

# SYED HASIB AKHTER FARUQUI

[www.shafnehal.com](http://www.shafnehal.com) | [shf006@shsu.edu](mailto:shf006@shsu.edu)

## APPOINTMENTS | SAM HOUSTON STATE UNIVERSITY, HUNTSVILLE, TX, USA

Assistant Professor  
Department of Engineering Technology  
September (Fall), 2023 – Present

## EDUCATION | NORTHWESTERN UNIVERSITY, CHICAGO, IL, USA

Post-Doctoral Research Associate/ Clinical Research Associate  
Department of Radiology (Feinberg School of Medicine)  
January (Spring), 2022 – August (Summer), 2023  
Advisor: Dr. Donald R. Cantrell

## UNIVERSITY OF TEXAS AT SAN ANTONIO (UTSA), TEXAS, USA

Ph.D. in Mechanical Engineering  
Spring, 2017 - Fall, 2021  
Advisor: Dr. Adel Alaeddini

## UNIVERSITY OF TEXAS AT SAN ANTONIO (UTSA), TEXAS, USA

M.Sc. in Mechanical Engineering  
Fall, 2015 - Fall, 2016  
Advisor: Dr. Adel Alaeddini

## KHULNA UNIVERSITY OF ENGINEERING & TECHNOLOGY (KUET),

KHULNA, BANGLADESH  
B.Sc. in Mechanical Engineering  
2009-2013

## PUBLISHED MANUSCRIPTS

1. Chaochao Zhou, Dayeong An, **Syed Hasib Akhter Faruqui**, Abhinav Patel, Ramez N. Abdalla, Ali Shaibani, Sameer A. Ansari, Donald R. Cantrell, and NVQI-QOD Registry Investigators. "Probabilistic Ensemble Learning for Prediction of Stroke Thrombectomy Outcomes from the NeuroVascular Quality Initiative-Quality Outcomes Database (NVQI-QOD) Registry." *Journal of Stroke and Cerebrovascular Diseases* (2025): 108401.
2. Julian Carvajal Rico, Adel Alaeddini, **Syed Hasib Akhter Faruqui**, Susan P. Fisher-Hoch, and Joseph B. McCormick. "A Generative Framework for Predictive Modeling of Multiple Chronic Conditions Using Graph Variational Autoencoder and Bandit-Optimized Graph Neural Network." *IEEE Journal of Biomedical and Health Informatics* (2025).
3. Stanford Martinez, Carolina Ramirez-Tamayo, **Syed Hasib Akhter Faruqui**, Kal Clark, Adel Alaeddini, Nicholas Czarnek, Aarushi Aggarwal, Sahra Emamzadeh, Jeffrey R Mock, Edward J Golob, "Discrimination of Radiologists' Experience Level Using Eye-Tracking Technology and Machine Learning: Case Study", *JMIR Formative Research*, 9(1), e53928, (2025). DOI: [10.2196/53928](https://doi.org/10.2196/53928)
4. Chaochao Zhou, **Syed Hasib Akhter Faruqui**, Dayeong An, Abhinav Patel, Ramez N. Abdalla, Michael C. Hurley, Ali Shaibani et al. "Single-View Fluoroscopic X-Ray Pose Estimation: A Comparison of Alternative Loss Functions and Volumetric Scene Representations." *Journal of Imaging Informatics in Medicine* (2024): 1-13. DOI: [www.doi.org/10.1007/s10278-024-01354-w](https://www.doi.org/10.1007/s10278-024-01354-w)
5. Chaochao Zhou, Ramez N. Abdalla, Dayeong An, **Syed Hasib Akhter Faruqui**, Teymour Sadrieh, Mohayad Al Zein, Rayan Nehme, Ali Shaibani, Sameer A. Ansari, and Donald R. Cantrell. "Reducing Motion Artifacts in Craniocervical Background Subtraction Angiography with Deformable Registration and Unsupervised Deep Learning." *Radiology Advances* (2024): umae020. DOI: [www.doi.org/10.1093/radadv/umae020](https://www.doi.org/10.1093/radadv/umae020)
6. **Syed Hasib Akhter Faruqui**, Nazia Tasnim, Iftekhar Ibne Basith, Suleiman Obeidat, and Faruk Yildiz. "Integrating AI in Higher Education: Protocol for a Pilot Study with SAMCares: An Adaptive Learning Hub". *ASEE Annual 2024*. DOI: [www.doi.org/10.18260/1-2--47042](https://www.doi.org/10.18260/1-2--47042)

