Hasan Kurban, Ph.D.

Assistant Professor | College of Science and Engineering | Hamad Bin Khalifa University
Adjunct Associate Professor | Computer Science & Data Science | Indiana University Bloomington
Adjunct Assistant Professor | Electrical & Computer Engineering | Texas A&M University at Qatar
Director | Kurban Intelligence Lab (KIL)

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Profiles: HBKU | IU

Research Interests

AI, Software Engineering, AI for Science, Data Science, Big Data.

Education

Ph.D. in Computer Science, **Minor in** Statistics

Indiana University, Bloomington, IN, USA **September 2017**
Advisor: Prof. Mehmet M. Dalkilic
Committee Members: Prof. Predrag Radivojac, Prof. Michael W. Trosset, Prof. Yuzhen Ye
Dissertation: *A Novel Approach to Optimization of Iterative Machine Learning Algorithms: Over Heap Structure*

Publications

Peer-Reviewed Journal Articles.

50. Md. Mainul Islam, Muhammad Ismail, **Hasan Kurban**, Erchin Serpedin. "Byzantine Fault-Tolerant Lightweight Security Framework for Distributed DC Optimal Power Flow Using Threshold Cryptography," *IEEE Transactions on Systems, Man, and Cybernetics: Systems*, 2026. Under Review

49. Samir Abdaljalil, Erchin Serpedin, **Hasan Kurban**. "*HalluVerse3*: A Fine-Grained Multilingual Benchmark for Hallucination Detection in LLMs," *Language Resources and Evaluation*, 2026. Under Review

48. Muhammed Adil Yatkin, Mihkel Kõrgesaar, Vedat Mert Asan, Jani Romanoff, Joshua Stuckner, **Hasan Kurban**. "Self-Consistent Recurrent Neural Network for Path Dependent Deformation,"

Scientific Reports, 2026.
Under Review

47. Md. Mainul Islam, Muhammad Ismail, **Hasan Kurban**, Erchin Serpedin. "Byzantine-Resilient, Privacy-Preserving, Scalable Distributed Unit Commitment Using Threshold Cryptography," *IEEE Transactions on Industrial Informatics*, 2026.
Under Review

46. Mustafa Kurban, Can Polat, Erchin Serpedin, **Hasan Kurban**. "Engineered MgO Nanoparticles with Tunable Electronic Signatures for Energy Applications," *ACS Applied Nano Materials*, 2026.
Under Review

45. Mariam Elnour, Mohammad AlShaikh Saleh, Rachad Atat, Xiang Huo, Abdulrahman Takiddin, Muhammad Ismail, **Hasan Kurban**, Katherine R. Davis, Erchin Serpedin. "Joint Sensor Deployment and Physics-Informed Graph Transformer for Smart Grid Attack Detection," *IEEE Transactions on Power Systems*, 2026.
Under Review

44. Md Rabiul Islam, Mohammed Yusuf Ansari, **Hasan Kurban**, Erchin Serpedin. "A Multimodal Interpretable Approach to Lung Nodule Diagnosis from CT with Radiology and Anatomy-Aware Text," *IEEE Transactions on Radiation and Plasma Medical Sciences*, 2026.
Under Review

43. Mustafa Kurban, Can Polat, Erchin Serpedin, **Hasan Kurban**. "Multimodal Explainable Artificial Intelligence–Driven Analysis of Quantum Size Effects in Copper Nanoclusters for Hydrogen Storage," *International Journal of Hydrogen Energy*, 2025.
Under Review

42. Idil Bilge Altun, Mert Onur Cakiroglu, Selma Awadallah, Mehmet M. Dalkilic, **Hasan Kurban**. "Benchmarking Artificial Intelligence Models for Dissolved Gas Forecasting in Power Transformers," *Electric Power Systems Research*, 2025.
Under Review

41. Samir Abdaljalil, Parichit Sharma, Rachad Atat, Erchin Serpedin, **Hasan Kurban**. "SINdex: Semantic INconsistency Index for Hallucination Detection in LLMs," *IEEE Open Journal of the Computer Society*, 2025.
Under Review

40. Hasan Cetinkaya, Fahrettin Ay, Mehmet Tuncel, Hazem Nounou, Mohamed Numan Nounou, **Hasan Kurban**, Erchin Serpedin. "Curriculum-Enhanced Adaptive Sampling for Physics-Informed Neural Networks: A Robust Framework for Stiff PDEs," *Mathematics*, 2025.
Under Review

39. Md Rabiul Islam, Md Kamrul Hasan, **Hasan Kurban**, Erchin Serpedin. "Bayesian Probabilistic Knowledge from Diameter Prior for Decision Fusion to Detect Lung Nodule Heterogeneity," *IEEE Transactions on Artificial Intelligence*, 2025.
Under Review

38. Md. Mainul Islam, Abdulrahman Takiddin, Muhammad Ismail, **Hasan Kurban**, Erchin Serpedin. "Linear-Complexity Unified Defense Against Deception Attacks in Distributed Economic Dispatch," *IEEE Transactions on Smart Grid*, 2025.
Under Review

37. Marcin S. Malec, Parichit Sharma, **Hasan Kurban**, Mehmet Dalkilic. "`ccImpute`: An R Package for Fast & Accurate Imputation of Dropouts in Single-Cell RNA-Seq Data," *SoftwareX*, 2025.
    Under Review

36. Ganesh Arkanath, **Hasan Kurban**, Mehmet M. Dalkilic. "PlayoffsNet: Enhancing NBA Playoffs Prediction Through Engineered Features and Explainable Deep Learning," *Journal of Big Data*, 2025.
    Under Review

35. **Hasan Kurban**, Parichit Sharma, Mehmet Dalkilic, Mustafa Kurban. "Accelerating Density of States Prediction in Zn-Doped MgO Nanoparticles via Kernel-Optimized Weighted k-NN," *Scientific Reports*, 2025.

34. Samir Abdaljalil, **Hasan Kurban**, Rachad Atat, Erchin Serpedin, Khalid Qaraqe. "Deep Temporal and Structural Embeddings for Robust Unsupervised Anomaly Detection in Dynamic Graphs," *IEEE Open Journal of the Computer Society*, 2025.

