HANEEN B. ALI, Ph.D.

Associate Professor
Health Services Administration Program & Industrial and Systems Engineering Department
Auburn University
7080 Haley Center, Auburn, AL 36849
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EDUCATION

- **Ph.D. in Industrial and Systems Engineering** **August 2016**
  The State University of New York at Binghamton**,** Binghamton, NY
  Dissertation: "Design a Novel Notification System to Improve Quality of Care in Nursing Homes"
- **M.S. in Industrial Engineering** **January 2010**
  Jordan University of Science and Technology, Jordan
- **B.S. in Biosystems Engineering** **June 2007**
  Jordan University of Science and Technology, Jordan

CERTIFICATIONS

- **Lean Six Sigma Black Belt**, The State University of New York at Binghamton, Binghamton, NY **2017**
- **Lean Six Sigma Green Belt**, The State University of New York at Binghamton, Binghamton, NY **2014**

RESEARCH INTERESTS

- Human Factors Engineering
- Healthcare Delivery Systems
- Data Analytics
- Ethnographic and Survey Design
- Quality and Process Improvement in Healthcare

PROFESSIONAL EXPERIENCE

Feb '22 – Present
Associate Professor (with tenure), Health Services Administration Program
Associate Professor (joint faculty), Department of Industrial and Systems Engineering
Auburn University, Auburn, AL

Aug '17 – Jan '22
Assistant Professor (tenure track), Health Services Administration Program
Assistant Professor (joint faculty), Department of Industrial and Systems Engineering
Auburn University, Auburn, AL

Research
- Developed a research program in the healthcare systems. Publish the outcomes in high-quality peer-reviewed journals and conference proceedings. Involve graduate and undergraduate students in research projects
- Collaborate with different research groups on data analytic topics
- Advise and fund graduate and undergraduate students

Teaching
- Develop and teach undergraduate and graduate courses in both Health Services Administration and Industrial & Systems Engineering Programs
- Advise Industrial & Systems Engineering senior design teams working on healthcare-related projects

Service
- Faculty Advisor of Auburn's Health & Hospital Administration Organization (HHAO)
- Reviewer of several journals

Aug '16 – Aug '17	**Instructor, Department of Industrial and Systems Engineering** Auburn University, Auburn, AL • Taught several Engineering Economy classes for undergraduate students and developed instructional materials for graduate-level engineering economy classes
Aug '13 – Aug '16	**Ph.D. Student, Teaching & Research Assistant, Department of Systems Science & Industrial Engineering,** The State University of New York at Binghamton**,** Binghamton, NY

TEACHING

Courses Taught

- HADM 3800 Healthcare Analytics
- HADM 4880 Health Information Technology
- HADM 4893 Electronic Health Record Applications
- INSY 3600 Engineering Economy
- INSY 7980 Special Topics in Healthcare: Human Factors in Healthcare
- INSY 7980 Special Topics in Healthcare: Research Methods and Design

Courses Developed

- INSY 7980 Special Topics in Healthcare: Human Factors in Healthcare
- INSY 7980 Special Topics in Healthcare: Research Methods and Design
- HADM 4893 Electronic Health Record Applications
- INSY 4970/ INSY 7970 Special Topics: Healthcare Systems, Policy, and Culture

PUBLICATIONS & PRESENTATIONS

Refereed Journal Publications (**corresponding author, *students)

Ali, H. **, Fatemi, Y. *, Ali, D. *, Hamasha, S., Hamasha, M. (2022). Investigating Frontline Nurse Stress: Perceptions of Job Demands, Organizational Support, and Social Support during the COVID-19 Pandemic. *Frontiers in Public Health*, 10. DOI: 10.3389/fpubh.2022.839600

Ahmed, A. **, Ashour, O., **Ali, H.**, & Firouz, M. (2022). An Integrated Optimization and Machine Learning Model to Predict the Admission Status of Emergency Patients. *Expert Systems With Applications*, 202, 117314. DOI: 10.1016/j.eswa.2022.117314

Hamasha, M.**, **Ali, H.** **, Hamasha, S., & Ahmed, A. (2022). Ultra-fine transformation of data for normality. *Heliyon, 8*(5), e09370. DOI: 10.1016/j.heliyon.2022.e09370