7. Julian Carvajal Rico, Adel Alaeddini, **Syed Hasib Akhter Faruqui**, Susan P. Fisher-Hoch, and Joseph B. McCormick. "A Laplacian regularized graph neural network for predictive modeling of multiple chronic conditions." *Computer Methods and Programs in Biomedicine* (2024): 108058. DOI: <https://doi.org/10.1016/j.cmpb.2024.108058>
8. Carolina Ramirez-Tamayo, **Syed Hasib Akhter Faruqui**, Stanford Martinez, Angel Brisco, Nicholas Czarnek, Adel Alaeddini, Jeffrey R. Mock, Edward J. Golob, and Kal L. Clark. "Incorporation of Eye-Tracking and Gaze Feedback to Characterize and Improve Radiologist Search Patterns of Chest X-rays: A Randomized Controlled Clinical Trial." *Journal of the American College of Radiology* (2024). DOI: <https://doi.org/10.1016/j.jacr.2024.02.001>
9. Donald R. Cantrell, Leon Cho, Chaochao Zhou, **Syed Hasib Akhter Faruqui**, Matthew B. Potts, Babak S. Jahromi, Ramez Abdalla, Ali Shaibani, and Sameer A. Ansari. "Background Subtraction Angiography with Deep Learning Using Multi-frame Spatiotemporal Angiographic Input." *Journal of Imaging Informatics in Medicine* (2024): 1-11. DOI: [www.doi.org/10.1007/s10278-023-00921-x](https://doi.org/10.1007/s10278-023-00921-x)
10. Angelica Fuentes, Vineeth Thirunavu, **Syed Hasib Akhter Faruqui**, Chaochao Zhou, Laura Stone McGuire, Xinjian Du, Dilip Pandey, Donald Cantrell, Sameer A. Ansari, and Sepideh Amin-Hanjani. "Evaluating outcome associations with race after mechanical thrombectomy: an analysis of the NVQI-QOD acute ischemic stroke registry." *Journal of NeuroInterventional Surgery* (2024). DOI: <https://doi.org/10.1136/jnis-2023-021208>
11. Mike C. Chang, **Syed Hasib Akhter Faruqui**, Adel Alaeddini, and Hung-da Wan. "Evaluation and improvement of student learning experience in the post-COVID world: A lean six-sigma DMAIC study." *International Journal of Mechanical Engineering Education* (2023). DOI: <https://doi.org/10.1177/03064190231192853>
12. Yan Du, Jing Wang, Shiyu Li, Brittany Dennis, Christiane Meireles, Nazishi Siddiqui, Darpan Patel, John Gelfond, Chengdong Li, **Syed Hasib Akhter Faruqui**, Adel Alaeddini, Viktor Drel, Jana Tumova, Hongping Ye, Richard Montellano, Gustavo Armaiz Pena, Kumar Sharma, "A Technology Assisted Precision Ketogenic Diet Intervention for Cardio-Renal-Metabolic Health in Overweight or Obese Adults: Protocol for a Randomized Controlled Trial", *Contemporary Clinical Trials*, 2022, 106845, ISSN 1551-7144. DOI: <https://doi.org/10.1016/j.cct.2022.106845>
13. Kiran Bhaganagar, Prasanna Kolar, Stanford Martinez, Daniel Brun, **Syed Hasib Akhter Faruqui**, Diganta Bhattacharjee, Adel Alaeddini and Kamesh Subbarao, "A Novel Machine-Learning Framework with a Moving Platform for Maritime Drift Calculations", *Frontiers in Marine Science*, section Ocean Observation, Mar. Sci 9 (2022): 831501. DOI: <https://doi.org/10.3389/fmars.2022.831501>
14. Yingyan Zeng, Parshin Shojaee, **Syed Hasib Akhter Faruqui**, Stanford Martinez, Adel Alaeddini, Ran Jin, "Contextual Bandit Guided Data Farming for Deep Neural Networks in Manufacturing Industrial Internet", 2022 IEEE 5th International Conference on Industrial Cyber-Physical Systems (ICPS), 2022, pp. 1-6. DOI: <https://doi.org/10.1109/ICPS51978.2022.9816900>
15. **Syed Hasib Akhter Faruqui**, Adel Alaeddini, Jing Wang, Susan P. Fisher-Hoch, and Joseph B. McCormick. "Dynamic Functional Continuous Time Bayesian Networks for Prediction and Monitoring of the Impact of Patients' Modifiable Lifestyle Behaviors on the Emergence of Multiple Chronic Conditions" in *IEEE Access*, vol. 9, pp. 169092-169106, 2021. DOI: <https://doi.org/10.1109/access.2021.3136618>
16. **Syed Hasib Akhter Faruqui**, Adel Alaeddini, Jing Wang, Susan P. Fisher-Hoch, and Joseph B. McCormick. "A Functional Model for Structure Learning and Parameter Estimation in Continuous Time Bayesian Network: An Application in Identifying Patterns of Multiple Chronic Conditions," in *IEEE Access*, vol. 9, pp. 148076-148089, 2021. DOI: <https://doi.org/10.1109/access.2021.3122912>
17. **Syed Hasib Akhter Faruqui**, Adel Alaeddini, Mike C. Chang, Sara Shirinkam, Carlos Jaramillo, Peyman NajafiRad, Jing Wang, and Mary Jo Pugh. "Summarizing Complex Graphical Models of Multiple Chronic Conditions Using the Second Eigenvalue of Graph Laplacian: Algorithm Development and Validation." *JMIR Medical Informatics* 8, no. 6 (2020): e16372. DOI: <https://doi.org/10.2196/16372>
18. **Syed Hasib Akhter Faruqui**, Yan Du, Rajitha Meka, Adel Alaeddini, Chengdong Li, Sara Shirinkam, Jing Wang, "Development of a Deep Learning Model for Dynamic Forecasting of Blood Glucose Level for Type 2 Diabetes Mellitus: Secondary Analysis of a Randomized Controlled Trial." *JMIR Mhealth Uhealth* 2019;7(11): e14452. DOI: <https://doi.org/10.2196/14452>

19. Adel Alaeddini, Jonathan E. Helm, Pengyi Shi, and **Syed Hasib Akhter Faruqui**. "An integrated framework for reducing hospital readmissions using risk trajectories characterization and discharge timing optimization." *IISE Transactions on Healthcare Systems Engineering* (2019): 1-14.  
DOI: <https://doi.org/10.1080/24725579.2019.1584133>
20. **Syed Hasib Akhter Faruqui**, Adel Alaeddini, Carlos A. Jaramillo, Jennifer S. Potter, and Mary Jo Pugh. "Mining patterns of comorbidity evolution in patients with multiple chronic conditions using unsupervised multi-level temporal Bayesian network." *PloS one* 13, no. 7 (2018): e0199768. DOI: <https://doi.org/10.1371/journal.pone.0199768>
21. Adel Alaeddini, Abed Motasemi, and **Syed Hasib Akhter Faruqui**. "A spatiotemporal outlier detection method based on partial least squares discriminant analysis and area Delaunay triangulation for image-based process monitoring." *IISE Transactions* 50, no. 2 (2018): 74-87. DOI: <https://doi.org/10.1080/24725854.2017.1386336>
22. Adel Alaeddini, Carlos A. Jaramillo, **Syed Hasib Akhter Faruqui**, and Mary J. Pugh. "Mining Major Transitions of Chronic Conditions in Patients with Multiple Chronic Conditions." *Methods of information in medicine* 56, no. 05 (2017): 391-400. DOI: <https://doi.org/10.3414/me16-01-0135>

