Fadel M. Megahed, PhD

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Impact Summary

Research

Externally Funded Research: ~ $1.21M with my share ~ $ 630K. Sponsors include: National Institute of Occupational Safety & Health, American Society for Safety Professionals Foundation, National Science Foundation, Aflac, GE Research, and Gore.

Publications: 49 peer-reviewed journal papers, 3 invited editorials, and 11 conference proceedings

Total Citations: 1,867; h-index: 22, and i10-index: 29

Press Coverage: Research findings have been covered by over 50 media outlets including: Arizona Republic Online, Bloomberg, Industry Week, SupplyChainDive and Yahoo Finance.

Teaching and Mentoring

PhD Advisor: for 8 PhD recipients (all from Auburn University).

Classroom Teaching: Since joining Miami University in Fall 2016, I have taught 5 different courses and a total of 25 sections. The courses spanned the entire spectrum of business analytics, including topics on *introductory statistics*, *data visualization*, *forecasting*, *operations Research*, and *data-driven security*. My pedagogical contributions were recognized with 2 university-wide teaching awards, and 13 faculty commendations by graduating students as a part of their anonymous survey when they collect their diplomas.

Education

Degree	Date	Institution	Location
PhD Industrial & Systems Engineering	2012	Virginia Tech	Blacksburg, VA
M.S. Industrial & Systems Engineering	2009	Virginia Tech	Blacksburg, VA
B.S. Mechanical Engineering	2008	The American University in Cairo	Cairo, Egypt

Honors and Awards

- **Miami University:** *Enders Associate Professor,* 2022–2025.
- **Miami University:** *ASG/Provost's Student Recognition of Teaching Excellence Award,,* 2020–2020.
- **Miami University:** *Neil R. Anderson Endowed Assistant Professor,* 2019–2020.
- **Miami University:** *University-Wide Outstanding Professor Award Nominee,* 2018–2018.
- **NIOSH Deep South Center for Occupational Health and Safety:** *NIOSH Deep South Center for Occupational Health and Safety,* 2012–2012.
- **Institute of Industrial Engineers::** *Finalist, Gilbreth Memorial Fellowship,* 2011–2011.
- **Virginia Tech:** *Co-Recipient of the Industrial and Systems Engineering Outstanding GTA Award,,* 2010–2010.

- **Virginia Tech:** *Finalist of the Paul E. Torgersen Award for Excellence in Graduate Student Research ["Third Best Master's Research in the College of Engineering for the academic year 2009/2010"],* 2010–2010.
- **The American University in Cairo:** *Summa Cum Laude and graduated highest ranked GPA in the "Mechanical Engineering Spring 2008 Graduating Class",* 2008–2008.

Academic Experience

Miami University — Department of Information Systems and Analytics — Oxford, OH

Enders Associate Professor	July 2022–current
Associate Professor	July 2020–current
Neil R. Anderson Assistant Professor	July 2019–Jun 2020
Assistant Professor	Aug 2016–Jun 2020

- Ongoing research in applied machine learning, data visualization, physical fatigue modeling, statistical surveillance, stock market prediction, transportation analytics.
- Redesigned the *Quantitative Analysis of Business Problems* course, developed the *Data-Driven Security* course and assisted with the successful proposal for our MSBA program. Furthermore, I have made significant updates to the *Business Intelligence and Data Visualization* course, where I introduced modules on *data quality/validation*, *use of data mining for data exploration*, and *use of multiple platforms for dashboard development*.
- **Courses Taught:**
  - ISA 203: Supplementary Business Statistics — Last taught: S2018
  - ISA 321: Quantitative Analysis of Business Problems — Last taught: F2018
  - ISA 401/501: Business Intelligence & Data Visualization — Last taught: F2022
    Course Materials: Publicly available at ISA 401 GitHub Repo
  - ISA 419: Data-Driven Security — Last taught: F2022
  - ISA 444: Business Forecasting — Last taught: S2022
    Course Materials: Publicly available at ISA 444 GitHub Repo
- **Dissertation Committees:** Kelly Ayres (Biostatistics, Expected Ph.D. 2023, Saint Louis University), Longwen Zhao (Biostatistics, Ph.D. 2022, Saint Louis University), Sahand Hajifar (Industrial, Ph.D. 2022, University at Buffalo), Saeb Ragani Lamooki (outside reader: Mechanical and Aerospace Engineering, Ph.D. 2022, University at Buffalo), Eileen Rintsch (Geography, M.S. 2021), Miao Cai (Biostatistics, Ph.D. 2020, Saint Louis University), Amir Baghdadi (outside reader: Mechanical and Aerospace Engineering, Ph.D. 2019, University at Buffalo).
- **Service:**
  - VP for Research and Innovation Search Committee: Member — 2021–2022
  - Divisional Committee on Societal Impact: Member — 2021–2023
  - Dept. Search Committee for Lecturer Position: Chair — 2021–2023
  - Divisional Research Committee: Member — 2021–2023
  - MU Carbon Offsets Subcommittee: Member — 2020–2023
  - Divisional Technology Policies Committee: Member — 2019–2020
  - Dept. Search Committee for 5 TT positions: Member — 2017–2020
  - Major/Minor Coordination Committee:
    - Chair — 2019–2023
    - Member — 2017–2019
  - Center for Analytics and Data Science: Project lead — 2016–2019
  - Master of Science in Business Analytics Curriculum: Proposal Developer — 2018–2018
    I co-contributed to the initial design of five proposed courses (2018)
  - STAR Seminar Series Committee: — 2016–2017

