

# Israa Azzam, Ph.D.

✉ azzam@msoe.edu

☎ (765) 701-9601

📍 Milwaukee, WI 53202, U.S

🌐 Israa-Azzam-034290197

🌐 Personal Webpage

## Education

- 📖 **Ph.D in Technology, Purdue University, West Lafayette, U.S.** *August 2025*  
**Thesis Title:** Transforming Teleoperation through Immersive Digital Twin: XR-Enabled Teleoperation Platform for Industrial Operations.  
**Thesis Advisor:** Professor Farid Breidi  
*Work Funded by the National Science Foundation (NSF).*  
**GPA:** 4/4
- 📖 **M.E. in Mechanical Engineering, American University of Beirut, Lebanon** *September 2021*  
**Thesis Title:** Semi-Definite Programming (SDP) Approach for Robust State PD Control Design for Descriptor Systems.  
**Thesis Advisor:** Professor Dany Abou Jaoude  
*Work Supported by the University Research Board (URB) at the American University of Beirut.*  
**GPA:** 4/4
- 📖 **B.Sc. in Mechanical Engineering, Beirut Arab University, Lebanon** *January 2019*  
**Project Title:** Design and Implementation of a Smart Industrial Handling Unit (Semi-Automated Forklift).  
*Project Funded by the Industrial Research Achievement in Lebanon (IRALEB).*  
**GPA:** 3.83/4

## Professional Appointment

- 🏢 **Milwaukee School of Engineering (MSOE), Milwaukee, WI** *August 2025-Ongoing*  
Assistant Professor at the Department of Mechanical Engineering

## Awards, Honors, and Achievements

- 🏆 **Best Paper Award: IISE Annual Conference** *2025*  
Awarded by the IISE for the paper titled "*Investigating the Impact of Stress on Shared Mental Models and Team Performance in Collaborative Mixed Reality Environments*".
- 🏆 **National Science Foundation (NSF) Travel Support Award** *2025*  
Awarded by NSF to attend the 2025 ASEE Conference.
- 🏆 **Best Poster Award: First Place** *2024*  
Awarded by Industrial Engineering Operation Management (IEOM) World Congress for the research titled "*Transforming Teleoperations through Immersive Digital Twins: A Collaborative Extended Reality (XR) Environment for Remote Operations*".
- 🏆 **National Science Foundation (NSF) Travel Support Award** *2024*  
Awarded by NSF to attend the IEOM World Congress.
- 🏆 **Best Paper Award: ASEE Manufacturing Division** *2024*  
Awarded by ASEE Manufacturing Division for the paper titled "*Teaching Manufacturing Assembly Processes Using Immersive Mixed Reality*".
- 🏆 **Best Paper Award: ASEE Industrial Engineering Division** *2024*  
Awarded by ASEE Industrial Engineering Division for the paper titled "*Mixed Reality as a Teaching Tool for Improving Spatial Visualization in Engineering Students*".
- 🏆 **Bravo Award: Employee Recognition for Departmental Achievements** *2024*  
Awarded by Purdue University Polytechnic Institute in 2024 for outstanding contributions.
- 🏆 **Best Student Poster Presentation Award: First Place** *2023*  
Awarded by the 2023 Polytechnic Research Impact Area Student Poster Symposium: Realize Digital Enterprise (RDE) for the research titled "*Mixed Reality Technology: A Design Validation Tool for Engineering Applications*".
- 🏆 **Best Presentation in Onsite Session** *2023*  
Awarded by the 2023 9<sup>th</sup> International Conference on Computer Technology Applications in Vienna, Austria for the presentation titled "*An Investigation of Learning Process with Mixed Reality Technology in STEM Education: The case for a computer-based educational*".

## Graduate Research Experience

### ✍ Graduate Research Assistant

2022–2025

Polytechnic Institute, Purdue University, West Lafayette, IN, U.S.

