

GOKSU AVDAN, PhD  

Tenure-Track Assistant Professor
 Department of Engineering Technology
 Missouri Western State University
 St. Joseph, Missouri 64507

CONTACT

Home: 266 10th St, Wood River, IL, 62095**Phone (Cell):** +1 618-514-4428**E-Mail:** gavdan@missouriwestern.edu, goksuavdan@gmail.com**Website:** <https://www.goksuavdan.com>**Citizenship:** Turkey**Immigration Status:** Permanent Resident (Green Card)**EDUCATION**

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| Ph.D. 2020 – 2024 | Engineering Science (Specialized in Industrial and Quality Engineering) Southern Illinois University, Carbondale, IL (SIUC) |
| M.S. 2017 – 2019 | Industrial Engineering Southern Illinois University, Edwardsville, IL (SIUE) |
| B.S. 2012 – 2017 | Industrial Engineering (Dual Diploma Program) Southern Illinois University, Edwardsville, IL Istanbul Technical University, Istanbul, Turkey (ITU) |
| Minor 2012 – 2017 | Mathematical Studies Southern Illinois University, Edwardsville, IL |

EXPERIENCE

Academic

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| Assistant Professor 2024 – Present | Department of Engineering Technology Missouri Western State University, St. Joseph, MO |
| Instructor 2021 – 2024 | Department of Industrial Engineering Southern Illinois University, Edwardsville, IL |
| Research Assistant 2020 – 2020 2017 – 2019 | Department of Industrial Engineering Department of Electrical and Computer Engineering Southern Illinois University, Edwardsville, IL |
| Teaching Assistant 2017 – Present | Department of Industrial Engineering Southern Illinois University, Edwardsville, IL |

Lab Manager
2019 – 2019

Department of Industrial Engineering
Southern Illinois University, Edwardsville, IL

Non-Academic

Business Analyst
9/2019 – 12/2019

YouParcel, Inc., Totowa, NJ

Engineering (Internship)
5/2018 – 8/2018

Ormat Technologies, Inc., Reno, NV

Manuf. Eng. (Internship)
6/2015 – 7/2015

Celik Halat ve Tel Sanayi A.S., Kocaeli, Turkey

PUBLICATIONS

Journal Papers (*Corresponding Author)

1. **Avdan G**, Onal S., Lu C. IMU-Trans: imputing missing motion capture data with unsupervised transformers. *Neural Computing and Applications*, 2025.
2. **Avdan G**, Chen CB, Onal S. An alternative EMG normalization method: Heterogeneous recurrence quantification analysis of maximum voluntary isometric contraction movements. *Biomedical Signal Processing and Control*, 2024. 93, 106219.
3. Roy D, Cho S, **Avdan G**. Data Envelopment Analysis (DEA) for Improving Ergonomics and Workplace Performance. *Journal of Applied Research on Industrial Engineering*, 2024. 11 (1): 24-36.
4. **Avdan G**, Onal S, Smith BK. Normalization of EMG signals: Optimal MVC positions for the lower limb muscle groups in healthy subjects. *Journal of Medical and Biological Engineering*, 2023. 43(2): 195-202.
5. **Avdan G**, Onal S, Rekabdar B. Regression transfer learning for the prediction of three-dimensional ground reaction forces and joint moments during gait. *International Journal of Biomedical Engineering and Technology*, 2023. 42(4): 317-338.
6. Gunasekera J, **Avdan G**, Lee HF, Kweon S, Klingensmith JD. Investigating the effects of external pressure on coronary arteries with plaques and its role in coronary artery disease. *Journal of Medical Engineering & Technology*, 2022. 46 (7): 624-632.
7. Roy D, **Avdan G***, Cho S. Evaluating Worker Performance and Ergonomic Risks Using EMG and Kinematics: A MIMO Approach. *Journal of Applied Research on Industrial Engineering*, Under Review.
8. **Avdan G**. Detection of Freezing of Gait Episodes in Parkinson's Disease Using RQA Quantifiers and K-Means Clustering. *Working Paper*.

Conference Proceedings

1. **Avdan G**, Onal S. Lean Thinking in Healthcare 5.0 Technologies: An Exploratory Review. Industrial Engineering and Operations Management (IEOM), 2024 (June 4-6), Washington, DC.
2. **Avdan G**, Onal S. Resilient Healthcare 5.0: Advancing Human-Centric and Sustainable Practices with Wearable Devices. *IISE Annual Conference and Expo*, 2024.
3. **Avdan G**, Chen CB, Onal S. Investigation of an alternative EMG normalization technique: Recurrence quantification analysis of maximum voluntary contractions. *Institute of Industrial and Systems Engineering (IISE) Annual Conference and Expo*, 2023 (May 20-23), New Orleans, LA.
4. Roy D, Cho S, **Avdan G**. Ergonomic risk and performance assessment using data envelopment analysis (DEA). *IISE Annual Conference and Expo*, 2023 (May 20-23), New Orleans, LA.
5. **Avdan G**, Onal S, Smith BK. Maximum voluntary contraction (MVC) techniques to normalize lower limb muscle groups in young healthy subjects. *IISE Annual Conference and Expo*, 2022 (May 21-24), Seattle, WA.