Hamasha, M.**, Ahmed, A., **Ali, H.**, Hamasha, S., & Aqlan, F. (2022). An Approximation to the Inverse of Left-Side Truncated Gaussian Cumulative Normal Density Function Used to Generate Random Variates for Simulation Applications. *Journal of Applied Engineering Science*, *20*(2), 582-589. DOI: 10.5937/jaes0-35413

Cole, A.*, **Ali, H.**, Ahmed, A., Hamasha, M., & Jordan, S. (2021). Identifying Patterns of Turnover Intention Among Alabama Frontline Nurses in Hospital Settings During the COVID-19 Pandemic. *The Journal of Multidisciplinar Healthcare*, *14*, 1783-1794. DOI: 10.2147/JMDH.S308397.

Ali, H., Ahmed, A., & Astin, C.* (2021). Nurses' Perception of the Use of Communicative Technologies in Nursing Homes: A Survey Instrument Development. *International Journal of Older People Nursing, 16*(6), e12404. DOI: 10.1111/opn.12404.

Hamasha, M.**, **Ali, H.**, Hamasha, S., & Ahmed, A. (2021). A Mathematical Approximation to Left-Sided Truncated Normal Distribution Based on Hart's Model. *The Journal of Applied Engineering Science, 19*(4), 1049-1055. DOI: 10.5937/jaes0-29895

Ali, H., Cole, A.*, Ahmed, A., Hamasha, H., & Panos, G.* (2020). Major Stressors and Coping Strategies of Frontline Nursing Staff During the Outbreak of Coronavirus Disease (COVID-19) in Alabama. *The Journal of Multidisciplinary Healthcare*, *13*, 2057-2068. DOI: 10.2147/JMDH.S285933.

Ali, H., Cole, A.*, Sienkiewicz, A.*, Rosene, S.*, Shaffer, R.*, Thames, O.*, & Ho, T.* (2020). Obtaining Children's Experiences: A Systematic Review on the Patient-Reported Outcome Measures for Hospitalized Children. *Patient Experience Journal*, *7*(3), 9. DOI: 10.35680/2372-0247.1420.

Ahmed, A.**, & **Ali, H.** (2020). Modeling Patient Preference in an Operating Room Scheduling Problem. *Operations Research for Health Care*, *25*. DOI: 10.1016/j.orhc.2020.100257.

Ali, H., Cole, A.*, Sienkiewicz, A.*, & Ho, T.* (2020). Perceptions of Nursing Home's Staff towards the Nature of Call Light System. *Sage Open Nursing*, *6, 1-12*. DOI: 10.1177/2377960820903546.

Alathamneh, R.*, Bani Hani, D.*, **Ali, H.**, & Hamasha, S.** (2020). Fatigue Life Degradation Modeling of SnAgCu Solder Joints after Aging. *IEEE CPMT*, *10*(7), 1175 – 1184. DOI: 10.1109/TCPMT.2020.3000355.

Ali, H., & Li, H. (2020). Use of Notification and Communication Technology (Call Light Systems) in Nursing Homes: Observational Study. *Journal of Medical Internet Research*, *22*(3): e16252. DOI: 10.2196/16252.

Alathamneh, R.*, Bani Hani, D.*, **Ali, H.,** & Hamasha, S.** (2019). Reliability Modeling for Aged SAC305 Solder Joints Cycled in Accelerated Shear Fatigue Test. *Microelectronics Reliability*, *14*. DOI: 10.1016/j.microrel.2019.113507.

Ali, H., & Li, H. (2019). Evaluating a Smartwatch Notification System in a Simulated Nursing Home. *International Journal of Older People Nursing*, *14*(3). DOI: 10.1111/opn.12241.

Hamasha, S.**, Akkara, F.*, Su, S.*, **Ali, H.**, & Borgesen, P. (2018). Effect of Cycling Amplitude Variations on SnAgCu Solder Joint Fatigue Life. *IEEE Transactions on Components, Packaging and Manufacturing Technology*, *8*(11). DOI: 10.1109/TCPMT.2018.2795347.

Book Chapters (**corresponding author, *students)

Ali, H., Cole, A.*, & Panos, G.* (2020). "Transforming Patient Hospital Experience through Smart Technologies." In Marcus, A., & Rosenzweig, E. (Eds.), *Design, User Experience, and Usability. Case Studies in Public and Personal Interactive Systems*. New York: **Springer** Publishing Company.