**Advisor:** Professor Farid Breidi

**Collaborators:** Professors Jose Garcia, Gaurav Nanda, and Faisal Aqlan

#### ▶ NSF RIEF: Developing Spatial Visualization and Understanding of Complex Systems via Interactive MR Modules

- Designed, developed, and implemented interactive Mixed Reality (MR) Modules to enhance spatial visualization skills and learning of complex engineering concepts within engineering technology courses.
- Incorporated MR modules into engineering technology courses (MET: 230 and MET: 432)
- Conducted research studies and collected and analyzed data to evaluate the effectiveness of MR modules in enhancing learning outcomes.
- Authored four manuscripts as the first author, two of which received **Best Paper Awards**.
- **Software Stack:** 3ds Max, SolidWorks, Blender, Unity, MRTK2

#### ▶ Internal Engineering Education Project: Improving Engineering Instruction through XR Technologies

- Collaborated with faculty members and industry mentors.
- Designed, developed, and incorporated XR applications in engineering technology courses.
- Conducted natural language processing (NLP) and statistical descriptive data analysis.
- Authored two journals and five conference papers as the first author.
- **Software Stack:** 3ds Max, SolidWorks, Unity, MRTK2, OVR, Text Analysis Toolbox on Matlab.

### ✍ Research Scholar (Visiting Scholar)

2021–2022

Polytechnic Institute, Purdue University, West Lafayette, IN, U.S.

**Advisor:** Professor Farid Breidi

**Collaborators:** Professors Jose Garcia and Jiansong Zhang

#### ▶ Hydraulic End-Effector Design for Construction Robotics and Automation

- Developed conceptual designs for a hydraulic gripper end-effector.
- Designed, modeled, and simulated the hydraulic gripper end-effector.
- Authored one conference proceeding as the first author.
- **Software Stack:** 3ds Max, Solidworks, MATLAB/ Simulink & Simscape-SimMechanics.

#### ▶ Improving Hydraulic Hybrid Systems Performance through Digital Hydraulics

- Modeled, simulated, and controlled a series hydraulic hybrid transmission that aims to improve fluid power systems' performance and efficiency through the incorporation of digital hydraulics.
- Integrated experimental data into a Matlab/Simscape simulation model.
- Improved the total efficiency of the series hydraulic hybrid drivetrain by up to 25%.
- Authored one journal paper as the first author.
- **Software Stack:** MATLAB/ Simulink & Simscape-SimMechanics.

#### ▶ Fluid Power Club in the National Fluid Power Vehicle Challenge

- Assisted the Fluid Power Club in the design of a hydraulically actuated bike by conducting mechanical and hydraulic simulation models for the hydraulic bike on Matlab/simscape Multi-body.
- Participated in the National Fluid Power Vehicle Challenge, hosted by the National Fluid Power Association (NFPA).
- Traveled with the Fluid Power Club at a National level in Colorado.
- Co-authored a conference proceeding paper.

## Graduate Research Experience (continued)

### Graduate Research Assistant 2019–2021

Mechanical Engineering Department, American University of Beirut, Lebanon

**Advisor:** Professor Dany Abou Joaudy

**Co-Advisor:** Professor Elie Shammas

#### ► Developing Numerical Methods for Designing Control Laws for Descriptor Systems

- Proposed new methods for synthesizing state-space controllers to tackle the stabilization problem of linear time-invariant (LTI) descriptor systems, with a particular focus on leveraging convex optimization techniques framed within linear matrix inequalities (LMIs).
- Designed, implemented, and validated state-space PD, D, PID, and LQR-LQG controllers utilizing the proposed methods, tackling the stability problem of mechanical and electrical descriptor systems.
- **Software Stack:** C++, MATLAB-Yalmip, MATLAB-Simscape Multibody.

## Graduate Teaching Experience

### Graduate Teaching Assistant 2022–2025

Polytechnic Institute, Purdue University, West Lafayette, IN, U.S.

**Course Instructor:** Professor Farid Breidi

#### ► MET: 230 Fluid Power (Fall 2022 & Spring 2023)

- Re-designed all the labs.
- Taught and graded the re-designed lab modules for 100 students registered in seven sections.