Auburn University @ Department of Industrial and Systems Engineering Auburn, AL

Affiliate Assistant Professor Aug 2016–Aug 2020
Assistant Professor Aug 2012–Aug 2016

- Research in data mining, data visualization, spatio-temporal statistics, statistical surveillance, stock market prediction, transportation analytics.
- Initiated and taught a graduate/undergraduate course on *Data Visualization* (Spring 2014 and Spring 2016).
- **Advisor**: Lin Lu (Industrial, Ph.D. 2019), Hamidreza Ahady Dolatsara (Industrial, Ph.D. 2019), Mohammad Ali Alamdar Yazdi (Industrial, Ph.D. 2018), Zahra Sedighi Maman (Industrial, Ph.D. 2018), Bin Weng (Industrial, Ph.D. 2017), Theyab Alhwiti (Industrial, Ph.D. 2017), Ali Dag (Industrial, Ph.D. 2016), Alexander Schnichels (B.S. Thesis at FH Aachen-Germany, 2016), Yao-Te Tsai (Industrial, Ph.D. 2015).
- Initiated and taught a graduate/undergraduate course on *Big Data Analytics* (Spring 2013).
- **Dissertation Committees:** Amir Mehdizadeh (Industrial, Ph.D. 2022), Qiong Hu (Industrial, Ph.D. 2021), Mohammadnaser Ansari (Industrial, Ph.D. 2020), Ali Aldubiassi (Industrial, Ph.D. 2020), Nasrin Mohabbati Kalejahi (Industrial, Ph.D. 2019), Ebrahim Mortaz (Industrial, Ph.D. 2017), Eren Sakinc (Industrial, Ph.D. 2016), Thomas Sanders (Industrial, Ph.D. 2016), Masood Jabarnejad (Industrial, Ph.D. 2015), Heather Avery (Computer Science, Ph.D. 2015), Zhou Hai (Industrial, Ph.D. 2014), Adam Paul (Computer Science, M.S. 2014), Melody Denhere (reader: Statistics, Ph.D. 2013), Dilcu Helvaci (Industrial, Ph.D. 2013).
- **Service:** Faculty Advisor to Alpha Pi Mu (2014-2016), Graduate Admissions Committee (2014-2016), Library Coordinator (2013-2016), Department Chair Administrative Review Committee (2014-2015), Search Committee Member for Administrative Support Associate (2013), and Department Representative at Summer Graduation (2013).

Virginia Tech @ Grado Department of Industrial and Systems Engineering Blacksburg, VA

Graduate Teaching Assistant Jan–May 2012
Instructor Aug–Dec 2011
Graduate Research Assistant Jan 2010–Aug 2011
Graduate Teaching Assistant Aug 2009–Dec 2010

- Research in quality control methodologies for massive datasets. Duties included: publishing work, presenting at national conferences, mentoring undergraduate student researchers, writing proposals, and preparing yearly reports for the NSF GOALI grant.
- Taught two sections of *Production Planning and Inventory Control* with full course responsibility.
- As a graduate teaching assistant, I held problem sessions, made exams, graded quizzes, and assisted the faculty with handling the students' projects. I was a co-recipient of GTA of the year.

Publications

Journal Publications

- Conventions used in my publications list throughout this CV:
  - **Authorship order** follows the traditional scientific authorship conventions, where PI is placed last (or second-to-last in papers stemming from collaborative grants, e.g., with Cavuoto or Rigdon).
  - ※ and § are used to denote graduate and undergraduate students that I advised/mentored.

1. **Megahed, FM.**, Jones-Farmer, LA., Ma, Y., & Rigdon, SE. (2022). Explaining the Varying Patterns of COVID-19 Deaths Across the United States: 2-Stage Time Series Clustering Framework. *JMIR Public Health and Surveillance*. 8 (7), e32164.