33. Madhavan Kalkunte Ramachandra, **Hasan Kurban**, M. Oguzhan Kulekci, Mehmet M. Dalkilic. "Telescope Indexing for k-Nearest Neighbor Search Algorithms over High Dimensional Data & Large Data Sets," *Scientific Reports*, 2025.

32. Parichit Sharma, Marcin Malec, **Hasan Kurban**, Oguzhan Kulekci, Mehmet M. Dalkilic. "Geometric-k-means: A Bound Free Approach to Fast and Eco-Friendly k-means," *Machine Learning*, 2025.

31. Mert Onur Cakiroglu, Idil Bilge Altun, Shahriar Rahman Fahim, **Hasan Kurban**, Mehmet M. Dalkilic, Rachad Atat, Abdulrahman Takiddin, Erchin Serpedin. "An Extended Frequency-Improved Legendre Memory Model for Enhanced Long-term Electricity Load Forecasting," *IEEE Open Access Journal of Power and Energy*, 2025.

30. Can Polat, **Hasan Kurban**, Mustafa Kurban. "Enabling Ease of Access to Quantum Chemistry with Transformer-Based Text Encoding and Physics-Informed Multilayer Perceptron," *Physica Scripta*, 2025.

29. Mert Onur Cakiroglu, **Hasan Kurban**, Elham Khorasani Buxton, Mehmet Dalkilic. "A Novel Discrete Time Series Representation with De Bruijn Graphs for Enhanced Forecasting using TimesNet," *IEEE Access*, 2025.

28. Can Polat, Erchin Serpedin, Mustafa Kurban, **Hasan Kurban**. "CrysMTM: A Multiphase, Temperature-Resolved, Multimodal Dataset for Crystalline Materials," *Machine Learning: Science and Technology*, 2025.

27. Can Polat, **Hasan Kurban**, Mustafa Kurban. "QuantumShellNet: Ground-State Eigenvalue Prediction of Materials Using Electronic Shell Structures and Fermionic Properties via Convolutions," *Computational Materials Science*, 246, 113366, 2025.

26. Parichit Sharma, Sarthak Mishra, **Hasan Kurban**, Mehmet M. Dalkilic. "p-ClustVal: A Novel p-adic Approach for Enhanced Clustering and Valuation in High-Dimensional scRNASeq Data," *International Journal of Data Science and Analytics*, 2025.

25. Fahrettin Ay, Saud Althunibat, Khalid Qaraqe, **Hasan Kurban**. "A Noise-Adaptive Machine Learning Framework for Optimizing User Grouping in Dynamic IM-OFDMA Systems," *IEEE Transactions on Communications*, 2024.

24. Mert Onur Cakiroglu, **Hasan Kurban**, Khalid Qaraqe, Lilia Aljihmani, Goran Petrovski, Mehmet M. Dalkilic. "A Reinforcement Learning Approach to Effective Forecasting of Pediatric Hypoglycemia in Diabetes I Patients: an extended de Bruijn Graph," *Scientific Reports*, 2024.

23. Can Polat, Mustafa Kurban, **Hasan Kurban**. "Multimodal Neural Network-Based Predictive Modeling of Nanoparticle Properties from Pure Compounds," *Machine Learning: Science and Technology*, 2024.

22. Mustafa Kurban, Can Polat, Erchin Serpedin, **Hasan Kurban**. "Enhancing the Electronic Properties of TiO_2 Nanoparticles Through Carbon Doping: An Integrated DFTB and Computer Vision Approach," *Computational Materials Science*, 244, 113248, 2024.

21. Mert Onur Cakiroglu, **Hasan Kurban**, Parichit Sharma, M. Oguzhan Kulekci, Elham Khorasani Buxton, Maryam Raeeszadeh-Sarmazdeh, Mehmet M. Dalkilic. "An Extended de Bruijn Graph for Feature Engineering Over Biological Sequential Data," *Machine Learning: Science and Technology*, 5(3), 035020, 2024.

20. Selcuk Temiz, Salim Erol, **Hasan Kurban**, Mehmet M. Dalkilic. "State of Charge and Temperature-Dependent Impedance Spectra Regeneration of Lithium-Ion Battery by Duplex Learning Modeling," *Journal of Energy Storage*, 64, 107085, 2023.

19. **Hasan Kurban**, Mustafa Kurban, Mehmet M. Dalkilic. "Rapidly Predicting Kohn-Sham Total Energy Using Data-centric AI," *Nature Scientific Reports*, 12, 1–14, 2022.

18. Selcuk Temiz, **Hasan Kurban**, Salim Erol, Mehmet M. Dalkilic. "Data on Machine Learning Regenerated Lithium-ion Battery Impedance," *Data in Brief*, 108698, 2022.

17. Marcin S. Malec, **Hasan Kurban**, Mehmet M. Dalkilic. "ccImpute: an Accurate and Scalable Consensus Clustering Based Algorithm to Impute Dropout Events in Single-Cell RNA-seq Data," *BMC Methods*, 23, 1–17, 2022.

16. Selcuk Temiz, **Hasan Kurban**, Salim Erol, Mehmet M. Dalkilic. "Regeneration of Lithium-ion Battery Impedance Using a Novel Machine Learning Framework and Minimal Empirical Data," *Journal of Energy Storage*, 52, 105022, 2022.

15. Parichit Sharma, **Hasan Kurban**, Mehmet M. Dalkilic. "DCEM: An R package for Clustering Big Data via Data-centric Modification of Expectation Maximization," *SoftwareX*, 17, 100944, 2022.

14. **Hasan Kurban**, Mustafa Kurban. "Building Machine Learning Systems for Multi-Atoms Structures: $CH_3NH_3PbI_3$ Perovskite Nanoparticles," *Computational Materials Science*, 195, 110490, 2021.

13. **Hasan Kurban**, Mustafa Kurban, Parichit Sharma, Mehmet M. Dalkilic. "Predicting Atom Types of Anatase TiO_2 Nanoparticles with Machine Learning," *Key Engineering Materials*, 880, 89–94, 2021.