#### ► MET: 432 Hydraulic Motion Control Systems (Spring 2024)

- Taught two labs per week for 35 students registered in the course.
- Graded the lab assignment, reports, and final project for the 35 student.
- Designed a new laboratory session focusing on pneumatic gripper control and operation. This involved developing the gripper model, designing the pneumatic circuit, creating a simulation model, and 3D printing the gripper kits.

### Visiting Teaching Assisting 2021–2022

Polytechnic Institute, Purdue University, West Lafayette, IN, U.S.

**Course Instructor:** Professor Farid Breidi

#### ► The labs of the MET: 230 Fluid Power

- Supported the collaborative development of new CFD simulation labs in partnership with Simerics Mp+ company.
- Assisted the teaching assistant in teaching and grading seven laboratory sessions per week for over 90 students registered in the course.

#### ► The labs of the MET: 432 Hydraulic Motion Control Systems

- Taught and graded the entire lab assignments along with the projects for 30 students registered in the course.
- Designed the final lab project by developing, modeling, and simulating a Simulink-Simscape model for a Hydraulic Actuator with Analog Position Controller.

## Graduate Teaching Experience (continued)

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### Graduate Teaching Assistant

2019–2021

Mechanical Engineering Department, American University of Beirut, Lebanon

**Course Instructors:** Professor Naseem Daher and Eng. Jihad Kasaman

#### ▶ Graduate level course MECH: 653 Control System Analysis and Design

- Graded weekly assignments, laboratory reports, quizzes, and project submissions.
- Designed tutorial sessions and extra problems.
- Conducted weekly problem-solving sessions and tutorials, and supervised exam administration.

#### ▶ Undergraduate level course MECH: 436 Control Systems

- Graded weekly assignments, laboratory reports, quizzes, and project submissions.
- Oversaw the evaluation process for the 100 students enrolled in the course.

#### ▶ Undergraduate level course MECH: 230 Dynamics

- Graded weekly assignments and quizzes for around 150 registered in the course.
- Proctored exams and graded mid and final exams.

## Graduate Grant Writing Experience

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### Federal Grants National Science Foundation (NSF)

#### 🔍 Research Initiation in Engineering Formation (RIEF) Program

*Grant Awarded in Full*

- **Project Title:** Developing Spatial Visualization and Understanding of Complex Systems via Interactive Mixed Reality Modules.
- **Principle Investigator:** Professor Farid Breidi
- **Co-Principle Investigator:** Professor Paul Asunda
- **Award Number:** 2204919
- **Contributing Tasks:**
  - Wrote significant sections of the proposal (Project Rationale/Vision, Background, and Research plan) and developed figures and diagrams for the proposal document.
  - Assisted with addressing the reviewers' comments and concerns regarding the technical aspect of the work and the experimental design.
  - Co-led the technical planning and implementation aspects of the project.
- **Grant Amount:** \$224, 996

#### 🔍 Ideas Lab

*Grant Awarded in Full*

- **Project Title:** PEL Engineering Playground: Intelligent Augmented Reality for Personalized Learning Informed by Environmental Identity Development
- **Principle Investigator:** Professor Farid Breidi
- **Award Number:** 2431980
- **Contributing Tasks:** Contributed to the literature review, background research, and the development of figures and diagrams for the proposal document.
- **Grant Amount:** \$300, 000

#### 🔍 EHR Core Research

*Not Awarded Grant*

- **Project Title:** Transforming STEM Education: Integrating Emerging Technologies into Middle and High School Classrooms through Purdue's RET Site
- **Principle Investigator:** Professor Farid Breidi
- **Contributing Tasks:** Contributed to the writing of the proposal (Project Vision, Background, and Study Framework) and developed figures and diagrams for the proposal document.
- **Grant Amount:** \$499, 448

### Internal Grants

#### 🔍 Course-based Educational Innovations at Scale Purdue Innovation Hub

*Not Awarded Grant*

- **Project Title:** Democratizing the use of Digital Reality Experiences in the classroom
- **Principle Investigator:** Professor Farid Breidi
- **Co-Principle Investigator:** Professor Garcia Bravo
- **Contributing Tasks:** Contributed to the writing of the proposal (Introduction & Background and Study Framework) and developed diagrams for the proposal document.
- **Grant Amount:** \$40, 000