#### MANUSCRIPTS UNDER REVIEW

1. **Syed Hasib Akhter Faruqui**, Adel Alaeddini, Jing Wang, Susan P. Fisher-Hoch, and Joseph B. McCormick, "A Model predictive control for self-monitoring and management for patients with Multiple Chronic Conditions based on Patient Lifestyle Behavioral Change" (Submitted for review in *Artificial Intelligence in Medicine*). (Pre-print: <https://arxiv.org/abs/2205.13639>)
2. **Syed Hasib Akhter Faruqui**, Adel Alaeddini, Yan Du, Shiyu Li, Kumar Sharma, Jing Wang, "Syed Hasib Akhter Faruqui, Shiyu Li, Yan Du, Adel Alaeddini, Jing Wang, "An Expert-in-the-Loop Control Methodology Utilizing Transfer-Learned Predictive Twin to Assist Patients with Type 2 Diabetes Mellitus (T2DM) in a Live Clinical Trial: A Proof of Concept." (Submitted for Review in *JMIR mHealth and uHealth*) (Pre-print: <https://arxiv.org/abs/2401.02661>).
3. Suleiman Obeidat, Rakib Hasan, **Syed Hasib Akhter Faruqui**, "Developing Machine Learning Algorithm for Investigating Features Affecting Relative Density and Shrinkage of Printed Parts in Binder Jetting Additive Manufacturing of Ceramic Composite Powder." (Submitted for Review in Progress in *Additive Manufacturing*)
4. Rahagir Ridwan Anik, **Syed Hasib Akhter Faruqui**, Suleiman Obeidat, "Investigation of the Electrolytes' Ionic and Electrical Conductivity of the Solid State Batteries using Binder Jetting Additive Manufacturing Technology: A Systematic Literature Review" (Submitted for Review in *The International Journal of Advanced Manufacturing Technology*).

#### MANUSCRIPTS UNDER PREPARATION

1. **Syed Hasib Akhter Faruqui**, Donald R. Cantrell, Sameer A Ansari, Leon Cho, "Separating Artery Layers in Low-Latency Cardiac MRIs for Generating Data to Train Deep Segmentation Networks"
2. **Syed Hasib Akhter Faruqui**, Stanford Martinez, Carolina Ramirez-Tamayo, Kal L. Clark, Adel Alaeddini, "Trac-Geneity: **Tracking Homogeneity** in Gaze Search Patterns using One-shot Contrastive Learning in Scanning Chest X-rays".
3. Rakib Hasan, Hung-da Wan, Kazi Masum Billah, **Syed Hasib Akhter Faruqui**, "Uncertainty-Aware Digital Twin Manufacturing: A Reinforcement Learning Approach to Robust Production Scheduling"

#### CONFERENCE PRESENTATION/ PUBLICATION

1. Rakib Hasan, Hung-da Wan, Kazi Masum Billah, **Syed Hasib Akhter Faruqui**, Uncertainty-Aware Digital Twin Manufacturing: A Q-Learning Approach to Robust Production Scheduling, *INFORMS Annual Meeting*, GA (2025). **Accepted for presentation.**
2. Iftekhar Ibne Basith, **Syed Hasib Akhter Faruqui**, Ali Dinc, Joice Hill, Emma Elizabeth Robles, Addym Paul Jackson, and Francis Coker. "Design of a Micro Class Airplane for SAE 2024 Competition: Fostering Engineering Self-Efficacy and Collaboration in Capstone Education." In *2025 ASEE Annual Conference & Exposition*. 2025.
3. Kazi Md Masum Billah, Adam Kennedy, Jeffrey Gleasman, and **Syed Hasib Akhter Faruqui**. "Fracture Toughness of 3D Printed Metal Wire Composites." In *ASME Aerospace Structures, Structural Dynamics, and Materials Conference*, vol. 88759,

p. V001T01A024. American Society of Mechanical Engineers, 2025. DOI: <https://doi.org/10.1115/SSDM2025-152575>