2. Lamooki※, SR., Hajifar※, S., Kang, J., Sun, H., **Megahed, FM.**, & Cavuoto, LA. (2022). A Data Analytic End-to-End Framework for the Automated Quantification of Ergonomic Risk Factors Across Multiple Tasks using a Single Wearable Sensor. *Applied Ergonomics*. 102, 103732.

3. Nguyen, H Du., Tran, KP., Castagliola, P., & **Megahed, FM.** (2022). Enabling Smart Manufacturing with Artificial Intelligence and Big Data: A Survey and Perspective. *Advanced Manufacturing Methods*. 1-26.

4. **Megahed, FM.**, Jones-Farmer, LA., Zhao※, L., & Rigdon, SE. (2021). Modeling the Differences in the Time-Series Profiles of New COVID-19 Daily Confirmed Cases in 3,108 Contiguous US Counties: A Retrospective Analysis. *PLOS ONE*. 16 (11), e0242896.

5. Dolatsara※, HA., Chen, Y-J., Leonard, RD., **Megahed, FM.**, & Jones-Farmer, LA. (2021). Explaining Predictive Model Performance: An Experimental Study of Data Preparation and Model Choice. *Big Data*. .

6. Mehdizadeh※, A., Yazdi※, MAA., Cai※, M., Hu※, Q., Vinel, A., Rigdon, SE., Davis, K., & **Megahed, FM.** (2021). Predicting Unsafe Driving Risk among Commercial Truck Drivers using Machine Learning: Lessons Learned from the Surveillance of 20 Million Driving Miles. *Accident Analysis & Prevention*. 159, 106285.

7. Romero, D., Wuest, T., Keepers, M., Cavuoto, LA., & **Megahed, FM.** (2021). Smart Wearable and Collaborative Technologies for the Operator 4.0 in the Present and Post-COVID Digital Manufacturing Worlds. *ASTM International*. 5 (1), 148-166.

8. Lamooki※, SR., Kang, J., Cavuoto, LA., **Megahed, FM.**, & Jones-Farmer, LA. (2021). Personalized and Nonparametric Framework for Detecting Changes in Gait Cycles. *IEEE Sensors Journal*. 21 (17), 19236-19246.

9. Cai※, M., Mehdizadeh※, A., Hu※, Q., Yazdi※, MAA., Vinel, A., Davis, KC., Xian, H., **Megahed, FM.**, & Rigdon, SE. (2021). Hierarchical Point Process Models for Recurring Safety Critical Events Involving Commercial Truck Drivers: A Reliability Framework for Human Performance Modeling. *Journal of Quality Technology*. 1-19.

10. Cai※, M., Yazdi※, MAA., Mehdizadeh※, A., Hu※, Q., Vinel, A., Davis, K., Xian, H., **Megahed, FM.**, & Rigdon, SE. (2021). The Association Between Crashes and Safety-Critical Events: Synthesized Evidence from Crash Reports and Naturalistic Driving Data among Commercial Truck Drivers. *Transportation Research Part C: Emerging Technologies*. 126, 103016.

11. Moore§, JF., Carvalho, A., Davis, GA., Abulhassan, Y., & **Megahed, FM.** (2021). Seat Assignments with Physical Distancing in Single-Destination Public Transit Settings. *IEEE Access*. 9, 42985-42993.

12. Lu※, L., **Megahed, FM.**, & Cavuoto, LA. (2021). Interventions to Mitigate Fatigue Induced by Physical Work: A Systematic Review of Research Quality and Levels of Evidence for Intervention Efficacy. *Human Factors*. 63 (1), 151-191.

13. Hajifar※, S., Lamooki※, SR., Cavuoto, LA., **Megahed, FM.**, & Sun, H. (2021). Investigation of Heterogeneity Sources for Occupational Task Recognition via Transfer Learning. *Sensors*. 21 (19), 6677.

14. Hajifar※, S., Sun, H., **Megahed, FM.**, Jones-Farmer, LA., Rashedi, E., & Cavuoto, LA. (2021). A Forecasting Framework for Predicting Perceived Fatigue: Using Time Series Methods to Forecast Ratings of Perceived Exertion with Features from Wearable Sensors. *Applied Ergonomics*. 90, 103262.

15. Baghdadi※, A., Cavuoto, LA., Jones-Farmer, A., Rigdon, SE., Esfahani, ET., & **Megahed, FM.** (2021). Monitoring Worker Fatigue using Wearable Devices: A Case Study to Detect Changes in Gait Parameters. *Journal of Quality Technology*. 53 (1), 47-71.