Ali, H., & Li, H.** (2016). "Designing a Smart Watch Interface for a Notification and Communication System for Nursing Homes." In Zhou, J., & Salvendy, G. (Eds.), *Human Aspects of IT for the Aged Population. Design for Aging*. New York: **Springer** Publishing Company.

Journal Publications Under Review/In Development (**corresponding author, *students)

Ali, H., Ahmed, A.**, Olivos, C.*, Khamis, K.*, & Liu, J. (Submitted, 2022). Mitigating Urinary Incontinence Condition Using Machine Learning.

Cole, A.*, **Ali, H.**, & Ahmed, A. (To be submitted, 2022). Examining the Effects of Area Racism and Religiosity or Black Birth Outcomes.

Ali, H, Fatemi, Y., & undergraduate students (To be submitted, 2023). Evaluating Users' Perceptions of a Simulated Smart Patients' Room.

New Projects (*students)

Haneen Ali (PI), Tiffani Chidume, & Yasin Fatemi*. Investigating and Identifying Significant Factors Affecting the Single Shift Quality (SSQ) of Nursing Students. (Progress: IRB submitted)

Haneen Ali (PI), Rich Sesek, LuAnn Carpenter, & Yasin Fatemi*. Workplace Bullying in Academia: The Case of ISE Programs in the United States. (Progress: IRB will be submitted 2022)

Refereed Conference Publications (**corresponding author, *students)

Ahmed, A. **, Ashour, O., **Ali, H.**, & Fatemi, Y. (2022). Predict Patient Admission Status Using Topic Modeling & XGBoost. In Proceedings of the IISE Annual Conference & Expo 2022. Orlando, FL.

Belhadi, M.*, Wei, X.*, Hamasha, S., & **Ali., H.** (2022). Reliability and IMC Layer Evolution of Homogenous Lead-Free Solder Joints During Thermal Cycling. In *Proceedings of the 2022 National Printed Circuit Board (IPC)*. San Diego, CA.

Akkara, F.*, Abueed, F.*, Belhadi, M.*, Wei, X.*, Hamasha, S., **Ali, H.**, Suhling, J., & Lall, P. (2020). Reliability of New SAC-Bi Solder Alloys in Thermal Cycling with Aging. In *Proceedings of the 2020 National Printed Circuit Board (IPC)*. San Diego, CA.

Ali, H., Cole, A.*, Sienkiewicz, A.*, Hossain, M.*, & Ho, T.* (2019). Developing an Interactive Survey Instrument to Capture Hospitalized Children's Experience. In *Proceedings of the Human Factors and Ergonomics Society's 63rd Annual Meeting*. Seattle, WA.

Jin, Z.**, Li, B., **Ali, H.,** & Li, H. (2017). A Wearable Sit-to-Stand Detection System Based on Angle Tracking and Lower Limb EMG. In *Proceedings of the 2017 Symposium on IEEE Signal processing in Medicine and Biology*. Philadelphia, PA.

Ali, H., Li, H., & Wong, J. (2017). Evaluating a Smartwatch-Based Notification System in a Simulated Nursing Home: The Method. In *Proceedings of the 2017 International Symposium on Human Factors and Ergonomics in Health Care*. New Orleans, LA: Human Factors and Ergonomics Society.

Ali, H., & Li, H.** (2016). Designing a Smart Watch Interface of Notification and Communication Systems for Nursing Homes. In *Proceedings of the 2016 International Conference on Human-Computer Interaction*. Toronto, Canada: HCI International.

Ali, H., & Li, H.** (2015). Developing a Fall Prevention System for Nursing Homes. In *Proceedings of the Human Factors and Ergonomics Society's 59th Annual Meeting*. Los Angeles, CA.

Li, H.**, & **Ali, H.** (2015). Human Factors Considerations in the Design of Falls Prevention Technologies for Nursing Homes: A Case Study. In *Proceedings of the 2015 Symposium on Human Factors and Ergonomics in Health Care*. Santa Monica, CA: Human Factors and Ergonomics Society.

