME 380L, section 004, Stress Laboratory. 1 credit hours. 12 enrolled.

ME 492, section 001, Topics in Mech Engineering. 3 credit hours. 2 enrolled.

ME 592, section 002, Topics in Mech Engineering. 4 enrolled.

MRE 492, section 001, Topics in MRE. 3 credit hours. 11 enrolled.

MRE 480, section 001, Design in Mech and Rob I. 2 credit hours. 20 enrolled.

ME 380L, section 001, Stress Laboratory. 1 credit hours. 10 enrolled.

FST 101, section 04E, Succeeding and Engaging at SIUE. 1 credit hours. 20 enrolled.

FST 101, section 05E, Succeeding and Engaging at SIUE. 1 credit hours. 19 enrolled.

FST 101, section 06E, Succeeding and Engaging at SIUE. 1 credit hours. 19 enrolled.

ME 452, section 001, Vibrations. 3 credit hours. 7 enrolled.

MRE 481, section 001, Design in Mech and Rob II. 2 credit hours. 12 enrolled.

MRE 320, section 001, Sensors and Actuators. 3 credit hours. 20 enrolled.

ME 380L, section 002, Stress Laboratory. 1 credit hours. 20 enrolled.

MRE 480, section 001, Design in Mech and Rob I. 2 credit hours. 12 enrolled.

ME 599, section 011, Thesis. 1 enrolled.

ME 452, section 001, Vibrations. 3 credit hours. 2 enrolled.

ME 452, section 001, Vibrations. 3 credit hours. 4 enrolled.

MRE 481, section 002, Design in Mech and Rob II. 2 credit hours. 4 enrolled.

MRE 320, section 001, Sensors and Actuators. 3 credit hours. 12 enrolled.

MRE 480, section 001, Design in Mech and Rob I. 2 credit hours. 4 enrolled.

IE 106, section FR1, Engineering Problem Solving. 3 credit hours. 34 enrolled.

ME 484, section 001, Mechanical Engr Design II. 2 credit hours. 26 enrolled.

ME 599, section 011, Thesis. 1 enrolled.

ME 452, section 001, Vibrations. 3 credit hours. 3 enrolled.

ME 452, section 001, Vibrations. 3 credit hours. 15 enrolled.

ME 482, section 001, Mechanical Engr Design I. 2 credit hours. 26 enrolled.

MRE 320, section 001, Sensors and Actuators. 3 credit hours. 6 enrolled.

ME 380L, section 002, Stress Laboratory. 1 credit hours. 24 enrolled.

ME 380L, section 004, Stress Laboratory. 1 credit hours. 20 enrolled.

ME 599, section 011, Thesis. 1 enrolled.

IE 106, section FR1, Engineering Problem Solving. 3 credit hours. 35 enrolled.

ME 354, section 001, Numerical Simulation. 1 credit hours. 27 enrolled.

ME 354, section 002, Numerical Simulation. 1 credit hours. 36 enrolled.

ME 452, section 001, Vibrations. 3 credit hours. 10 enrolled.

ME 262, section 001, Dynamics. 3 credit hours. 52 enrolled.

MRE 320, section 001, Sensors and Actuators. 3 credit hours. 1 enrolled.

ME 380L, section 003, Stress Laboratory. 1 credit hours. 27 enrolled.

ME 262, section 001, Dynamics. 3 credit hours. 41 enrolled.

ME 262, section 002, Dynamics. 3 credit hours. 33 enrolled.

## **Directed Student Learning**

Master's Thesis Committee Member, "Theory and Algorithms for Simulating Multibody Dynamic Systems using Modern C++," Mech and Mechatronics Eng. (May 2, 2024).

Advised: Shian Qi

Master's Project Committee Chair, "3D vision based control for arm type robot arm grasping," Mech and Mechatronics Eng. (May 1, 2024).

Advised: Ziyu Zhan

Master's Project Committee Member, "Finite Element Analysis of an Automobile Crankshaft Assembly," Mech and Mechatronics Eng. (December 2023).

Advised: Md Ariful Azam Arif

Master's Project Committee Member, "Computational Simulation of Dynamic Equation Representing a Multibody System Using Algebraic Differential Equation Solver," Mech and Mechatronics Eng. (May 2023).

Advised: Femi Ayoade

Master's Project Committee Member, "Development of Robotic Platforms for Specialty Crops," Mech and Mechatronics Eng. (April 26, 2023).

Advised: Ethan Blomberg

Master's Thesis Committee Member, "Trajectory Control Design for a Custom-built Agricultural Robot Considering Slippage Effects," Mech and Mechatronics Eng. (May 3, 2022).

Advised: Panporn Orkweha

Master's Project Committee Member, "Autonomous Security Robot using Jetson Nano," Mech and Mechatronics Eng. (April 27, 2022).

Advised: Krishna Vamsee Duggaraju

Master's Project Committee Chair, "Raspberry Pi Companion Computer and Data Collection System for Space Educational Kits," Mech and Mechatronics Eng. (2021 - April 27, 2022).