## Publications

### Journal Articles

- 1 K. Bello, I. **Azzam**, F. Aqlan, and F. Breidi, "Investigating the impact of stress on shared mental models and team performance in collaborative mixed reality environments," *IISE Transactions*, **Under second review; expected publication 2026. Selected as Best Tracker Paper Finalist (HF/E Track), 2025 IISE Annual Conference.**
- 2 I. **Azzam**, K. Bello, F. E. Breidi, and F. Aqlan, "Analysis of user experience in extended reality: A comparative study of vr and mr for manufacturing training," *Manufacturing Letters*, vol. 46, pp. 77–82, 2025, ISSN: 2213-8463. [DOI: https://doi.org/10.1016/j.mfglet.2025.10.003](https://doi.org/10.1016/j.mfglet.2025.10.003).
- 3 I. **Azzam**, K. Bello, F. E. Breidi, and F. Aqlan, "Collaborative problem-solving in mixed reality manufacturing environments," *Manufacturing Letters*, vol. 46, pp. 118–122, 2025, ISSN: 2213-8463. [DOI: https://doi.org/10.1016/j.mfglet.2025.10.018](https://doi.org/10.1016/j.mfglet.2025.10.018).
- 4 H. M. A. Mageed, I. **Azzam**, and F. Breidi, "State of electrical metrology and possible advancements utilizing extended reality," *MAPAN*, pp. 1–13, 2025. [DOI: 10.1007/s12647-024-00795-6](https://doi.org/10.1007/s12647-024-00795-6).
- 5 I. **Azzam**, S. Das, G. Nanda, J. Garcia-Bravo, and F. Breidi, "Investigating Safety Awareness in Assembly Operations via Mixed Reality Technology," *IISE Transactions on Occupational Ergonomics and Human Factors*, pp. 1–17, 2024. [DOI: 10.1080/24725838.2024.2431112](https://doi.org/10.1080/24725838.2024.2431112).
- 6 I. **Azzam**, K. El Breidi, F. Breidi, and C. Mousas, "Virtual reality in fluid power education: Impact on students' perceived learning experience and engagement," *Education Sciences*, vol. 14, no. 7, 2024, ISSN: 2227-7102. [DOI: 10.3390/educsci14070764](https://doi.org/10.3390/educsci14070764).
- 7 I. **Azzam**, J. Hwang, F. Breidi, J. Lumkes, and T. Salem, "Automated method for selecting optimal digital pump operating strategy," *Expert Systems with Applications*, vol. 232, p. 120 509, Dec. 2023, ISSN: 0957-4174. [DOI: 10.1016/J.ESWA.2023.120509](https://doi.org/10.1016/J.ESWA.2023.120509).
- 8 I. **Azzam**, K. Pate, F. Breidi, M. Choi, Y. Jiang, and C. Mousas, "Mixed reality: A tool for investigating the complex design and mechanisms of a mechanically actuated digital pump," *Actuators*, vol. 12, no. 11, p. 419, 2023. [DOI: 10.3390/act12110419](https://doi.org/10.3390/act12110419).
- 9 K. Pate, I. **Azzam**, F. Breidi, J. R. Marschand, and J. H. Lumkes, "Digitalization of radial piston pumps through internal mechanically actuated designs," *Actuators*, vol. 12, no. 11, 2023, ISSN: 2076-0825. [DOI: 10.3390/act12110425](https://doi.org/10.3390/act12110425).
- 10 I. **Azzam**, K. Pate, J. Garcia-Bravo, and F. Breidi, "Energy Savings in Hydraulic Hybrid Transmissions through Digital Hydraulics Technology," *Energies*, vol. 15, no. 4, p. 1348, Feb. 2022, ISSN: 1996-1073. [DOI: 10.3390/EN15041348](https://doi.org/10.3390/EN15041348).