16. Dolatsara※, HA., Chen, YJ., Evans§, C., Gupta, A., & **Megahed, FM.** (2020). A Two-Stage Machine Learning Framework to Predict Heart Transplantation Survival Probabilities over Time with a Monotonic Probability Constraint. *Decision Support Systems*. 137, 113363.

17. Maman※, ZS., Chen, Y-J., Baghdadi※, A., Lombardo, S., Cavuoto, LA., & **Megahed, FM.** (2020). A Data Analytic Framework for Physical Fatigue Management using Wearable Sensors. *Expert Systems with Applications*. 155, 113405.

18. Wuest, T., Romero, D., Cavuoto, LA., & **Megahed, FM.** (2020). Empowering the Workforce in Post–COVID-19 Smart Manufacturing Systems. *Smart Sustain. Manuf. Syst.* 4 (5).

19. Hu※, Q., Cai※, M., Mohabbati-Kalejahi※, N., Mehdizadeh※, A., Yazdi※, MAA., Vinel, A., Rigdon, SE., Davis, KC., & **Megahed, FM.** (2020). A Review of Data Analytic Applications in Road Traffic Safety. Part 2: Prescriptive Modeling. *Sensors*. 20 (4), 1096.

20. Mehdizadeh※, A., Cai※, M., Hu※, Q., Yazdi※, MAA., Mohabbati-Kalejahi※, N., Vinel, A., Rigdon, SE., Davis, KC., & **Megahed, FM.** (2020). A Review of Data Analytic Applications in Road Traffic Safety. Part 1: Descriptive and Predictive Modeling. *Sensors*. 20 (4), 1107.

21. Yazdi※, MA Alamdar., Negahban※, A., Cavuoto, L., & **Megahed, FM.** (2019). Optimization of Split Keyboard Design for Touchscreen Devices. *International Journal of Human–Computer Interaction*. 35 (6), 468-477.

22. Weng※, B., Lu※, L., Wang, X., **Megahed, FM.**, & Martinez, W. (2018). Predicting Short-Term Stock Prices using Ensemble Methods and Online Data Sources. *Expert Systems with Applications*. 112, 258-273.

23. Weng※, B., Martinez, W., Tsai※, YT., Li, C., Lu※, L., Barth, JR., & **Megahed, FM.** (2018). Macroeconomic Indicators Alone can Predict the Monthly Closing Price of Major US Indices: Insights from Artificial Intelligence, Time-Series Analysis and Hybrid Models. *Applied Soft Computing*. 71, 685-697.

24. Baghdadi※, A., **Megahed, FM.**, Esfahani, ET., & Cavuoto, LA. (2018). A Machine Learning Approach to Detect Changes in Gait Parameters Following a Fatiguing Occupational Task. *Ergonomics*. 61 (8), 1116-1129.

25. Tsai※, YT., Swartz, SM., & **Megahed, FM.** (2018). Estimating the Relative Efficiency of Highway Safety Investments on Commercial Transportation. *Transportation Journal*. 57 (2), 193-218.

26. Koosha, M., Noorossana, R., & Megahed, F. (2017). Statistical Process Monitoring via Image Data using Wavelets. *Quality and Reliability Engineering International*. 33 (8), 2059-2073.

27. Lu※, L., **Megahed, FM.**, Sesek, RF., & Cavuoto, LA. (2017). A Survey of the Prevalence of Fatigue, Its Precursors and Individual Coping Mechanisms among US Manufacturing Workers. *Applied Ergonomics*. 65, 139-151.

28. Mohabbati-Kalejahi※, N., Yazdi※, MAA., **Megahed, FM.**, Schaefer, SY., Boyd, LA., Lang, CE., & Lohse, KR. (2017). Streamlining Science with Structured Data Archives: Insights from Stroke Rehabilitation. *Scientometrics*. 113 (2), 969-983.

29. Maman※, ZS., Yazdi※, MAA., Cavuoto, LA., & **Megahed, FM.** (2017). A Data-Driven Approach to Modeling Physical Fatigue in the Workplace using Wearable Sensors. *Applied Ergonomics*. 65, 515-529.

30. Weng※, B., Ahmed※, MA., & **Megahed, FM.** (2017). Stock Market One-Day Ahead Movement Prediction using Disparate Data Sources. *Expert Systems with Applications*. 79, 153-163.

31. He, K., Zhang, M., Zuo, L., Alhwiti※, T., & **Megahed, FM.** (2017). Enhancing the Monitoring of 3D Scanned Manufactured Parts Through Projections and Spatiotemporal Control Charts. *Journal of Intelligent Manufacturing*. 28 (4), 899-911.