Abstracts & Posters & Presentations

1. **Avdan G**, Onal S. Lean Thinking in Healthcare 5.0 Technologies: An Exploratory Review. IEOM Conference, 2024 (June 4-6), Washington, DC.
2. **Avdan G**, Onal S. Resilient Healthcare 5.0: Advancing Human-Centric and Sustainable Practices with Wearable Devices. *IISE Annual Conference and Expo*, 2024.
3. **Avdan G**, Onal S, Lu C. An Unsupervised Transformers Approach for Predicting Missing Markers in Human Motion Capture Systems. *IEEE International Conference on Biomedical and Health Informatics*, 2023 (Oct 15-18), Pittsburgh, PA.
4. **Avdan G**, Chen CB, Onal S. Investigation of an alternative EMG normalization technique: Recurrence quantification analysis of maximum voluntary contractions. *Institute of Industrial and Systems Engineering (IISE) Annual Conference and Expo*, 2023 (May 20-23), New Orleans, LA.
5. Roy D, Cho S, **Avdan G**. Ergonomic risk and performance assessment using data envelopment analysis (DEA). *IISE Annual Conference and Expo*, 2023 (May 20-23), New Orleans, LA.
6. **Avdan G**, Onal S, Smith BK. Maximum voluntary contraction (MVC) techniques to normalize lower limb muscle groups in young healthy subjects. *IISE Annual Conference and Expo*, 2022 (May 21-24), Seattle, WA.
7. **Avdan G**, Lee HF, Klingensmith JD, Celik S, Alluri V, Maddali N. Stress analyses of 3D coronary plaque models based on intravascular ultrasound images. *Biomedical Engineering Society (BMES)*, 2018 (Oct 17-20), Atlanta, GA.

TEACHING EXPERIENCE

Lead Instructor

- **IE-370: Manufacturing Processes**
 - Fall 2022 (4.93/5.00) Hybrid
 - Fall 2023 (4.75/5.00)
- **IE-451: Methods Design & Work Measurements**
 - Spring 2022 (4.21/5.00)
 - Spring 2023 (4.87/5.00)
 - Spring 2024 (NA/5.00)
- **IE-488: Lean Production Systems**
 - Spring 2021 (4.40/5.00) Online
 - Spring 2022 (4.24/5.00)
- **EGT-220: Engineering Materials**
 - Fall 2024 (4.60/5.00)
- **EGT-400: Dynamics**
 - Fall 2024 (NA) Online
- **MET-232: Automated Manufacturing**
 - Fall 2024 (4.60/5.00)
- **MET-242: CNC Machining Processes**
 - Fall 2024 (4.70/5.00)
- **MET-132: Manufacturing Methods**
 - Spring 2025 (Ongoing)
- **EGT-350: Technical Report Writing**
 - Spring 2025 (Ongoing) Online
- **MET-372: Programmable Logic Controllers**
 - Spring 2025 (Ongoing)

Teaching Assistant

- **IE-345: Engineering Economic Analysis** (Fall 2020)
- **IE-430: Managing Engineering and Technology** (Summer 2021, Summer 2022)
- **IE-431: Project Analysis & Control** (Summer 2021, Summer 2022)
- **IE-476: Plantwide Process Control** (Fall 2020, Fall 2021)
- **IE-483: Production Planning & Control** (Fall 2017, Summer 2022)
- **IE-490: Integrated Engineering Design** (Spring 2021)

PROFESSIONAL ACTIVITIES

Research Grants & Travel Awards

- 2024** SIUE Research Equipment and Tools Funding Program (Co-authored, PI: Dr. Sinan Onal), Amount: \$22,100
- 2023** IEEE BHI'23 NSF Student Travel Award, Amount: \$250
- 2023** SIUE Travel/Presentation Funding (IISE Annual Conference and Expo), Amount: \$1,276.44
- 2022** SIUE Travel/Presentation Funding (IISE Annual Conference and Expo), Amount: \$1,335.39
- 2021** Research Grants for Research Doctoral Students, SIUE, Amount: \$1,000
- 2018** Research Grants for Graduate Students, SIUE, Amount: \$500
- 2018** SIUE Travel/Presentation Funding (BMES), Amount: \$750

Reviewed for

- o Artificial Intelligence Review, *Springer* (IF: 10.7)
- o Biomedical Signal Processing and Control, *Elsevier* (IF: 4.9)
- o Neural Computing and Applications, *Springer* (IF: 4.5)
- o IEEE Transactions on Consumer Electronics (IF: 4.3)
- o Heliyon, *Elsevier* (IF: 3.4)
- o Soft Computing, *Springer* (IF: 3.1)
- o Journal of Electromyography and Kinesiology, *Elsevier* (IF: 2.0)
- o IISE Annual Conference and Expo, 2023
- o Healthcare Systems Process Improvement Conference, 2024
- o 9th North American Industrial Engineering and Operations Management (IEOM) Conference, 2024

Honors and Awards

- 2022** Outstanding Teaching Assistant at Doctoral Level, Graduate School, SIUE
- 2016-17** Dean's List, SIUE (Two Times)
- 2016** Honor Student, Istanbul Technical University

Other Meriting Academic Missions

- 2023** Session Chair of Human Factors in Human Performance Track 1 in IISE Annual Conference and Expo
- 2023** Session Chair of Work and Organization Safety in IISE Annual Conference and Expo
- 2022** Session Chair of Physical Ergonomics I in IISE Annual Conference and Expo

Memberships

- o Institute of Industrial and Systems Engineers (IISE)
- o Institute of Electrical and Electronics Engineers (IEEE)
- o IEEE Engineering in Medicine & Biology Society (EMBS)
- o American Society for Quality (ASQ)
- o Institute for Operations Research and the Management Sciences (INFORMS)