Ali, H., Li, H.**, & Lisboa, P. (2015). Usability Analysis and Redesign of Infusion Pump User Interface. In *Proceedings of the 2015 Symposium on Human Factors and Ergonomics in Health Care*. Baltimore, MD: Human Factors and Ergonomics Society.

Technical Presentations (*students)

Ali, H. (2022). *Predict Patient Admission Status Using Topic Modeling & XGBoost*. The IISE Annual Conference & Expo 2022, May 21-24, Orlando, FL.

Ali, H. (2022). *Investigating Frontline Nurse Stress: Perception of Job Demands, Organizational Resources, and Social Support during the COVID-19 Pandemic*. The 13th International Conference on Applied Human Factors and Ergonomics, July 24-28, New York, NY.

Ali, H., Cole, A.*, & Panos, G.* (2020). *Transforming Patient Hospital Experience through Smart Technologies*. The 2020 Human-Computer Interaction Conference (HCI), July 19-24, Copenhagen, Denmark.

Ali, H., & Sienkiewicz, A.* (2019). *Developing an Interactive Survey Instrument to Capture Hospitalized Children's Experience*. The 63rd Annual HFES Meeting, Oct. 28-Nov. 1, Seattle, WA: Human Factors and Ergonomics Society.

Ali, A., Cole, A*., & Sienkiewicz, A.* (2019). *Perceptions of Nursing Home's Staff towards the Natural of Call Light System*. The 2019 Annual SMA Meeting, Oct 8-12, Norfolk, VA: Southern Management Association.

Ali, H., & Khamis, K.* (2018). *Statistical Model to Predict and Prevent the Occurrence of Urinary Incontinence*. The IISE Annual Conference & Expo, May19-22, Orlando, FL.

Ali, H. (2017). *Systems Engineering in Healthcare Delivery: Improving Patient Safety in Nursing Homes*. Industrial and Systems Engineering Department at Auburn University, INSY Graduate Seminar. March 1st, Auburn, AL.

Ali, H., & Li, H. (2017). *Smartwatch-Based Notification System for Nursing Homes*. The 2017 Healthcare Systems Process Improvement Conference, March 1-2, Orlando, FL.

Ali, H., Li, H., & Wong, J.* (2016). *Evaluating a Smartwatch-Based Notification System in a Simulated Nursing Home: The Method*. International Symposium on Human Factors and Ergonomics in Health Care. New Orleans, LA: Human Factors and Ergonomics Society, April 13-16, San Diego, CA.

Ali, H., & Li, H. (2015). *Human Factors Considerations in the Design of Falls Prevention Technologies for Nursing Homes: A Case Study*. The 2015 International Symposium on Human Factors and Ergonomics in Health Care: Improving the Outcomes, April 26-29, Baltimore, MD.

RESEARCH GRANTS

- "Transforming Patient Hospital Experience through Smart Technologies," Internal Grant **($25,000**). Auburn University, Spring 2020.
- "Hospitalized Children's Experience Measures," Summer Creative Research Grant (**$6,000**). College of Liberal Arts, Auburn University, June 2019.
- "Little Voices, Big Ideas: The Case of Hospitalized Children's Experience," Grant Writing Award (**$5,000**). College of Liberal Arts, Auburn University, June 2018.

AWARDS & HONORS

- "Statistical Model to Predict and Prevent the Occurrence of Urinary Incontinence/Say Goodbye to the Incontinence, Discomfort, and Embarrassment," Semester Release from Teaching Grant. CLA, Auburn University, Fall 2019.
- **Best Paper Award**. "Reliability and IMC Layer Evolution of Homogenous Lead-Free Solder Joints During Thermal Cycling." The 2022 National Printed Circuit Board (IPC). San Diego, CA.
- **Best Student Paper Award**. **"**Developing a Fall Prevention System for Nursing Homes." In *Proceedings of the Human Factors and Ergonomics Society's 59th Annual Meeting*. Los Angeles, CA: Human Factors and Ergonomics Society.
- **Alpha Pi Mu –** Industrial Engineering Honor Society. Binghamton, NY, Since 2013.

PROFESSIONAL MEMBERSHIPS

- Human Factors and Ergonomics Society (HFES)
- Institute of Industrial Engineers (IIE)
- Association of University Programs in Health Administration (AUPHA)
- INFORMS
- Society of Women in Engineering (SWE) – ProActive Network