32. Dag※, A., Oztekin, A., Yucel, A., Bulur, S., & **Megahed, FM.** (2017). Predicting Heart Transplantation Outcomes Through Data Analytics. *Decision Support Systems*. 94, 42-52.

33. Maman※, ZS., Murphy§, WW., Maghsoodloo, S., Ahmadi, FH., & **Megahed, FM.** (2016). A Short Note on the Effect of Sample Size on the Estimation Error in C p. *Quality Engineering*. 28 (4), 455-466.

34. Dag※, A., Topuz, K., Oztekin, A., Bulur, S., & **Megahed, FM.** (2016). A Probabilistic Data-Driven Framework for Scoring the Preoperative Recipient-Donor Heart Transplant Survival. *Decision Support Systems*. 86, 1-12.

35. He, Z., Zuo, L., Zhang, M., & **Megahed, FM.** (2016). An Image-Based Multivariate Generalized Likelihood Ratio Control Chart for Detecting and Diagnosing Multiple Faults in Manufactured Products. *International Journal of Production Research*. 54 (6), 1771-1784.

36. Weese, M., Martinez, W., **Megahed, FM.**, & Jones-Farmer, LA. (2016). Statistical Learning Methods Applied to Process Monitoring: An Overview and Perspective. *Journal of Quality Technology*. 48 (1), 4-24.

37. Tsai※, YT., Smith§, HD., Swartz, SM., & **Megahed, FM.** (2015). Using Visual Data Mining in Highway Traffic Safety Analysis and Decision Making. *Journal of Transportation Management*. 26 (1), 5.

38. Tsai※, YT., Alhwiti※, T., Swartz, SM., & **Megahed, FM.** (2015). The Effects of Socio-Economic and Public Policy Factors on U.S. Highway Safety. *Journal of Transportation Law, Logistics, and Policy*. 82 (1/2), 31.

39. Smith§, HD., **Megahed, FM.**, Jones-Farmer, LA., & Clark, M. (2014). Using Visual Data Mining to Enhance the Simple Tools in Statistical Process Control: A Case Study. *Quality and Reliability Engineering International*. 30 (6), 905-917.

40. Zhang, M., **Megahed, FM.**, & Woodall, WH. (2014). Exponential CUSUM Charts with Estimated Control Limits. *Quality and Reliability Engineering International*. 30 (2), 275-286.

41. Wells, LJ., **Megahed, FM.**, Niziolek§, CB., Camelio, JA., & Woodall, WH. (2013). Statistical Process Monitoring Approach for High-Density Point Clouds. *Journal of Intelligent Manufacturing*. 24 (6), 1267-1279.

42. Zhang, M., Peng, Y., Schuh, A., **Megahed, FM.**, & Woodall, WH. (2013). Geometric Charts with Estimated Control Limits. *Quality and Reliability Engineering International*. 29 (2), 209-223.

43. **Megahed, FM.**, Wells, LJ., Camelio, JA., & Woodall, WH. (2012). A Spatiotemporal Method for the Monitoring of Image Data. *Quality and Reliability Engineering International*. 28 (8), 967-980.

44. Wells, LJ., **Megahed, FM.**, Camelio, JA., & Woodall, WH. (2012). A Framework for Variation Visualization and Understanding in Complex Manufacturing Systems. *Journal of Intelligent Manufacturing*. 23 (5), 2025-2036.

45. **Megahed, FM.**, & Camelio, JA. (2012). Real-Time Fault Detection in Manufacturing Environments using Face Recognition Techniques. *Journal of Intelligent Manufacturing*. 23 (3), 393-408.

46. **Megahed, FM.**, Fraker, SE., & Woodall, WH. (2012). A Note on Two Performance Metrics for Public-Health Surveillance Schemes. *Journal of Applied Probability and Statistics*. 7 (1), 35-41.

47. **Megahed, FM.**, Woodall, WH., & Camelio, JA. (2011). A Review and Perspective on Control Charting with Image Data. *Journal of Quality Technology*. 43 (2), 83-98.

48. **Megahed, FM.**, Kensler, JLK., Bedair, K., & Woodall, WH. (2011). A Note on the ARL of Two-Sided Bernoulli-Based CUSUM Control Charts. *Journal of Quality Technology*. 43 (1), 43-49.

49. Dolatsara※, HA., Chen, YJ., Leonard, RD., **Megahed, FM.**, & Jones-Farmer, LA. (NA). Explaining Predictive Model Performance: An Experimental Study of Data Preparation and Model Choice. *Big Data*. .