12. **Hasan Kurban**, Mustafa Kurban. "Rare-class Learning over Mg-Doped ZnO Nanoparticles," *Chemical Physics*, 546, 11159, 2021.

11. Iskender Muz, **Hasan Kurban**, Mustafa Kurban. "A DFT Study on Stability and Electronic Structure of AlN Nanotubes," *Materials Today Communications*, 26, 102118, 2021.

10. **Hasan Kurban**, Sholeh Alaei, Mustafa Kurban. "Effect of Mg Content on Electronic Structure, Optical and Structural Properties of Amorphous ZnO Nanoparticles: A DFTB Study," *Journal of Non-Crystalline Solids*, 560, 120726, 2021.

9. **Hasan Kurban**. "Atom Classification with Machine Learning and Correlations among Physical Properties of ZnO Nanoparticle," *Chemical Physics*, 545, 111143, 2021.

8. **Hasan Kurban**. "Measuring the Proximity of Medical Treatment Areas with Text Mining," *European Journal of Science and Technology*, 21, 518–526, 2021.

7. **Hasan Kurban**. "Practical Data Science: Examining the Correlations between Structural and Electronic Properties of Different Phases of TiO_2 Nanoparticles," *Journal of Selcuk-Technic*, 4(19), 1–9, 2020.

6. **Hasan Kurban**, Mehmet Dalkilic, Selcuk Temiz, Mustafa Kurban. "Tailoring the Structural Properties and Electronic Structure of Anatase, Brookite and Rutile Phase TiO_2 Nanoparticles: DFTB Calculations," *Computational Materials Science*, 183, 109843, 2020.

5. **Hasan Kurban**, Mustafa Kurban. "Study of Structural and Optoelectronic Properties of Hexagonal ZnO Nanoparticles," *Bilecik Seyh Edebali University Journal of Science*, 6(2), 124–131, 2019.

4. Mustafa Kurban, **Hasan Kurban**, Mehmet M. Dalkilic. "Controlling Structural and Electronic Properties of ZnO NPs," *Bilge International Journal of Science and Technology Research*, 3(0), 35–39, 2019.

3. **Hasan Kurban**, Mustafa Kurban, Mehmet M. Dalkilic. "Density-functional Tight-binding Approach for the Structural Analysis and Electronic Structure of Copper Hydride Metallic Nanoparticles," *Materials Today Communications*, 21, 100648, 2019.

2. **Hasan Kurban**, Mark Jenne, Mehmet M. Dalkilic. "Using Data to Build a Better EM: EM* for Big Data," *International Journal of Data Science and Analytics*, 4(2), 83–97, 2017.

1. Mark Jenne, Owen Boberg, **Hasan Kurban**, Mehmet M. Dalkilic. "Studying the Milky Way Galaxy using ParaHeap-k, a Parallel Heap-based k-means," *IEEE Computer*, 47(9), 26–33, 2014.

Peer-Reviewed Conference Proceedings.

42. **Temporal Realism Evaluation of Generated Videos Using Compressed-Domain Motion Vectors**
Mert Onur Cakiroglu, Idil Bilge Altun, Zhihe Lu, Mehmet Dalkilic, **Hasan Kurban**
The 43rd IEEE / CVF Computer Vision and Pattern Recognition Conference (CVPR), Denver, CO, USA, 2026. Under Review

41. **QuantumCanvas: A Multimodal Benchmark for Visual Learning of Atomic Interactions**
Can Polat, Erchin Serpedin, Mustafa Kurban, **Hasan Kurban**
The 43rd IEEE / CVF Computer Vision and Pattern Recognition Conference (CVPR), Denver, CO, USA, 2026. Under Review

40. **Communication-Efficient Attack Mitigation in Distributed Economic Dispatch using HMAC and Machine Learning**
Md. Mainul Islam, Abdulrahman Takiddin, Muhammad Ismail, **Hasan Kurban**, Erchin Serpedin
IEEE International Conference on Communications (ICC), Glasgow, Scotland, 2026. Under Review

39. **Audit-of-Understanding: Posterior-Constrained Inference for Mathematical Reasoning in Language Models**
Samir Abdaljalil, Erchin Serpedin, Khalid Qaraqe, **Hasan Kurban**

The 29th Annual Conference on Artificial Intelligence and Statistics (AISTATS), Tangier, Morocco, 2026. Under Review

38. **PEROV-H3: Evaluating Generative Models under Size and Symmetry Shifts in Hydrogen-Storage Perovskites**
Can Polat, Erchin Serpedin, Mustafa Kurban, **Hasan Kurban**
The 14th International Conference on Learning Representations (ICLR), Rio de Janeiro, Brazil, 2026. Under Review

37. **StructEval: A Benchmark for Evaluating Generation, Inference, and Reconstruction in Atomic and Crystalline Structures**
Can Polat, Mustafa Kurban, Erchin Serpedin, **Hasan Kurban**
The 14th International Conference on Learning Representations (ICLR), Rio de Janeiro, Brazil, 2026. Under Review

36. **Discovering Physical Constraints from Monocular Trajectories for Enhanced 3D Understanding**
Mohamed Rayan Barhdadi, Hussein Alnuweiri, **Hasan Kurban**
IEEE/CVF Winter Conference on Applications of Computer Vision (WACV), Arizona, USA, 2026. Under Review

35. **Evaluating Multilingual & Code-Switched Alignment in LLMs via Synthetic Natural Language Inference**
Samir Abdaljalil, Khalid Qaraqe, Erchin Serpedin, **Hasan Kurban**
13th Language Resources and Evaluation Conference (LREC), Mallorca, Spain, 2026. Under Review

34. **EMPATHIA: Multi-Faceted Human-AI Collaboration for Refugee Integration**
Mohamed Rayan Barhdadi, Mehmet Tuncel, Erchin Serpedin, **Hasan Kurban**
The 39th Annual Conference on Neural Information Processing Systems (NeurIPS), San Diego, CA, USA, 2025.