4. D. An, C. Zhou, **Syed Hasib Akhter Faruqui**, R. Abdalla, A. Shaibani, S. Ansari, and D. Cantrell. "Prediction of acute ischemic stroke outcomes using probabilistic modeling from the neurovascular quality initiative-quality outcomes database (NVQI-QOD) registry." (2025): A268-A268.
5. Iftekhhar Ibne Basith, Suleiman Obeidat, **Syed Hasib Akhter Faruqui**, Ulan Dakeev, and Joe Nervis, "BYOE: SeaKatz 2.0 – Vision and Pneumatic Claw for Underwater Robot with VR Simulation", published in the ASEE Annual Conference and Exposition, June 23 - 26, Portland, OR, 2024.
6. Julian Carvajal Rico, Adel Alaeddini, **Syed Hasib Akhter Faruqui**, Optimizing Graph Representations with Generative Models for Predicting Multiple Chronic Conditions, INFORMS Annual Meeting, Seattle, WA (2024).
7. Chaochao Zhou, **Syed Hasib Akhter Faruqui**, Abhinav Patel, Ramez Abdalla, Ali Shaibani, Matthew Potts, Babak Jahromi, Sameer Ansari, Donald Cantrell, Probabilistic Ensemble Learning for Prediction of Stroke Thrombectomy Outcomes from the Neurovascular Quality Initiative - Quality Outcomes Database (NVQI-QoD) Registry., INFORMS Annual Meeting, Phoenix, Arizona (2023).
8. Abhinav Patel, Ramez N Abdalla, Chaochao Zhou, **Syed Hasib Akhter Faruqui**, J Moore, Matthew B Potts, Babak S Jahromi, V Rayz, M Markl, T Carroll, Donald R Cantrell, Sameer A Ansari, "Early vs Delayed Change in Aneurysm Wall Enhancement and intracranial Structures on High Resolution MR Vessel Wall Imaging", ASNR Annual Conference (2023).
9. Abhinav Patel, **Syed Hasib Akhter Faruqui**, Ramez N Abdalla, A Malik, Chaochao Zhou, J Moore, Babak S Jahromi, Matthew B Potts, A Shaibani, V Rayz, M Markl, T Carroll, Donald R Cantrell, Sameer A Ansari, "Correlation of Quantified Aneurysm Wall Enhancement MR-VWI with ELAPSS Score for Evaluation of Unruptured intracranial Aneurysms", ASNR Annual Conference (2023).
10. **Syed Hasib Akhter Faruqui**, Abhinav Patel, Chaochao Zhou, Ramez N Abdalla, Matthew B Potts, Babak S Jahromi, V Rayz, M Markl, T Carroll, A Shaibani, Sameer A Ansari, Donald R Cantrell, "Identifying Predictors of Intracranial Aneurysm Wall Enhancement and Associated Rupture Risk using Bayesian Network Analysis", ASNR Annual Conference (2023).
11. **Syed Hasib Akhter Faruqui**, Chaochao Zhou, Abhinav Patel, Ramez N Abdalla, Matthew B Potts, A Shaibani, Sameer A Ansari, Donald R Cantrell, "Transparent Arterial Layer Separation in Cardiac Angiography with Self-Supervised Deep Learning", IISE Annual Conference (2023).
12. **Syed Hasib Akhter Faruqui**, Stanford Martinez, Carolina Ramirez-Tamayo, Kal L. Clark, Adel Alaeddini, "**TracGeneity: Tracking Homogeneity** in Gaze Search Patterns using Contrastive Learning in Scanning Chest X-rays", IISE Annual Conference (2023).
13. Julian Carvajal Rico, **Syed Hasib Akhter Faruqui**, Adel Alaeddini, "A Generative Model for Improving Graph Structure and Representation from Electronic Health Records", IISE Annual Conference (2023).
14. Carolina Ramirez-Tamayo, **Syed Hasib Akhter Faruqui**, Stanford Martinez, Kal L. Clark, Adel Alaeddini, Nicholas Czarnek, Aarushi Aggarwal, Sahra Emamzadeh, Jeffrey R. Mock, Edward J. Golob, "A Feedback-Driven Educational Framework to Characterize and Improve Radiologists Search Patterns of Chest X-rays", IISE Annual Conference (2023).
15. **Syed Hasib Akhter Faruqui**, Shiyu Li, Yan Du, Brittany Dennis, Chengdong Li, Jing Wang, Adel Alaeddini, "Utilizing Digital Twins to Develop Semi-supervised online Control Model for Self-monitoring and Management of Patients with Type 2 Diabetes Mellitus" INFORMS Annual Meeting, Indianapolis, Indiana (2022).
16. Stanford Martinez, Carolina Ramirez-Tamayo, **Syed Hasib Akhter Faruqui**, Kal L. Clark, Adel Alaeddini, Nicholas Czarnek, Aarushi Aggarwal, Sahra Emamzadeh, Jeffrey R. Mock, Edward J. Golob, "Identifying the Experience Level of Radiologists Utilizing Eye-Tracking Technology and Machine Learning". IISE Annual Conference 2022.
17. **Syed Hasib Akhter Faruqui**, Adel Alaeddini, Jing Wang, "A Dynamic Model predictive control for self-monitoring and management for patients with Multiple Chronic Conditions based on Patient Lifestyle Behavioral Change", INFORMS Annual Meeting, Anaheim, California (2021).