### Conference Proceedings

- 1 I. **Azzam**, K. Bello, F. Breidi, and F. Aqlan, "Analysis of User Experience in Digital Reality: A Comparative Study of VR and MR for Manufacturing Training," in *The 2025 ASEE Annual Conference and Exposition*, Montreal, Canada, 2025. [URL: https://peer.asee.org/55435](https://peer.asee.org/55435).
- 2 I. **Azzam**, K. Bello, F. Breidi, and F. Aqlan, "Collaborative Problem-Solving in Mixed Reality Environments for Manufacturing Assembly Tasks," in *The 2025 ASEE Annual Conference and Exposition*, Montreal, Canada, 2025. [URL: https://peer.asee.org/56109](https://peer.asee.org/56109).
- 3 I. **Azzam**, F. Breidi, and F. Aqlan, "From Single-User to Multi-User Mixed Reality: How Collaborative MR Enhances Teamwork and Problem-Solving in STEM Education," in *The 2025 ASEE Annual Conference and Exposition*, Montreal, Canada, 2025. [URL: https://peer.asee.org/55744](https://peer.asee.org/55744).
- 4 I. **Azzam**, F. Breidi, and F. Aqlan, "Teaching Manufacturing Assembly Processes Using Immersive Mixed Reality," in *The 2024 ASEE Annual Conference and Exposition*, Portland, Oregon, 2024. [URL: https://peer.asee.org/48063](https://peer.asee.org/48063).

- 5 I. **Azzam**, F. Breidi, F. Aqlan, J. Garcia-Bravo, and P. Asunda, "Mixed Reality as a Teaching Tool for Improving Spatial Visualization in Engineering Students," in *The 2024 ASEE Annual Conference and Exposition*, Portland, Oregon, 2024.  URL: <https://peer.asee.org/47781>.
- 6 H. Jabbour, I. **Azzam**, J. Garcia-Bravo, and F. Breidi, "Development of design, control, and data acquisition modules for fluid power education," in *The 2024 ASEE Annual Conference and Exposition*, Portland, Oregon, 2024.  URL: <https://peer.asee.org/47182>.
- 7 K. Zaidan, I. **Azzam**, D. A. Jaoude, and E. Shammass, "Design of robust pd state feedback controllers for descriptor systems," in *The 2024 European Control Conference (ECC)*, 2024, pp. 3854–3859.  DOI: 10.23919/ECC64448.2024.10590920.
- 8 I. **Azzam**, F. Breidi, M. Akedre, and C. Mousas, "Design Validation of a Mechanically Actuated Digital Pump Using Mixed Reality Technology," in *The 18th Scandinavian International Conference on Fluid Power (SICFP23)*, Tampere, Finland, 2023.
- 9 I. **Azzam**, K. Pate, and F. Breidi, "Mixed reality technology: A virtual training tool in fluid power engineering," in *The 2023 ASME/BATH Symposium on Fluid Power and Motion Control*, Sarasota, Florida, 2023.  DOI: 10.1115/FPMC2023-111715.
- 10 I. **Azzam**, P. Soudah, and F. Breidi, "Virtual Reality: A Learning Tool for Promoting Learners' Engagement in Engineering Technology," in *The 2023 ASEE Annual Conference and Exposition*, Baltimore, Maryland, 2023.  URL: <https://peer.asee.org/44605>.
- 11 Y. Jiang, M. Akdere, M. s. Choi, I. **Azzam**, F. Breidi, and C. Mousas, "An Investigation of Learning Process with Mixed Reality Technology in STEM Education: The Case for a computer-based educational Technology," in *9th International Conference on Computer Technology Applications (ICCTA 2023)*, Vienna, Austria, 2023.
- 12 K. Pate, I. **Azzam**, F. Breidi, J. R. Marschand, and J. Lumkes, "Digital Radial Piston Pump/Motor Designs using Variable Geometry Camshafts," in *The Scandinavian International Conference on Fluid Power (SICFP23)*, Tampere, Finland, 2023.
- 13 I. **Azzam**, F. Breidi, S. Dhar, D. Maiti, J. G. Bravo, and P. Asunda, "Gerotor Pump Simulation Modules for Enhancing Fluid Power Education," in *Proceedings of the BATH/ASME 2022 Symposium on Fluid Power and Motion Control (FPMC2022)*, Bath, UK, 2022.  URL: <https://asmedigitalcollection.asme.org/FPST/proceedings-abstract/FPMC2022/1150217>.
- 14 I. **Azzam**, F. E. Breidi, and J. Zhang, "Hydraulic Gripper Designs for Enhancing Construction Robotics and Automation," in *2022 Polytechnic Summit*, Hochschule Darmstadt, Germany, 2022.  URL: <https://arrow.tudublin.ie/cgi/viewcontent.cgi?article=1001&context=eutpresscon>.
- 15 I. **Azzam**, K. Pate, F. Breidi, and J. Garcia, "Modular Hydrostatic Vehicle used for Engineering Technology," in *The 2022 ASEE Annual Conference and Exposition*, Minneapolis, Minnesota, 2022.  URL: <https://peer.asee.org/modular-hydrostatic-vehicle-used-for-engineering-technology>.
- 16 K. Pate, I. **Azzam**, J. Lumkes, and F. Breidi, "Comparison of Variable Cam Profiles in Mechanically Actuated Digital Fluid Power Systems," in *The 13th International Fluid Power Conference. IFK March 21-23, 2022, Aachen, Germany*, 2022.