33. **Learning Physics Like Humans: Uncovering Physical Laws from Monocular Videos**
Mohamed Rayan Barhdadi, Hussein Alnuweiri, **Hasan Kurban**
The 21st International Conference on Computer Vision (ICCV) – Human-inspired Computer Vision, Hawaii, USA, 2025.

32. **SAFE: A Sparse Autoencoder-Based Framework for Robust Query Enrichment and Hallucination Mitigation in LLMs**
Samir Abdaljalil, Filippo Pallucchini, Andrea Seveso, **Hasan Kurban**, Fabio Marcorio, Erchin Serpedin
30th Conference on Empirical Methods in Natural Language Processing (EMNLP), Suzhou, China, 2025.

31. **Stress-Testing Multimodal Foundation Models for Crystallographic Reasoning**
Can Polat, **Hasan Kurban**, Erchin Serpedin, Mustafa Kurban
The 63rd Annual Meeting of the Association for Computational Linguistics (ACL) – Towards Knowledgeable Foundation Models, Vienna, Austria, 2025.

30. **Theorem-of-Thought: A Multi-Agent Framework for Abductive, Deductive, and Inductive Reasoning in Language Models**
Samir Abdaljalil, **Hasan Kurban**, Khalid Qaraqe, Erchin Serpedin
The 63rd Annual Meeting of the Association for Computational Linguistics (ACL) – Towards Knowledgeable Foundation Models, Vienna, Austria, 2025.

29. **xChemAgents: Agentic AI for Explainable Quantum Chemistry**
Can Polat, Mehmet Tuncel, Mustafa Kurban, Erchin Serpedin, **Hasan Kurban**
The 42nd International Conference on Machine Learning (ICML) – Multi-Agent Systems in the Era of Foundation Models, Vancouver, Canada, 2025.

28. **Beyond Atomic Geometry Representations in Materials Science: A Human-in-the-Loop Multimodal Framework**
Can Polat, **Hasan Kurban**, Erchin Serpedin, Mustafa Kurban
The 42nd International Conference on Machine Learning (ICML) – DataWorld, Vancouver, Canada, 2025.

27. **PhysicsNeRF: Physics-Guided 3D Reconstruction from Sparse Views**
Mohamed Rayan Barhdadi, **Hasan Kurban**, Hussein Alnuweiri
The 42nd International Conference on Machine Learning (ICML) – Building Physically Plausible World Models, Vancouver, Canada, 2025.

26. **Multivariate de Bruijn Graphs: A Symbolic Graph Framework for Time Series Forecasting**
Mert Onur Cakiroglu, Idil Bilge Altun, Mehmet Dalkilic, Elham Khorasani Buxton, **Hasan Kurban**
The 42nd International Conference on Machine Learning (ICML) – Foundation Models for Structured Data (FMSD), Vancouver, Canada, 2025.

25. **Understanding the Capabilities of Molecular Graph Neural Networks in Materials Science Through Multimodal Learning and Physical Context Encoding**
Can Polat, **Hasan Kurban**, Erchin Serpedin, Mustafa Kurban
The 42nd IEEE / CVF Computer Vision and Pattern Recognition Conference (CVPR) – Multimodal Learning for Materials Science (MM4Mat), Nashville, TN, USA, 2025. *Spotlight*

24. **TDCM25: A Multi-Modal Multi-Task Benchmark for Temperature-Dependent Crystalline Materials**
Can Polat, **Hasan Kurban**, Erchin Serpedin, Mustafa Kurban
The 13th International Conference on Learning Representations (ICLR) – AI for Accelerated Materials Design, Singapore, 2025.

23. **De Bruijn Graph-Enhanced Time Series Models for Electricity Load Forecasting**
Mert Onur Cakiroglu, Idil Bilge Altun, Shahriar Rahman Fahim, **Hasan Kurban**, Mehmet M. Dalkilic, Rachad Atat, Abdulrahman Takiddin, Erchin Serpedin, Khalid Qaraqe
17th International Symposium on Signals, Circuits and Systems (SSCS), Iași, Romania, 2025.

22. **Data-Efficient Hydrogen Adsorption Prediction in Copper Nanoclusters: A Computer Vision-Based Transfer Learning Approach**
Can Polat, **Hasan Kurban**, Erchin Serpedin, Mustafa Kurban
19th International Conference on Compatibility, Power Electronics and Power Engineering (CPE-POWERENG), Antalya, Turkey, 2025.

21. **Instance-Based Learning-Driven Density of States Analysis in Functionalized Fullerene Derivatives for Optimizing Organic Photovoltaics**
Parichit Sharma, **Hasan Kurban**, Mehmet Dalkilic, Mustafa Kurban
19th International Conference on Compatibility, Power Electronics and Power Engineering (CPE-POWERENG), Antalya, Turkey, 2025.

20. **Decentralized N-1 Contingency Analysis for Cascading Failure Prediction in Multi-Region Power Systems using Consortium Blockchain**

Md. Mainul Islam, Muhammad Ismail, Rachad Atat, **Hasan Kurban**, Katherine R. Davis, Erchin Serpedin
5th International Conference on Electrical, Computer and Energy Technologies (ICECET), Paris, France, 2025.

19. **Exploring Various Sequential Learning Methods for Deformation History Modeling**
Muhammed Adil Yatkin, Mihkel Korgesaar, Jani Romanoff, Joshua Stuckner, Ümit Işlak, **Hasan Kurban**
26th Engineering Applications of Neural Networks / Engineering Applications and Advances of Artificial Intelligence (EAAAI), Limassol, Cyprus, 2025.

18. **Predicting Optical Bandgaps in C_{60} and Functionalized Derivatives from Limited Data for Renewable Energy Applications**
Mehmet Tuncel, **Hasan Kurban**, Erchin Serpedin, Mustafa Kurban
19th International Conference on Compatibility, Power Electronics and Power Engineering (CPE-POWERENG), Antalya, Turkey, 2025.