Invited Papers/Discussions

1. **Megahed, FM.**, Chen, YJ., Megahed, A., Ong, Y., Altman, N., & Krzywinski, M. (2021). The Class Imbalance Problem. *Nat Methods*. 18 (11), 1270-7.

2. Maman※, ZS., Lu※, L., **Megahed, FM.**, & Cavuoto, LA. (2019). A DMAIC Perspective on Physical Fatigue Management. *Professional Safety*. 64 (6), 26-27.

3. **Megahed, FM.** (2019). Discussion on "real-Time Monitoring of Events Applied to Syndromic Surveillance". *Quality Engineering*. 31 (1), 97-104.

Conference Proceedings and Book Chapters

1. Lamooki※, SR., Kang, J., Cavuoto, LA., **Megahed, FM.**, & Jones-Farmer, LA. (2020). Challenges and Opportunities for Statistical Monitoring of Gait Cycle Acceleration Observed from IMU Data for Fatigue Detection. **. 2020 8th IEEE RAS/EMBS International Conference for Biomedical Robotics and Biomechatronics (BioRob) ....

2. Megahed, F M., Jones-Farmer, LA., Cai※, M., Rigdon, S E., & Mohamed, M. (2019). A Statistical (Process Monitoring) Perspective on Human Performance Modeling in the Age of Cyber-Physical Systems. *International Workshop on Intelligent Statistical Quality Control*. 197-228.

3. Baghdadi※, A., Maman※, ZS., Lu※, L., Cavuoto, LA., & **Megahed, FM.** (2017). Effects of Task Type, Task Duration, and Age on Body Kinematics and Subjective Fatigue. *Proceedings of the Human Factors and Ergonomics Society Annual Meeting*. 61 (1 ....

4. Cavuoto, L., & Megahed, F. (2017). A Data-Driven Approach to Identifying Physical Fatigue. *ASSE Professional Development Conference and Exposition*. .

5. Maman※, Z Sedighi., Baghdadi※, A., Megahed, F., & Cavuoto, L. (2016). Monitoring and Change Point Estimation of Normal (in-Control) and Fatigued (Out-of-Control) State in Workers. *International Design Engineering Technical Conferences and Computers And .... .*

6. Cavuoto, L., & Megahed, F. (2016). Understanding Fatigue and the Implications for Worker Safety. *ASSE Professional Development Conference and Exposition*. .

7. Thirugnanasambandam, S.., Raj, D.., A., Stone, Sanders, T.., Sridhar, S.., Gordon, S.., Evans, J.., Megahed, F.., Flowers, G.., Bozack, M.., & Johnson, W.. (2016). Proportional Hazard Model of Doped Low Creep Lead Free Solder Paste under Vibration. **. 2016 15th IEEE Intersociety Conference on Thermal and Thermomechanical Phenomena in Electronic Systems (ITherm) ....

8. Raj, A., Thirugnanasambandam, S., Sanders, T., Sridhar, S., Gordon, S., Evans, J., Megahed, F., Bozack, M., Johnson, W., & Carpenter, M. (2016). Proportional Hazard Model of Doped Low Creep Lead Free Solder Paste under Thermal Shock. **. 2016 15th IEEE Intersociety Conference on Thermal and Thermomechanical Phenomena in Electronic Systems (ITherm) ....

9. **Megahed, FM.**, & Jones-Farmer, LA. (2015). Statistical Perspectives on 'Big Data'. *Frontiers in Statistical Quality Control*. 11, 29-47.

10. Ansari※, M., Negahban※, A., **Megahed, FM.**, & Smith, JS. (2014). HistoRIA: A New Tool for Simulation Input Analysis. *Proceedings of the Winter Simulation Conference*. 2014, 2702-2713.

11. Megahed, F., Wells, L., & Camelio, J. (2010). The Use of 3D Laser Scanners in Statistical Process Control. *SAE Technical Paper*. 01-1864.

Funded Projects

External Funding

1. "Reliability Modeling of Shoulder Fatigue and Recovery for Warehouse Operators Performing Dynamic Tasks", Co-I (w/ Lora Cavuoto and Hongyue Sun), **National Institute of Occupational Safety & Health**, $361,486 (Share: $119,621), 2020–2023.

2. "Assessing the Measurement Capability of a Multi-Sensor Garment", Co-I (w/ Lora Cavuoto and Hongyue Sun), **Gore**, $31,000 (Share: $0), 2020–2020.

3. "Testing the Soteria Worker Safety System", Co-I (w/ Lora Cavuoto and Hongyue Sun), **GE Research**, $31,929 (Share: $0), 2020–2020.