## Presentations and Poster Sessions

### Extended Reality-Enabled Teleoperation Platform for Industrial Robotic Operations

 4/11/2025

 School of Engineering Technology (SOET) Research Day, Purdue University, IN, U.S. [Poster]

## Presentations and Poster Sessions (continued)

-  **Transforming Teleoperations through Immersive Digital Twins: A Collaborative Extended Reality (XR) Environment for Remote Operations**  
 10/09/2024 – 10/11/2024  
 Industrial Engineering and Operations Management (IEOM) World Congress, Detroit, Michigan, U.S. [Poster]
-  **Developing Spatial Visualization and Understanding of Complex Systems via Interactive Mixed Reality Modules**  
 09/11/2024 – 09/12/2024  
 Meeting of the 2024 NSF EEC Grantees Conference, Virginia, Washington, DC, U.S. [Poster]
-  **Synchronized Digital Reality (DR) Remote Environments for Seamless Control of Fluid Power Manipulators**  
 09/03/2024 – 09/05/2024  
 The 2024 International Maha Fluid Power Conference, Purdue University, West Lafayette, IN, U.S. [Invited Speaker]
-  **On the Development of Spatial Visual Abilities among STEM Students via Interactive Mixed Reality Modules**  
 06/23/2024 – 06/26/2024  
 The 2024 ASEE Annual Conference and Expositions, Portland, Oregon, U.S. [Poster]  
\* Presented under NSF Grantees Poster Session
-  **Mixed Reality Technology: A Virtual Training Tool in Fluid Power Engineering**  
 10/16/2023 – 10/18/2023  
 The 2023 ASME BATH Symposium on Fluid Power and Motion Control, Sarasota, Florida, U.S. [Conference Paper]
-  **Virtual Reality: A Learning Tool for Promoting Learners' Engagement in Engineering**  
 06/25/2023 – 06/28/2023  
 The 2023 ASEE Annual Conference and Exposition, Baltimore Convention Center, MD, U.S. [Conference Paper]
-  **Design Validation of a Mechanically Actuated Digital Pump Using Mixed Reality**  
 05/30/2023 – 06/1/2023  
 The 18<sup>th</sup> Scandinavian International Conference on Fluid Power, Tampere University, Tampere, Finland. [Conference Paper]
-  **Fluid Power in the Era of Digital Reality: Exploring Innovations and Applications**  
 05/9/2023 – 05/10/2023  
 The 2023 Maha Fluid Power Conference, Purdue University, IN, U.S. [Invited Speaker]
-  **Extended Reality (XR) for Fluid Power Education**  
 04/11/2023 – 04/13/2023  
 The 2023 CCEFP Spring Summit, University of Minnesota, MN, U.S. [Invited Speaker]
-  **Mixed Reality Technology: A Design Validation Tool for Engineering Applications**  
 03/31/2023  
 The 2023 Spring Polytechnic Research Impact Area Student Poster Symposium: Realize Digital Enterprise (RDE), Purdue University, IN, U.S. [Poster] \* Best Student Poster Presentation Award
-  **Gerotor Pump Simulation Modules for Enhancing Fluid Power Education**  
 09/14/2022 – 09/16/2022  
 The 2022 ASME BATH Symposium on Fluid Power and Motion Control, Bath University, Bath, U.K. [Conference Paper]
-  **Hydraulic Gripper Designs for Enhancing Construction Robotics and Automation**  
 06/28/2022 – 06/30/2022  
 The 2022 Polytechnic Summit, Darmstadt University of Applied Sciences, Germany. [Conference Paper]
-  **Modular Hydrostatic Vehicle used for Engineering Technology**  
 06/26/2022 – 06/29/2022  
 The 2022 ASEE Annual Conference and Exposition, Minneapolis Convention Center, MN, U.S. [Conference Paper]