17. **A Novel Discrete Time Series Representation with De Bruijn Graphs for Enhanced Forecasting using TimesNet (Extended Abstract)**
Mert Onur Cakiroglu, **Hasan Kurban**, Elham Khorasani Buxton, Mehmet Dalkilic
11th IEEE International Conference on Data Science and Advanced Analytics (DSAA), San Diego, USA, 2024.

16. **p-ClustVal: A Novel p-adic Approach for Enhanced Clustering and Valuation in High-Dimensional scRNASeq Data (Extended Abstract)**
Parichit Sharma, Sarthak Mishra, **Hasan Kurban**, Mehmet M. Dalkilic
11th IEEE International Conference on Data Science and Advanced Analytics (DSAA), San Diego, USA, 2024.

15. **What Data-Centric AI Can Do For k-means: a Faster, Robust k-means-d**
Parichit Sharma, **Hasan Kurban**, Mehmet M. Dalkilic
41st International Conference on Machine Learning (ICML) – Data-centric Machine Learning Research (DMLR), Vienna, Austria, 2024.

14. **Novel NBA Fantasy League driven by Engineered Team Chemistry and Scaled Position Statistics**
Ganesh Arkanath, Nishad Gupta, **Hasan Kurban**, Parichit Sharma, Madhavan K R, Elham Khorasani Buxton, Mehmet M. Dalkilic
IEEE International Conference on Big Data: Data-Centric AI, Sorrento, Italy, 2023.

13. **Are Sports Awards About Sports? Using AI to Find the Answer**
Anshumaan Shankar, Gowtham Veerabadran Rajasekaran, Jacob Hendricks, Jared Andrew Schlak, Parichit Sharma, Madhavan K R, **Hasan Kurban**, Mehmet M. Dalkilic
ECML/PKDD: 10th Workshop on Machine Learning and Data Mining for Sports Analytics, Turin, Italy, 2023.

12. **AReS: An AutoML Regression Service for Data Analytics and Novel Data-centric Visualizations**
Josh Elms, Sam Johnson, Madhavan K R, Keerthana Sugasi, Parichit Sharma, **Hasan Kurban**, Mehmet M. Dalkilic
29th ACM SIGKDD International Conference on Knowledge Discovery and Data Mining, Undergraduate Consortium (KDD-UC), Long Beach, CA, USA, 2023.

11. **Are They What They Claim: A Comprehensive Study of Ordinary Linear Regression Among the Top Machine Learning Libraries in Python**
Sam Johnson, Josh Elms, Madhavan K R, Keerthana Sugasi, Parichit Sharma, **Hasan Kurban**, Mehmet M. Dalkilic
29th ACM SIGKDD International Conference on Knowledge Discovery and Data Mining, Undergraduate Consortium (KDD-UC), Long Beach, CA, USA, 2023.

10. **Data Expressiveness and Its Use in Data-centric AI**
Hasan Kurban, Parichit Sharma, Mehmet M. Dalkilic
NeurIPS Data-centric AI, 2021.

9. **Size Dependent Electronic Structure and Structural Properties of Cupric Oxide (CuO) Nanoparticles**
Hasan Kurban, Mustafa Kurban, Mehmet M. Dalkilic
NEM, 2019.

8. **Using Data Analytics to Optimize Public Transportation on a College Campus**
Kurt Zimmer, **Hasan Kurban**, Mark Jenne, Logan Keating, Perry Maull, Mehmet M. Dalkilic
IEEE International Conference on Data Science and Advanced Analytics (DSAA), Turin, Italy, 2018.

7. **A Novel Approach to Optimization of Iterative Machine Learning Algorithms: Over Heap Structure**
Hasan Kurban, Mehmet M. Dalkilic
IEEE International Conference on Big Data, Boston, MA, USA, 2017.

6. **Improving Expectation Maximization Algorithm over Stellar Data**
Hasan Kurban, Can Kockan, Mark Jenne, Mehmet M. Dalkilic
IEEE BigData Workshop on Management, Search and Mining of Massive Repositories of Solar and Stellar Astronomy Data, Boston, MA, USA, 2017.

5. **Case Study: Clustering Big Stellar Data with EM***
Hasan Kurban, Can Kockan, Mark Jenne, Mehmet M. Dalkilic
IEEE/ACM International Conference on Big Data Computing, Applications and Technologies (BDCAT), Austin, TX, USA, 2017.
Best Poster Award

4. **Employing Software Engineering Principles to Enhance Management of Climatological Datasets for Coral Reef Analysis**
Mark Jenne, Alex Zimmerman, **Hasan Kurban**, Claudia Johnson, Mehmet M. Dalkilic
6th International Workshop on Climate Informatics, Colorado, USA, 2016.

3. **EM*: An EM Algorithm for Big Data**
Hasan Kurban, Mark Jenne, Mehmet M. Dalkilic
IEEE International Conference on Data Science and Advanced Analytics (DSAA), Montreal, Canada, 2016.
Honorable Mention Paper Award

2. **Red-RF: Reduced Random Forest for Big Data using Priority Voting & Dynamic Data Reduction**
Hussein Mohsen, **Hasan Kurban**, Kurt Zimmer, Mark Jenne, Mehmet M. Dalkilic
IEEE BigData Congress, New York, USA, 2015.

1. **A New Set of Random Forests with Varying Dynamic Data Reduction and Voting Techniques**
   Hussein Mohsen, **Hasan Kurban**, Mark Jenne, Mehmet M. Dalkilic
   IEEE International Conference on Data Science and Advanced Analytics, Shanghai, China, 2014.

Book Reviews.

3. *Data Science For All* by Brennan Davis and Hunter Glanz, 2024.
   ISBN: 9780135311189
2. *Mastering Social Media Mining with R* by Sharan Kumar Ravindran, 2015.
   ISBN: 1784396311
1. *Learning Data Mining with R* by Bater Makhabel, 2015.
   ISBN: 1783982101

Grants, Honors, and Awards

Competitive Research Grants (PI / Lead PI).