Advised: Brandon Hickey

Master's Project Committee Member, "Stress Analysis on a C-Shape Bumper," Mech and Mechatronics Eng. (March 2022).

Advised: Tharun Reddy Bobbala

Master's Thesis Committee Member, "Building Energy Analysis for a Pilot Building Simulated in Different U.S. and Global Locations," Mech and Mechatronics Eng. (August 2021).  
Advised: Mohammed Abdul Raheem Jafery

Master's Thesis Committee Member, "Trajectory Control of Omnidirectional Robots Considering Actuator Dynamics," Mech and Mechatronics Eng. (August 2020).  
Advised: Huan Phan-Van

Master's Thesis Committee Member, "Surface Functionalization of MEMS Biochemical Sensors for The Detection of Cells in Aqueous Suspensions and Development of Testing Procedures for the Detection of Chemical Molecules Using Electrochemical Impedance Spectroscopy," Mech and Mechatronics Eng. (August 2020).  
Advised: Md Ebrahim Khalil Bhuiyan

Master's Thesis Committee Chair, "The Ideal Telepresence Robot for Education: Configuration and Tools." (January 9, 2017 - January 17, 2020).  
Advised: Sai Kiran

URCA Mentor, Computer Science. (August 2019 - December 2019).  
Advised: Derek Lopez, Ben Portz, Cole Mckee, Jami Howell, Blaise Willoughby, Justin perez

Master's Thesis Committee Chair, "Development of Telepresence Robot for Education," Mech and Mechatronics Eng. (January 2018 - November 4, 2019).  
Advised: Pengji Duan

Master's Project Committee Chair, "Application Of MonoSLAM Feedback Control System To Mobile 3D Printer," Mech and Mechatronics Eng. (August 2018 - June 2019).  
Advised: Yutong Liu

URCA Mentor, Computer Science. (January 2019 - May 2019).  
Advised: Derek Lopez, Ben Portz, Cole Mckee, Jami Howell, Blaise Willoughby

Senior Assignment Supervision, Mech and Mechatronics Eng. (August 2018 - May 2019).  
Advised: Mattew Mancewizc, Andrew Stricler, Nathaniel Day, Nicolas Coglianese

Master's Project Committee Member, "Simulation study on crash performance of a vehicle front rail using Finite Element Analysis (FEA)," Mech and Mechatronics Eng. (February 2019).  
Advised: Naresh Reddy Kusa

Master's Project Committee Member, "Investigating Limitations of Bridgman's Formula for Calculating Stress Triaxiality," Mech and Mechatronics Eng. (February 2019).  
Advised: Vikas Varma Alluri

Master's Project Committee Member, "Finite Element Analysis on a Car Bumper," Mech and Mechatronics Eng. (January 2019).  
Advised: Mohith Kondakkagari

Master's Project Committee Member, "Electrochemical Modeling of Lithium-Ion Batteries," Mech and Mechatronics Eng. (December 2018).  
Advised: Michael Miller

Master's Project Committee Member, "Temperature Compensation of Capacitive Pressure Sensors for Harsh Environment Applications," Mech and Mechatronics Eng. (December 2018).  
Advised: Rahul Suthar

URCA Mentor, Mech and Mechatronics Eng. (August 2018 - December 2018).  
Advised: Jonathan Cheatham, Christopher Couch, Jason Couch

Directed Individual/Independent Study, "Reflection of Sound in 3D Modeling," Mech and Mechatronics Eng. (March 2018 - December 2018).  
Advised: Colton McClintock

Master's Thesis Committee Member, "Development of a Control-Oriented Model for Autonomous Mobile Robots," Mech and Mechatronics Eng. (November 2018).  
Advised: Hunter Meadows

Master's Thesis Committee Member, "Design Study of a Piezoelectric Curved THUNDER via Finite Element Modeling," Mech and Mechatronics Eng. (June 2018).  
Advised: Md Nahid Hasan

Master's Thesis Committee Member, "Energy Harvesting of Lead-free Piezoelectric Ceramics Bimorphs," Mech and Mechatronics Eng. (June 2018).  
Advised: Turki Mohammed Alghamdi

URCA Mentor. (January 2018 - May 2018).  
Advised: Husam Diab, Alexander Dinan, Alexander Hunsaker, Michael McCann

URCA Mentor, "Construction of Robotic Prosthetic Hand through Upper and Lower Arm Muscle Pattern Recognition," Mech and Mechatronics Eng. (August 15, 2017 - May 1, 2018).  
Advised: Logan Sherrill

Master's Thesis Committee Member, "Design of PID Controller Based on the Stabilizing Set," Mech and Mechatronics Eng. (January 2018).  
Advised: Xingzi Yang

URCA Mentor. (September 2017 - December 2017).  
Advised: Alex Dinan, Husam Diab, Shawn Gilles, Michael McCann

URCA Mentor, Mech and Mechatronics Eng. (January 9, 2017 - May 15, 2017).  
Advised: Bryan Kier, Alexander Dinan, Logan Sherrill, Husam Diab

## **Non-Credit Instruction Taught**

SIUE Engineering Camp, Southern Illinois University Edwardsville, 52 participants. (June 3, 2015).