## Academic and Community Service

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-  **Manuscript Reviewer** 2022-Ongoing  
American Society of Engineering Education (ASEE).  
Journal of Advanced Technological Education (JATE).  
Journal of Expert Systems with Applications (ESWA).  
Journal of Engineering Technology (JET).  
Archive of Mechanical Engineering.
-  **Regional Conference Coordinator** 2025-Ongoing  
Manufacturing Division at the American Society of Engineering Education (ASEE).
-  **Conference Session Moderator** 2024  
Industrial Engineering Division at the American Society of Engineering Education (ASEE).
-  **Treasurer and Primary Contact** 2023-2024  
Polytechnic Graduate Student Organization (PGSO), Purdue University, U.S.
-  **Volunteer Contributor** 2021-2022  
Fluid Power Club (FPC), Purdue University, U.S.

## Professional Associations

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- Elected Member of Phi Kappa Phi Honor Society at Purdue University** 2024-Ongoing
- Member of the American Society of Engineering Education (ASEE)** 2022-Ongoing
- Member of the American Society of Mechanical Engineers (ASME)** 2022-2024

## Skills

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-  **Programming Languages:** C++, Visual Basic, Block Programming,  $\LaTeX$ .
-  **CAD Design Software:** AutoCAD, 3ds Max, SolidWorks.
-  **Modeling/Simulation:** MATLAB-Simulink/Simscape, LABVIEW, Proteus, Automation Studio.
-  **Control/Optimization:** Convex Programming, Mathematica, Yalmip, ROS.
-  **Gaming Engines and Toolkits:** Unity, Blender, Mixed Reality Toolkit, Oculus VR, AR Foundation.
-  **Text Analysis:** Natural Language Processing (NLP), Sentiment Analysis, Topic Modeling.
-  **Languages:** Arabic, English

## References

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- Dr. Farid Breidi:** Assistant Professor at the School of Engineering Technology (SOET) at Purdue University, U.S. ✉ breidi@purdue.edu ☎ 765-496-5140
- Dr. Faisal Aqlan:** Associate Professor for Industrial Engineering in Engineering Management Programs at the University of Louisville, U.S. ✉ faisal.aqlan@louisville.edu ☎ 814-315-7690
- Dr. Jose Garcia:** Associate Professor at the School of Engineering Technology (SOET) at Purdue University, U.S. ✉ jmgarcia@purdue.edu ☎ 765-494-7312
- Dr. Gaurav Nanda:** Assistant Professor at the School of Engineering Technology (SOET) at Purdue University, U.S. ✉ gnanda@purdue.edu ☎ 765-496-3380
- Dr. Christos Mousas:** Associate Professor at the Computer Graphic Technology (CGT) Department at Purdue University, U.S. ✉ cmousas@purdue.edu ☎ 765-496-0633