- **QRDI – Climate Change and Environment Grant**
  Project: Real-Time Self-Adaptive & Autonomous Calibration of CO_2 Leak Detection Sensors in the Presence of Impurities Using Wavelet Transform and ML Algorithms
  Role: Principal Investigator
  Award No.: CCEC02-0216-250065
  Budget: $299,792 (**Award Year:** 2025)
- **QRDI – Modernizing Charitable Sector Grant**
  Project: Advancing AI-Driven Governance in Qatar's Charitable Sector: A Trustworthy Arabic LLM for Regulatory Compliance
  Role: Lead Principal Investigator
  Award No.: MCSC02-0221-250019
  Budget: $40,999 (**Award Year:** 2025)
- **TÜBİTAK 1001 Scientific and Technological Research Projects Support Program**
  Project: Improving Dynamic Fit and Comfort of Prosthetic Sockets Using Wearable Fiber Optic Sensors
  Role: Principal Investigator
  Award No.: 125E223
  Budget: $60,000 (**Award Year:** 2025)
- **QRDI – National Priorities Research Program (NPRP)**
  Project: ReSolVE – Resilient Solutions for Vulnerabilities and Emergencies: An Effective National Risk Management Plan for Qatar
  Role: Principal Investigator (joined in 2025)
  Award No.: NPRP14C-0909-210008
  Budget: $4,434,601 (**Award Year:** 2023)
- **QRDI – Undergraduate Research Experience Program (UREP)**
  Project: Leveraging Data Analytics for Interpreting Transformer Dissolved Gas Analysis

Role: Principal Investigator
Award No.: UREP31-043-2-014
Budget: $26,042 (**Award Year:** 2025)

Institutional Grants and Internal Funding.

- **HBKU Office of the Vice President for Research – Horizon Hub 1st Cycle Program**
  Event: AI for Science Symposium
  Role: Principal Investigator
  Award No.: HBKU-INT-VPR-HHW-01-8
  Dates: January 21–22, 2026
  Budget: QAR 150,000 (**Award Year:** 2025)
- **HBKU Thematic Research Grant Program (3rd Cycle)**
  Project: Optimal AI and Quantum Secured Wireless–Optical Communication Design for Smart Cities in Qatar
  Role: Principal Investigator
  Award No.: HBKU-INT-VPR-TG-03-04
  Budget: $102,740 (**Award Year:** 2025)
- **HBKU GPU Compute Grant by Research Computing Core Group**
  Project: Compressed Motion Statistics for Reliable Evaluation of Generative Videos
  Role: Lead Principal Investigator
  Institution: Hamad Bin Khalifa University
  Budget: 7,000 QAR (**Award Year:** 2025)
- **Transformative Educational Experience (TEE) Grant**
  Project: Transforming Software Engineering Education through Autograder and LLM Integration
  Role: Lead Principal Investigator
  Institution: Texas A&M University at Qatar
  Budget: $10,000 (**Award Year:** 2024)
- **Multiversity Academic Grant**
  Project: A Novel, Multi-Institutional Machine Learning for Engineers Course
  Role: Lead Principal Investigator
  Institution: Texas A&M University at Qatar
  Budget: $10,000 (**Award Year:** 2024)
- **Faculty Resource Allocation**
  Project: Faculty Teaching and Research Support (Three-Year Allocation)
  Role: Lead Principal Investigator
  Institution: Texas A&M University at Qatar
  Budget: $53,750 (**Award Year:** 2023)
- **Research Impact Initiative**
  Project: Leveraging AI, Machine Learning, and Data Analytics to Enhance Qatar's Sustainable Energy, Healthcare, and Security
  Role: Lead Principal Investigator
  Institution: Texas A&M University at Qatar
  Budget: $177,000 (**Award Year:** 2023)

- **Startup Research Funds**
  Project: Initiating Cutting-Edge Research Projects (Three-Year Support)
  Role: Lead Principal Investigator
  Institution: Texas A&M University at Qatar
  Budget: $413,000 (**Award Year:** 2023)

Additional Honors and Recognitions.

- **Best Poster Award**
  IEEE/ACM International Conference on Big Data Computing, Applications and Technologies (BDCAT), Austin, TX, 2017.
- **Best Paper Award**
  IEEE International Conference on Data Science and Advanced Analytics (DSAA), Montreal, Canada, 2016.
- **Turkish National Ministry of Education Scholarship**
  Comprehensive funding for graduate studies, 2009–2017.
- **Nomination for Researcher of the Year**
  Indiana University, Bloomington; Academic Year 2016–2017.
- **Nomination for Associate Instructor of the Year**
  Indiana University, Bloomington; Academic Year 2014–2015.
- **Computer Science Graduate Fellowship**
  Indiana University, Bloomington; August 2010–May 2012.

Service

University Committees.

- **Hamad Bin Khalifa University** (Fall 2024–Fall 2025): Industrial and Government Outreach Committee; ABET & Curriculum; Academic Advising; AI for Science.
- **Texas A&M University at Qatar** (Spring 2024): ABET & Curriculum; Seminars & Invited Speakers; Budget.
- **Texas A&M University at Qatar** (Fall 2023): ABET & Curriculum; Seminars & Invited Speakers; Budget; Teaching Load Model.

Editorial and Professional Roles.

Nature Scientific Reports	Editorial Board Member
Manning	Technical Editor
Pearson	Data Science Advisory Board Member

Conference Organization and Leadership.

- **Organizer**, "AI for Science Symposium" (HBKU Horizon Hub 1st Cycle), Doha, Qatar, January 21–22, 2026.

- **Program Committee Member**, Industry Track, The Web Conference (WWW 2026), Dubai, UAE, 2026.
- **Invited Speaker**, Workshop on "The Role of AI in Strengthening the Resilience of Future Power Systems", Doha, Qatar, 2025.
- **Session Chair**, 4th Digital Flow Assurance Symposium (HBKU, SLB, Wood, TAMUQ), Doha, Qatar, 2025.
- **Organizing Committee Member**, 19th International Conference on Compatibility, Power Electronics and Power Engineering (CPE-POWERENG 2025), Special Session on AI-Driven Innovations in Renewable Energy.
- **Organizing Committee Member**, 11th IEEE International Conference on Data Science and Advanced Analytics (DSAA 2024), Special Session on Advancing Materials Science through Data Science.
- **Program Committee Member**, Basarim High-Performance Computing Conference (Basarim 2024, 2022, 2020).
- **Session Chair**, International Joint Conference on Artificial Intelligence (IJCAI), Jeju, South Korea, 2024.
- **Session Chair**, 11th IEEE International Conference on Data Science and Advanced Analytics (DSAA), San Diego, USA, 2024.
- **Session Chair**, IEEE International Conference on Big Data, Sorrento, Italy, 2023.