4. "IUBRC Measuring Entrepreneurship in Southwest Ohio", Co-PI (w/ Lindsey Holden and Greg Niemesh), **Indiana University Business Research Center**, $15,393 (Share: $7,696), 2019–2019.

5. "ASSURED: Analytical Support System for Understanding Risk Exposure to Drivers", Co-I (w/ Robert Leonard, Tessa Chen and Lora A. Cavuoto), **University of Cincinnati Education and Research Center Pilot Research Project Training Program**, $4,642 (Share: $1,547), 2018–2019.

6. "Funding for DataFests 2017– 2018", Co-PI (w/ Allison Jones-Farmer), **P&G- The Greater Cincinnati Foundation**, $20,000 (Share: $10,000), 2017–2018.

7. "Text Mining of Social Media Mentions and Customer Survey Responses", PI (w/ Alex Vinel), **Aflac**, $72,000 (Share: $72,000), 2016–2017.

8. "GOALI:Collaborative Research: Human Maintenance- A Prognostics Framework to Model Changes in Drivers' Safety Performance and Optimize Dispatching Policies", PI (w/ Alex Vinel, Doug Mettenburg and Steve Rigdon), **National Science Foundation**, $296,206 (Share: $212,716), 2016–2020.

9. "Advancing Safety Surveillance using Individualized Sensor Technology", Co-I (w/ Lora Cavuoto), **American Society for Safety Professionals Foundation**, $300,000 (Share: $147,500), 2015–2018.

10. "Data Analytics for Reliability Testing of Electronics Packaging", Investigator (w/ John Evans and Jeff Suhling), **Department of Defense (through Mechanical Engineering)**, $21,099 (Share: $21,099), 2015–2016.

11. "The Application of Data Analytics for Assistance with a Product Launch for a Tier I Automotive Supplier", PI (w/ Tom Devall), **Industrial Partner**, $10,000 (Share: $10,000), 2014–2015.

12. "Collaborative Research: Planning Grant: I/UCRC for Advanced Vehicle Manufacturing", CoPI (w/ John Evans, Andres Carrano, Virginia Davis, Sean Gallagher, and Tom Devall), **National Science Foundation**, $14,500 (Share: $2,900), 2014–2015.

13. "Towards the Identification of Predictor Variables for Commercial Vehicle Safety", PI (w/ Stephen Swartz and Richard Sesek), **CDC-NIOSH through the Deep South Center for Occupational Health and Safety**, $19,315 (Share: $17,384), 2013–2014.

14. "A Torque Tool System to Foster Auburn's Experiential Learning and Advanced Manufacturing Research", PI, **P&G- The Greater Cincinnati Foundation**, $10,000 (Share: $10,000), 2012–2013.

Internal Funding

1. "Data-Driven Security- A New FSB Course", PI, **FSB Strategic Initiatives Fund Award**, $13,445, 2019–2019.

2. "Funds to Support Attending Two Top-Tier Data Analytics Conferences in Vietnam and Hong Kong during 2019 summer", PI, **Higgin Kim Asia Travel Grant**, $2,713, 2018–2019.

3. "Learning the state-of-the-art in data analytics through attending two top-tier international conferences", PI, **John E. and Winifred E. Dolibois Faculty Development Fund**, $4,130, 2018–2019.

Computational Grants

1. "Academic: Support for ISA 480- Data-Driven Security", PI, **Ohio Supercomputer Center**, 10,000 (computing resource units), 2019–2020.

2. "Predicting Heart Transplantation Outcomes using a Two-Stage Machine Learning Methodology", PI, **Ohio Supercomputer Center**, 10,000 (computing resource units), 2019–2020.

3. "Utilization of Google Cloud for a Cyber-Security Analytics Class", PI, **Google Cloud Platform Education Grant**, 2900, 2019–2020.

4. "Human Maintenance: A Prognostics Framework to Model Changes in Drivers' Safety Performance and Optimize Dispatching Policies", PI, **Ohio Supercomputer Center**, 10,000 (computing resource units), 2018–2019.
5. "Advancing Safety Surveillance Using Individualized Sensor Technology (ASSIST)", PI, **Ohio Supercomputer Center**, 30,000 (computing resource units), 2017–2019.
6. "Utilization of Amazon's Web Services for INSY 4970 Big Data Class", PI, **AWS in Education Coursework Grant award**, 11800, 2013–2015.
7. "Utilization of Window's Azure for Big Data Analytics in Industrial and Systems Engineering", PI, **Educator Grant of Windows Azure Academic Passes**, 50000, 2014–2014.