## **University Service**

Task Force Member, Startup Surge SIUE 2024. (October 2024 - November 2024).

Faculty Interviewer, Meridian Scholarship Interview. (2023).

Faculty Interviewer, Meridian Scholarship Interview. (2020).

Faculty Mentor, Bridging Universal Inclusion & Leadership Development (BUILD). (August 2018 - 2020).

Committee Chair, Chemistry Undergraduate Program Review. (September 2018 - May 2019).

Committee Member, Graduate Council-Programs Committee. (August 2018 - May 2019).

Faculty Interviewer, Meridian Scholarship Interview. (2018).

Faculty Mentor, Faculty & Staff Mentoring Students with Disabilities. (February 2018 - May 2018).

## **Professional Service**

Reviewer, Journal Article, Journal of Visualized Experiments. (March 11, 2021 - Present).

Reviewer, Journal Article, Electronics. (March 2021 - Present).

Reviewer, Journal Article, Journal of Visual Communication and Image Representation. (October 2020 - Present).

Reviewer, Journal Article, Applied Sciences. (July 2020 - Present).

Reviewer, Journal Article, International Journal of Mechanical Engineering Education. (June 2020 - Present).

Reviewer, Journal Article, Sensors. (June 2020 - Present).

Reviewer, Journal Article, Robotics and Autonomous Systems. (April 2020 - Present).

Reviewer, Journal Article, IEEE Access. (February 2020 - Present).

Reviewer, Journal Article, International Journal of Emerging Technologies in Learning (IJET). (February 1, 2019 - Present).

Reviewer, Journal Article, Virtual Reality journal. (March 23, 2018 - Present).

Reviewer, Journal Article, Computer Applications in Engineering Education. (August 29, 2017 - Present).

Reviewer, Journal Article, Journal: Learning and Instruction. (August 24, 2017 - Present).

Reviewer, Conference Paper, IEEE Control Systems Society Conference. (September 28, 2016 - Present).

Reviewer, Conference Paper, International Conference on University Learning and Teaching. (August 1, 2016 - Present).

Reviewer, Journal Article, IEEE Transactions on Learning Technologies. (May 5, 2016 - Present).

Reviewer, Conference Paper, IEEE Frontiers in Education Conference. (April 12, 2016 - Present).

Reviewer, Conference Paper, ASEE Annual Conference & Exposition. (September 1, 2013 - Present).

Reviewer, Conference Paper, ASME's International Mechanical Engineering Congress and Exposition. (September 1, 2013 - Present).

Session Chair, ASME International Mechanical Engineering Congress & Exposition. (August 2019 - November 2022).

Program Organizer, ASME International Mechanical Engineering Congress & Exposition. (November 2018 - November 2022).

Reviewer, Grant Proposal, National Science Foundation. (April 1, 2022).

Reviewer, Grant Proposal, National Science Foundation. (January 5, 2022).

Session Moderator, 2018 ASEE Annual Conference & Exposition, Salt Lake City, Utah. (June 27, 2018 - June 2019).

Reviewer, Grant Proposal, National Science Foundation. (November 2018 - March 2019).

Reviewer, Grant Proposal, National Science Foundation, Alexandria, Virginia. (July 2018 - October 2018).

Reviewer, Grant Proposal, National Science Foundation, Alexandria, Virginia. (March 7, 2018 - April 30, 2018).

## **Public Service**

Judge, FIRST Tech Challenge, IL. (February 1, 2020 - Present).

Participant, Graduate School Open House, Edwardsville, Illinois. (2019 - Present).

Mentor, School of Engineering Mentor Mixer, Edwardsville, Illinois. (October 16, 2017 - Present).

Participant, Preview SIUE, Edwardsville, Illinois. (2016 - Present).

Participant, SIUE School of Engineering Explore Day, Edwardsville, Illinois. (2016 - Present).

Faculty Presenter, Saturday Scholar Open House. (February 17, 2024).

Judge, IL FTC All-State Championship, IL. (March 2021).

Member, University Housing Faculty Fellows, Edwardsville, Illinois. (August 2018 - August 2020).

Faculty Lead, Pi Tau Sigma, FE review series. (March 2020).

Judge, Science and Engineering Research Challenge. (March 2020).

Faculty Guide, Loren Cook Company Tour, Springfield, MO. (April 4, 2019 - April 5, 2019).

Judge, Science & Engineering Research Challenge, Edwardsville, IL. (March 22, 2019).

Presenter, Introduce a Girl to Engineering Day, Edwardsville, Illinois. (February 16, 2019).

Debate Judges, SIUE Energy Symposium, Edwardsville, Illinois. (November 27, 2018).