Reviewer Contributions. I have served as a reviewer for major venues, including:

- *ACM SIGKDD International Conference on Knowledge Discovery and Data Mining (KDD)*, *International Conference on Learning Representations (ICLR)*, *Annual Conference on Artificial Intelligence and Statistics (AISTATS)*, *Big Data Mining and Analytics*, *Concurrency and Computation: Practice and Experience*, *Journal of Energy Storage*, *Information Sciences*, *Machine Learning: Science and Technology*, *eTransportation*, *Computers in Biology and Medicine*, *Energy Conversion and Management*, *Basarim*.

Teaching Experience

Instructor.

- ENGR 110: Introduction to Programming (Undergraduate) — Fall 2024, Spring 2025, Fall 2025
- ENGR 102: Engineering Lab I: Computation (Undergraduate) — Spring 2024, Fall 2024, Spring 2025
- ECEN 210: Computer Programming and Algorithms (Undergraduate) — Fall 2023
- ECEN 248: Introduction to Digital Systems Design (Undergraduate) — Fall 2023
- CSCI-B 565: Data Mining (Graduate) — Spring 2023
- CSCI-B 365: Introduction to Computers and Programming (Undergraduate) — Spring 2023

- CSCI-C 241: Discrete Structures for Computer Science (Undergraduate) — Summer 2022, Fall 2022
- CSCI-B 365: Introduction to Data Analysis and Mining (Undergraduate) — Spring 2022
- CSCI-B 505: Applied Algorithms (Graduate) — Fall 2021
- BMH101: Algorithms and Programming I (Undergraduate) — Spring 2019, Fall 2019
- BMH 406: Data Security (Undergraduate) — Spring 2019
- BMH 104: Web and Internet Technologies (Undergraduate) — Spring 2019
- BMH 205: Data Structures (Undergraduate) — Fall 2018
- BMH 413: Artificial Neural Networks (Undergraduate) — Fall 2018, Fall 2019
- BMH 103: Introduction to Computer Engineering (Undergraduate) — Fall 2018, Fall 2019
- CSCI-P 556: Applied Machine Learning (Graduate) — Fall 2017
- INFO-I590: Online Applied Data Mining (Graduate) — Fall 2017
- CSCI-B 351: Elements of Artificial Intelligence (Undergraduate/Graduate) — Spring 2018
- CSCI-B 365: Introduction to Data Analysis and Mining (Undergraduate) — Spring 2018

Associate Instructor.

- CSCI-B 565: Data Mining (Graduate) — Fall 2016
- CSCI-B 351: Elements of Artificial Intelligence (Undergraduate/Graduate) — Spring 2017
- CSCI-B 565: Data Mining (Graduate) — Fall 2012, Fall 2013, Spring 2015, Spring 2016
- CSCI-B 555: Machine Learning (Graduate) — Spring 2013
- CSCI-C 343: Data Structures (Undergraduate/Graduate) — Spring 2014
- CSCI-B 365: Seminar in Computer Science: Data Mining (Undergraduate) — Fall 2014, Fall 2015
- CSCI-B 609: Topics in Algorithms and Computing Theory (Graduate) — Fall 2014
- INFO-I590: Real World Data Science (Graduate, Online) — Summer 2016, sponsored by Eli Lilly

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Supervision and Mentoring

Postdoctoral Researchers.

- **Dr. Mehmet Tuncel** (Postdoctoral Researcher, completed)
  Current Position: Istanbul Technical University (İTÜ), Türkiye
  Research Areas: Multimodal and physics-informed machine learning; explainable AI for quantum chemistry and materials science; foundation models for scientific discovery; agentic AI; multimodal benchmarking.

Ph.D. Researchers.

Graduated

- **Parichit Sharma** (Ph.D.)
  Current Position: University of Maryland, Baltimore, MD, United States
  Dissertation: Data-Centric Principles for Machine Learning: From Efficient Clustering to Single-Cell Discovery.
  Research Areas: Data-centric ML, clustering theory, single-cell analytics.

Current

- **Can Polat** (Ph.D. candidate)
  Research Areas: AI for Materials Science and AI for Science; multimodal learning for atomic and crystalline systems; scientific foundation models; agentic AI for simulation, prediction, and scientific reasoning; benchmark development for materials discovery.
- **Mert Onur Cakiroglu** (Ph.D. candidate)
  Research Areas: Theoretical and applied AI for temporal reasoning; video understanding and complex sequence modeling; multivariate time-series foundations; multimodal learning; agentic AI; symbolic temporal structures such as multivariate de Bruijn graphs for forecasting and representation.
- **Samir Abdaljalil** (Ph.D. candidate)
  Research Areas: Trustworthy and explainable LLMs; hallucination detection and mitigation; semantic inconsistency modeling; multilingual and code-switched evaluation; agentic reasoning frameworks (e.g., Theorem-of-Thought); sparse autoencoder–based LLM safety.
- **Md Rabiul Islam** (Ph.D. candidate)
  Research Areas: Multimodal and interpretable medical AI; lung nodule detection and radiology-aware text fusion; Bayesian decision modeling; anatomy-aware representation learning; decision fusion under uncertainty.
- **Idil Bilge Altun** (Ph.D. student)
  Research Areas: Foundations of Artificial Intelligence; video and time-series modeling; multimodal learning; foundation models for sequential and dynamic data; agentic AI systems; hybrid symbolic–neural representations for long-horizon reasoning.
- **Rasul Khanbayov** (Ph.D. student)
  Research Areas: Vision–Language Models (VLMs); video understanding and temporal reasoning; multimodal alignment; foundation models for video and sequential data; agentic AI systems for multimodal perception and structured video analysis.