18. **Syed Hasib Akhter Faruqui**, Hamed Bouzary, Soriful Alam, Adel Alaeddini, F. Frank Chen, "3D Object Detection for Streamlining Production Processes in a Cloud Manufacturing Infrastructure", IISE Annual Conference (Virtual) 2021.
19. **Syed Hasib Akhter Faruqui**, Adel Alaeddini, Jing Wang, "Utilizing Digital Twins to Develop Unsupervised Control Model for Self-monitoring And Management of Type 2 Diabetes Mellitus", INFORMS Annual (Virtual) 2020.
20. **Syed Hasib Akhter Faruqui**, Adel Alaeddini, Jing Wang, "An Extended Kalman Filter for Dynamic Prediction and Detection of Risk of Multiple Chronic Conditions Based on Patient Lifestyle Behavioral Changes", INFORMS Annual (Virtual) 2020.
21. **Syed Hasib Akhter Faruqui**, Rajitha Meka, Adel Alaeddini, Jing Wang, "A Reinforcement Learning Framework for Behavioral Management of Type-2-Diabetes-Mellitus Patients", IISE Annual Conference (Virtual) 2020.
22. **Syed Hasib Akhter Faruqui**, Adel Alaeddini, Carlos A. Jaramillo, Mary Jo Pugh, "An Active Learning Framework for Learning and Summarizing Healthcare Networks", IISE Annual Conference, Orlando, FI (2019).
23. **Syed Hasib Akhter Faruqui**, Rajitha Meka, Adel Alaeddini, Jing Wang, "Dynamic Forecasting and Control of Diabetes Using Mobile-Based Health-Lifestyle Data", IISE Annual Conference, Orlando, FI (2019).
24. **Syed Hasib Akhter Faruqui**, Adel Alaeddini, Carlos A. Jaramillo, Mary Jo Pugh, "A Continuous Time Bayesian Network Model for Identifying Patterns of Multiple Chronic Conditions", INFORMS Annual Meeting, Phoenix, Az (2018).
25. **Syed Hasib Akhter Faruqui**, Adel Alaeddini, Carlos A. Jaramillo, Mary Jo Pugh, "A Continuous Time Bayesian Network for Learning the Evolution of Multiple Chronic Conditions", The Fourth Annual San Antonio Military Health System and Universities Research Forum (SURF), San Antonio, Tx (2018).
26. **Syed Hasib Akhter Faruqui**, Adel Alaeddini, Carlos A. Jaramillo, Mary Jo Pugh, "Learning the Evolution of Multiple Chronic Conditions using Bayesian Networks", IISE Annual Conference, Orlando, FI (2018).
27. **Syed Hasib Akhter Faruqui**, Adel Alaeddini, Carlos A. Jaramillo, Mary Jo Pugh, Sara Shirinkam, "Eigen Analysis of Graph Laplacian for Summarizing Bayesian Networks", IISE Annual Conference, Orlando, FI (2018).
28. **Syed Hasib Akhter Faruqui**, Adel Alaeddini, Carlos A. Jaramillo, Mary Jo Pugh, "Analyzing Patterns of Multiple Chronic Conditions and their Associated Behavior in Temporal Direction using Multi-level Temporal Bayesian Network", INFORMS Annual Meeting, Houston, Tx (2017).
29. **Syed Hasib Akhter Faruqui**, Adel Alaeddini, Carlos A. Jaramillo, Mary Jo Pugh, "Temporal Abstraction of Multiple Chronic Conditions Using Hierarchical Multi-Level Temporal Bayesian Network", IISE Annual Conference, Pittsburgh, PA (2017).

## POSTER PRESENTATION

\* Undergraduate Student <sup>T</sup> Graduate Student

1. Ethan Wingfield\*, Hayden Behrens\*, Helen Gomez\*, Iftekhar Ibne Basith, **Syed Hasib Akhter Faruqui**, "Gait Analysis using Multivariate Extended Kalman Filter to Improve Patient Care", poster presented in the National Conference on Undergraduate Research (NCUR), 2025, April 7 - April 9, Pittsburg, PA, 2025.
2. Hayden Behrens\*, Iftekhar Ibne Basith, **Syed Hasib Akhter Faruqui**, "Camera-Based Gait Analysis using a Machine Learning Approach to Improve Patient Care", SHSU Undergraduate Research Symposium, April 12<sup>th</sup>, 2025.
3. Euijin Yang, Iftekhar Ibne Basith, **Syed Hasib Akhter Faruqui**, and Minjae Suh, "Developing Future Constructors: STEM Summer Camps in Construction and Safety", poster presented in the 2024 ATMAE Annual Conference, October 28-31, Las Vegas, NV, 2024 (**Won Best Poster Award!**).
4. Iftekhar Ibne Basith, Suleiman Obeidat, Vajih Khan, Ulan Dakeev, Michelle Boyd, **Syed Hasib Akhter Faruqui**, and Euijin Yang, "Bearthat STEM Summer Camp on Automation & Robotics", poster presented in the 2024 ATMAE Annual Conference, October 28-31, Las Vegas, NV, 2024.
5. **Syed Hasib Akhter Faruqui**, Nazia Tasnim, Iftekhar Ibne Basith, Suleiman Obeidat, and Faruk Yildiz. "Integrating AI in Higher Education: Protocol for a Pilot Study with 'SAMCares: An Adaptive Learning Hub', ASEE Annual 2024.
6. Chaochao Zhou, **Syed Hasib Akhter Faruqui**, Abhinav Patel, Ramez N Abdalla, Ali Shaibani, Matthew B Potts, Babak S Jahromi, Sameer A Ansari, Donald R Cantrell, "Prediction of Stroke Thrombectomy Outcomes from The Neurovascular Quality

Initiative-quality Outcomes Database (NVQI-QOD) Registry Using Probabilistic Learning Models”, International Stroke Conference 2023, Stroke 54, no. Suppl\_1 (2023): AWP94-AWP94.

7. Stanford Martinez, Carolina Ramirez-Tamayo, **Syed Hasib Akhter Faruqui**, Kal L. Clark, Adel Alaeddini, Nicholas Czarnek, Aarushi Aggarwal, Sahra Emamzadeh, Jeffrey R. Mock, Edward J. Golob, “Identifying the Experience Level of Radiologists Utilizing Eye-Tracking Technology and Machine Learning”. CAMLS session 2021, UTSA.
8. **Syed Hasib Akhter Faruqui**, Adel Alaeddini, Jing Wang, Susan P. Fisher-Hoch, and Joseph B. McCormick. “Nonlinear State Space Modeling and Control of the Impact of Patient's Modifiable Lifestyle Behaviors on the Emergence of Multiple Chronic Conditions”, IISE Annual Conference (Virtual) 2021. (**Runner-Up, IISE QCRE & DAIS Track Best Student Poster Award**).
9. Chi Wen Chang, Stanford Martinez, **Syed Hasib Akhter Faruqui**, Adel Alaeddini, “A Zone Based Indoor RFID System for Real-Time Personnel Location Tracking”, IISE Annual Conference (Virtual) 2020.
10. **Syed Hasib Akhter Faruqui**, Adel Alaeddini, Carlos Jaramillo, & Mary Jo Pugh, “A Functional Model for Structure Learning and Parameter Estimation in Continuous Time Bayesian Network: An Application in Identifying Patterns of Multiple Chronic Conditions”, INFORMS Annual Conference, Seattle, WA (2019).
11. **Syed Hasib Akhter Faruqui**, Adel Alaeddini, Chi-Wen Chang, Sara Shirinkam & Carlos Jaramillo, Learning and Summarizing Graphical Models using Eigen Analysis of Graph Laplacian: An Application in Analysis of Multiple Chronic Conditions”, IISE Annual Conference, Orlando, FL (2019).
12. Adel Alaeddini, **Syed Hasib Akhter Faruqui**, Jing Wang, “Using Machine Learning Methods for Dynamic Forecasting and Control of Type 2 Diabetes Using Mobile-Based Health Lifestyle Data”.