PhD Students Advised

#	Name	Institution	Degree	Year	Current Status
1	Lin Lu	Auburn University	PhD, Industrial & Systems Engineering	2019	Assistant Professor of Business Analytics at Fairfield University [\href{https://facultyprofile.fairfield.edu/?uname Profile}]
2	Hamid Ahady Dolatsara	Auburn University	PhD, Industrial & Systems Engineering	2019	Assistant Professor of Business Analytics at Clark University
3	Mohammad Ali Alamdar Yazdi	Auburn University	PhD, Industrial & Systems Engineering	2018	Assistant Professor of Practice (Business Analytics) at Johns Hopkins
4	Zahra Sedighi Maman	Auburn University	PhD, Industrial & Systems Engineering	2018	Assistant Professor of Business Analytics at Adelphi University
5	Bing Weng	Auburn University	PhD, Industrial & Systems Engineering	2017	Applied Scientist II at Amazon
6	Theyab Alhwiti	Auburn University	PhD, Industrial & Systems Engineering	2017	Visiting Assistant Professor at Clark University
7	Ali Dag	Auburn University	PhD, Industrial & Systems Engineering	2016	Associate Professor of Business Analytics at Creighton University
8	Yao-Te Tsai	Auburn University	PhD, Industrial & Systems Engineering	2015	Associate Professor of International Business at Feng Chia University (Taiwan)

Professional Experience

Institut fur Textiltechnik der RWTH Aachen — Aachen, Germany — Summer 2007

Undergraduate Researcher

- Developed a GUI to measure yarn properties using image processing techniques.
- Developed a GUI to measure various quality parameters of non-woven fabrics.
- Researched fiber migration in air jet spun yarns.

British Gas — Cairo, Egypt — Summer 2007/2008

Engineering, Health and Safety Intern

- Assisted in coordinating the Behavioral Based Safety Program, prepared the Health Risk Assessment file for all BG Egypt Activities.
- Participated in the weekly safety inspection for the *Egyptian Liquefied Gas Site*.
- Trained radio operators on the emergency response procedures.

Professional Memberships

- American Society for Quality.
- American Society for Safety Engineers.
- Institute for Operations Research and the Management Sciences.
- Egyptian Engineer's Syndicate.
- International Society for Heart and Lung Transplantation.

Professional Service

- Case Study Section Editor, *Journal of Quality Technology,* 2021–2023.
- Editorial Board Member, *Journal of Financial Economic Policy,* 2019–2023.
- Scientific Committee Member, *XIIIth International Workshop on Intelligent Statistical Quality Control, Hong Kong,* 2018–2019.
- International Program Committee Member, *ISSAT International Conference on Data Science in Business, Finance and Industry, Da Nang, Vietnam,* 2018–2019.
- Editorial Board Review Member, *Journal of Quality Technology,* 2018–2023.
- Session Organizer, "Data Visualization", *INFORMS Annual Meeting,* 2016–2016.
- Scientific Committee Member, *XIIth International Workshop on Intelligent Statistical Quality Control, Hamburg, Germany,* 2015–2016.
- Session Organizer, "Analytics and Visualization of Engineering Data", *ISERC Annual Meeting,* 2015–2015.
- Session Organizer (w/ Kaibo Wang, Tsinghua University), `From Data to Decision-Making: A SPC Perspective",`The Modeling, Monitoring and Control of Systems using Complex Data (I)", and "The Modeling, Monitoring and Control of Systems using Complex Data (II)", *INFORMS Annual Meeting,* 2013–2013.
- Session Organizer , "Phase I Control Charting: New Directions and Research Opportunities", *INFORMS Annual Meeting,* 2012–2012.
- Session Chair, *Joint Statistical Meeting,* 2011–2011.
- Reviewed for, *American Statistician, Applied Ergonomics, Applied Soft Computing, Applied Stochastic Models in Business and Industry, Communications in Statistics - Theory and Methods, Computational Statistics, Computers & Industrial Engineering, Computers & Operations Research, Decision Support Systems, Ergonomics, Expert Systems with Applications, Human Factors, IEEE Access, IEEE International Conference on Industrial Informatics, IIE Transactions, International Journal of Production Research, Journal of Manufacturing Systems, Naval Research Logistics, Journal of Quality Technology, Reliability Engineering & System Safety, Quality Engineering, SME Journal of Manufacturing Systems,* 2010–2023.

Skills

- **Statistical Packages:** R, Minitab, JMP.
- **Optimization Software:** Lindo/Lingo; some exposure to Cplex.
- **Programming Languages:** R; some experience with MATLAB and Python.
- **Data Visualization:** R, Tableau, PowerBI; some exposure to D3.js.
- **Applications:** R: rmarkdown, flexdashboard, xarigan; and *gradio:* TAVR web app