#### CURRENT/PAST AWARDED GRANTS

1. **Title:** Leveraging 3D Animation Technology and Large Language Models for Enhanced Agricultural Literacy (**Co-PI**)  
**Funding Organization:** USDA-APHIS  
**Total Requested Amount:** \$67,644  
**Status:** **Funded!**  
**Date:** June, 1<sup>st</sup> 2025 – Continue
2. **Title:** Leveraging Physics-Informed Neural Networks for Design Validation (**Co-PI**)  
**Funding Organization:** SHSU-ORSP  
**Total Requested Amount:** \$24,404  
**Status:** **Funded!**  
**Date:** June, 1<sup>st</sup> 2025 – December, 31<sup>st</sup> 2025
3. **Title:** Edge Device Enabled Sensor Fusion for Multi-Modal Analysis: A Machine Learning Approach (**PI**)  
**Co-PI:** Iftekhar Ibne Basith  
**Funding Organization:** SHSU-ORSP (Pilot Studies for Future Funding Program)  
**Total Requested Amount:** \$10,000  
**Status:** **Completed!**  
**Date:** May, 15<sup>th</sup> 2024 – May, 15<sup>th</sup>, 2025
4. **Title:** Labelling Cardiac X-Ray Images for A.I. Training (**PI**)  
**Co-PI:** Iftekhar Ibne Basith  
**Funding Organization:** SHSU, College of Osteopathic Medicine, Medical Summer Scholars Program  
**Total Requested Amount:** \$2,500  
**Status:** **Completed!**  
**Date:** May, 28 – July, 19, 2024

**GRANTS UNDER  
EVALUATION  
(PENDING)**

**Year: 2025**

1. **Title:** TrustworthyAI: From Ground Truth Generation to Continuous Performance Optimization **(Co-PI)**  
**Funding Organization:** ARPA-H  
**Total Requested Amount:** \$11,169,676  
**Status:** [Under Review!](#)
2. **Title:** Smart and Connected Health Consortium (SCHC): Advancing AI-Driven Healthcare Research and Education at SHSU **(PI)**  
**Funding Organization:** SHSU-ORSP (BRIDGE Program)  
**Total Requested Amount:** \$249,860  
**Status:** [Under Review!](#)
3. **Title:** Transportation Consortium for Smart Cities **(Co-PI)**  
**Funding Organization:** SHSU-ORSP (BRIDGE Program)  
**Total Requested Amount:** \$250,000  
**Status:** [Under Review!](#)
4. **Title:** Develop Evaluations and Benchmarks for Assessing Chemical and Biological Capabilities of AI Models (Chem-Bio Model Evaluation) **(Co-PI)**  
**Funding Organization:** NIST  
**Total Requested Amount:** \$172,494  
**Status:** [Under Review!](#)
5. **Title:** ([Renewal](#)) Leveraging 3D Animation Technology and Large Language Models for Enhanced Agricultural Literacy **(PI)**  
**Funding Organization:** USDA  
**Total Requested Amount:** \$67,492  
**Status:** [Under Review!](#)
6. **Title:** Deployment and Field Testing of Aerial Remote Sensing Systems for Detection of ALB Host Trees in Quarantine Areas **(Co-PI)**  
**Funding Organization:** USDA  
**Total Requested Amount:** \$104,363  
**Status:** [Under Review!](#)
7. **Title:** Energy-Harvesting IoT System for Smart and Sustainable Pest Management in Precision Agriculture **(Co-PI)**  
**Funding Organization:** USDA  
**Total Requested Amount:** \$31,554  
**Status:** [Under Review!](#)
8. **Title:** Modular 3D-Printed AI Activated Traps for Targeted Control of *Maruca vitrata* and *Sogatella furcifera* **(PI)**  
**Funding Organization:** USDA  
**Total Requested Amount:** \$98,242  
**Status:** [Under Review!](#)
9. **Title:** REU Site: Undergraduate Research Experience in Advanced Manufacturing Ecosystem **(PI)**  
**Funding Organization:** NSF  
**Total Requested Amount:** \$551,121  
**Status:** [Under Review!](#)

**RESEARCH  
PROJECTS**

1. Developing a Data-Driven Technology towards improved Leeway Divergence Prediction (US Coastal Guard: March 2020 – May 2021)
2. Alignment and Analysis of Off-shore Oil and Gas Rig Sensor Data (Company: Schlumberger: March 2020 – December 2020).
3. A Novel Probabilistic Methodology for Prediction of Emerging Diseases in Patients with Multiple Chronic Conditions (National Institute of Health, Project Number: 1SC2GM118266-01).

4. Predicting and Explaining Workplace Safety Incidents using Data Mining Techniques (Andeavor: 07/07/2018 – 12/30/2018).

#### **CLASS PROJECTS**

1. Improving Process Efficiency through Value Stream Mapping: A Case Study of an Insight Driven, Multi-Channel Advertising Mass Distributor (Velasis: 09/05/2017 – 12/07/2017).
2. Optimization of Wind Turbine Disturbance Using Design of Experiments Methodology.
3. Project Management: Scheduling Expedited Time-Cost using Linear Programming.

#### **THESIS**

1. Learning and Summarization of Complex and Large Datasets with Graphical Models: An Application in Healthcare Data Analytics (Ph.D. Thesis)
2. A Temporal Bayesian Network for Modeling the Temporal Relation Among Multiple Chronic Conditions (M.Sc. Thesis).
3. Numerical Investigation of Aerodynamic Characteristics for Flow Over a Car. (Undergraduate Thesis).

#### **ACADEMIC EXPERIENCE**

##### **Graduate Research Assistant**

The University of Texas at San Antonio, San Antonio, Texas-78249  
Jan 2016 – December 2021

**Research Advisor:** Dr. Adel Alaeddini

##### **Graduate Teaching Assistant**

The University of Texas at San Antonio, San Antonio, Texas-78249

##### **Period:**

- a) Spring 2017: ME1403: Engineering Practice and Graphics  
**Course Material:** [https://www.shafnehal.com/courses/spring\\_2017/lecture\\_notes](https://www.shafnehal.com/courses/spring_2017/lecture_notes)
- b) Fall 2017: ME1403: Engineering Practice and Graphics  
**Course Material:** [https://www.shafnehal.com/courses/fall\\_2017/lecture\\_notes](https://www.shafnehal.com/courses/fall_2017/lecture_notes)
- c) Spring 2018: ME1403: Engineering Practice and Graphics  
**Course Material:** [https://www.shafnehal.com/courses/spring\\_2018/lecture\\_notes](https://www.shafnehal.com/courses/spring_2018/lecture_notes)
- d) Fall 2018: ME1403: Engineering Practice and Graphics  
**Course Material:** [https://www.shafnehal.com/courses/fall\\_2018/lecture\\_notes](https://www.shafnehal.com/courses/fall_2018/lecture_notes)
- e) Fall 2019: ME 6543: Machine Learning & Data Analytics  
**Course Material:** [http://www.shafnehal.com/courses/fall\\_2019/lecture\\_notes](http://www.shafnehal.com/courses/fall_2019/lecture_notes)
- f) Spring 2020: ME 3241: Materials Engineering Lab
- g) Fall 2020: ME 6543: Machine Learning & Data Analytics (Online)
- h) Spring 2021: ME 6973: SP: Introduction to Deep Learning
- i) Fall 2021: ME 6543: Machine Learning & Data Analytics (Online)

##### **Assistant Professor**

Sam Houston State University, Huntsville, Texas

##### **Courses:**

- a) **ETDD 1361:** Engineering Graphics (Fall 2023-24; Spring 2024-25)
- b) **ETDD 4380:** Material Handling and Plant Layout (Fall 2023-25; Spring 2025)
- c) **ETDD 4388:** 3D Parametric Design (Spring 2024-25; Summer 2024-25; Fall 2024-25)



## JOB EXPERIENCE

### Maks Inc

Research Engineer

August 2<sup>nd</sup>, 2014, to July 15<sup>th</sup>, 2015

#### Tasks Performed:

1. Reviewed and created draft drawings according to need.
2. Created draft designs according to need.
3. Estimated product order based on design, BOM, etc.
4. Estimated FAF provisional for a port to port/ state to state supply of waterborne.
5. Estimated FAF provisional for a port to the port/ state to state supply of pipeline products.

### BFP Engineers Ltd.

Assistant Design Engineer

February 16<sup>th</sup>, 2014, to May 31<sup>st</sup>, 2014

#### Tasks Performed:

1. Created turbine blade profiles from 3D scanned used blades for analyzing corrosion due to excessive use and saltation to take mitigating measures.
2. Drafting pipeline plans of a chemical plant.
3. Mapped and drafted new pipeline routes for existing plants.

## AWARDS & SCHOLARSHIPS

1. UTSA Graduate School (Klesse College of Engineering and Integrated Design) Outstanding Ph.D. Dissertation Award, 2022
2. UTSA Graduate Student Professional Development Award, 2017 - 2020
3. Outstanding Graduate Student (College of Engineering), UTSA Annual University Life Awards, 2020
4. Dhaka (Bangladesh) Board Education Scholarship, 2009 – 2013

## SKILLS & ABILITIES

**Database Languages:** SQL

**Programming Language:** MATLAB, Python, R, FORTRAN

**CAD Software:** AutoCAD, Autodesk Inventor, Inventor Fusion, Solidworks, PDMS

**Simulation Software:** ANSYS, Fluent, Gambit (Meshing), AMPL, Minitab

## SERVICE ACTIVITIES

### 1. Board of Directors:

- a. IISE Data Analytics & Information Systems (DAIS) Board Member 2025 – 2027.
- b. IISE Quality Control and Reliability Engineering (QCRE) Board Member 2023 – 2025.
- c. IISE Body of Knowledge (BOK) Liaison for QCRE Division, 2023 – 2024.

### 2. Conference and Symposiums:

#### a. Competition Chair:

- i. *Best Student Track Competition*, Quality Control and Reliability Engineering Division, IISE Annual Conference 2025, Georgia, GA
- ii. *Student Data Challenge*, Quality Control and Reliability Engineering Division, IISE Annual Conference 2025, Montreal, Canada
- iii. *Best Track Paper Competition*, Quality Control and Reliability Engineering Division, IISE Annual Conference 2024, Montreal, Canada
- iv. *Best Student Track Competition*, Quality Control and Reliability Engineering Division, IISE Annual Conference 2024, Montreal, Canada

#### b. Reviewer, Competition Reviewer & Judge:

- i. 2025 INFORMS Data Mining Best Paper Competition, INFORMS Annual Conference, 2025, GA.
- ii. 2025 INFORMS Data Mining Best Student Paper Competition, INFORMS Annual Conference, 2025, GA.
- iii. 2024 INFORMS Data Mining Best Paper Competition, INFORMS Annual Conference, 2024, Seattle, WA.
- iv. 2024 INFORMS QSR Best Paper Competition, INFORMS Annual Conference, 2024, Seattle, WA.

- v. 9th North American Conference in Industrial Engineering and Operations Management, Washington, DC, USA, June 4-6, 2024
- vi. 14th Annual International Conference on Industrial Engineering and Operations Management in Dubai, UAE, February 12-14, 2024.
- vii. Reviewer: DAIS Workshop, Best Student Paper Competition (Application Track), INFORMS Annual Meeting 2023, Phoenix, Az.
- viii. Reviewer & Judge: DAIS Workshop, Best Student Paper Competition (Application Track), INFORMS Annual Meeting 2022, Indianapolis, IN.

c. **Track Chair:**

- i. Data Analytics & Information Systems (DAIS), IISE Annual Conference 2026, Dallas, Tx
- ii. Quality Control and Reliability Engineering Division, IISE Annual Conference 2024, Montreal, Canada

d. **Session Chair (& Co-chair):**

- i. Invited Track: Predictive Analysis in Medical Care, INFORMS Annual Meeting, 2023, Phoenix, Arizona
- ii. QCRE Invited Track: Disease Predictive Modeling and Control, IISE Annual Conference 2019, Orlando, FL (2019)

3. **Journal Referee and Review Experience:**

- a. IIE Transactions on Healthcare Systems Engineering (Since 2018)
- b. PlosOne (Since 2018)
- c. Addictive Behaviors, Elsevier (Since 2020)
- d. Journal of Applied Statistics (Since 2020)
- e. JMIR (and its sister journals) (Since 2021)
- f. IEEE Transactions on Pattern Analysis and Machine Intelligence (Since 2022)
- g. Frontiers in Public Health (Since 2022)
- h. IEEE Transactions on Automation Science and Engineering (Since 2023)

4. **Workshop:**

- a. UTSA COE/CACP Workshop: Advanced SolidWorks ([Materials](#)) (Spring 2021)
- b. UTSA COE/CACP Workshop: SolidWorks ([Material](#)) (Spring 2022)

5. **Webinar Series:**

- a. Quality Control and Reliability Engineering (QCRE) and DAIS Division Joint Webinar Series, August 2023 – May 2025

**STUDENT  
MENTORING**

1. **ETEC 4099 Senior Design I, II:**

- a. Mark Cruz, Alexis Lozano, Gustavo Solis (**Fall 2023, Spring 2024**):  
**Project Title:** Constructing a Mini Supercomputer using an Array of Jetson Nano for Remote Deployment
- b. Lucas Maseeh, Goodness Nwawuihe, Benjamin Marshall (**Fall 2023, Spring 2024**):  
**Project Title:** Edge Supercomputer for Solving Large Mathematical Problems
- c. Hayden Behrens (**Fall 2024, Spring 2025**)  
**Project Title:** Camera-Based Gait Analysis using a Machine Learning Approach to Improve Patient Care
- d. Talinee Srichomthong (**Fall 2024, Spring 2025**)  
**Project Title:** Improved Hiking Attachment

2. **Undergraduate Research Students:**

- a. Ethan Scott Wingfield (**Project Complete**)  
**Project Title:** Edge-Device-Enabled Sensor-Fusion for Multi-Modal Gait Analysis: A Machine Learning Approach.

- b. Helen Gomez  
**Project Title:** Eye-Tracking Technology to Characterize and Improve Radiologist Search Patterns of Chest X-rays.
- c. Jennifer Li: (Project Complete)  
**Project Title:** Labelling Cardiac X-Ray Images for A.I. Training.
- d. Yagizhan Durak  
**Project Title:** Markov Chain Monte Carlo (MCMC) Techniques for Synthetic Eye-Tracking Data Generation for AI Model Training

3. **Graduate Research Students:**

- a. Ahsan UI Islam (Ph.D. Student)  
**Project Topic:** Large Language Models for Enhanced Agricultural Literacy
- b. Wadduwage Shanika Perera (Ph.D. Student)  
**Project Topic:** LLM Security Development

4. **PostDoctoral Researcher**

- a. **Rahagir Ridwan Anik**  
**Project:** Leveraging Physics-Informed Neural Networks for Design Validation

5. **Directed Study (ETEC 4390):**

- a. Brandon Collins (Project Complete)  
**Project Title:** Deploying Plan for Sensor Network for Monitoring Anomalies in Additive Manufacturing Environment.
- b. Dennis Noll, (Co-Supervised with Dr. Ali Dinc) (Project Complete)  
**Project Title:** Building Affordable RC Airplane for High School Education

6. **Honors College Projects:**

- a. Hayden Behrens (Fall 2024)
- b. Mohammed Amin (Spring 2025, Fall 2025)

**MEMBERSHIPS**

- 1. American Society of Engineering Education (**ASEE**)
- 2. Institute of Industrial & Systems Engineers (**IISE**)
- 3. Institute for Operations Research and the Management Sciences (**INFORMS**)

**CERTIFICATION**

Lean Six Sigma Green Belt (Certificate No. 2018-04-23-041)