Master's Students.

- **Ganesh Arkanath** (M.Sc.)
  Current Position: Meta
  Thesis: Advancing NBA Playoffs Prediction and Fantasy Leagues Using Feature Engineering, Deep Learning, and Explainable AI.
  Research Areas: Sports analytics; deep learning; interpretable modeling.

- **Madhavan Kalkunte Ramachandra** (M.Sc.)
  Current Position: ServiceNow
  Research Areas: High-dimensional similarity search; kNN acceleration; telescope-based indexing; scalable ML systems.
- **Jaydeep Chauhan** (M.Sc.)
  Current Position: Eli Lilly and Company
  Thesis: Out of Distribution Generalization, Spurious Correlations, and Supervised Contrastive Group-wise Learning.
  Research Areas: OOD generalization; debiasing; contrastive learning; stability in supervised models.

Undergraduate Researchers.

- **Mohamed Rayan Barhdadi**
  Projects: PhysicsNeRF for 3D reconstruction; discovering physical constraints from monocular trajectories; agentic AI for social systems (EMPATHIA).
- **Sam Johnson**
  Projects: AutoML regression benchmarking (AReS); empirical analysis of regression algorithms across ML libraries; data-centric diagnostics.
- **Josh Elms**
  Projects: AutoML regression platform; visual analytics for model interpretability and performance diagnostics; large-scale regression behavior analysis.

Invited Talks

- *EMPATHIA: Multi-Faceted Human–AI Collaboration for Refugee Integration*
  Invited Talk, The 39th Annual Conference on Neural Information Processing Systems (NeurIPS), San Diego, USA, 2025.
- *SAFE: A Sparse Autoencoder-Based Framework for Robust Query Enrichment and Hallucination Mitigation in LLMs*
  30th Conference on Empirical Methods in Natural Language Processing (EMNLP) Findings, Suzhou, China, 2025.
- *Theorem-of-Thought: A Multi-Agent Framework for Abductive, Deductive, and Inductive Reasoning in Language Models*
  The 63rd Annual Meeting of the Association for Computational Linguistics (ACL) – Towards Knowledgeable Foundation Models, Vienna, Austria, 2025.
- *Stress-Testing Multimodal Foundation Models for Crystallographic Reasoning*
  The 63rd Annual Meeting of the Association for Computational Linguistics (ACL) – Towards Knowledgeable Foundation Models, Vienna, Austria, 2025.
- *xChemAgents: Agentic AI for Explainable Quantum Chemistry*
  The 42nd International Conference on Machine Learning (ICML) – Multi-Agent Systems in the Era of Foundation Models, Vancouver, Canada, 2025.

- *Multivariate de Bruijn Graphs: A Symbolic Graph Framework for Time Series Forecasting*
  The 42nd International Conference on Machine Learning (ICML) – Foundation Models for Structured Data (FMSD), Vancouver, Canada, 2025.
- *PhysicsNeRF: Physics-Guided 3D Reconstruction from Sparse Views*
  The 42nd International Conference on Machine Learning (ICML) – Building Physically Plausible World Models, Vancouver, Canada, 2025.
- *Beyond Atomic Geometry Representations in Materials Science: A Human-in-the-Loop Multimodal Framework*
  The 42nd International Conference on Machine Learning (ICML) – DataWorld, Vancouver, Canada, 2025.
- *Understanding the Capabilities of Molecular Graph Neural Networks in Materials Science Through Multimodal Learning and Physical Context Encoding*
  The 42nd IEEE / CVF Computer Vision and Pattern Recognition Conference (CVPR) – Multimodal Learning for Materials Science (MM4Mat), Nashville, TN, USA, 2025. *Spotlight*
- *TDCM25: A Multi-Modal Multi-Task Benchmark for Temperature-Dependent Crystalline Materials*
  The 13th International Conference on Learning Representations (ICLR), Singapore, 2025.
- *BlinkAI: A Non-Verbal Communication Tool for Locked-In Syndrome Patients*
  AI and Medicine, Sidra Medicine, Doha, Qatar, 2025.
- *A Reinforcement Learning Approach to Effective Forecasting of Pediatric Hypoglycemia in Diabetes I Patients: an extended de Bruijn Graph*
  AI and Medicine, Sidra Medicine, Doha, Qatar, 2025.
- *BlinkAI: A Non-Verbal Communication Tool for Locked-In Syndrome Patients*
  Web Summit, Doha, Qatar, 2025.
- *AI-Driven Innovation in Medicine: Success, Failure & Challenges*
  3rd Surgical Annual Research Day, Sidra Medicine, Doha, Qatar, 2025.
- *AI Powered Innovation: Driving Organization*
  Future Leaders Programme, Muscat, Oman, 2024.
- *p-ClustVal: A Novel p-adic Approach for Enhanced Clustering and Valuation in High-Dimensional scRNASeq Data*
  11th IEEE International Conference on Data Science and Advanced Analytics (DSAA 2024), San Diego, USA, 2024.
- *What Data-Centric AI Can Do For k-means: a Faster, Robust k-means-d*
  41st International Conference on Machine Learning (ICML) – Data-centric Machine Learning Research (DMLR), Vienna, Austria, 2024.
- *Novel NBA Fantasy League driven by Engineered Team Chemistry and Scaled Position Statistics*
  IEEE International Conference on Big Data: Data-Centric AI, Sorrento, Italy, 2023.
- *Are Sports Awards About Sports? Using AI to Find the Answer*
  ECML/PKDD: 10th Workshop on Machine Learning and Data Mining for Sports Analytics, Turin, Italy, 2023.
- *Data-Centric Machine Learning*
  Invited colloquia at multiple universities (San Jose State, University of Houston, University of

Montana, American University of the Middle East, United Arab Emirates University, University of Illinois, Zayed University, University of Missouri, University of South Carolina, etc.), 2022–2023.

- *Clustering in Data Science*
  Department of Statistics and Data Science, Northwestern University, Spring 2022.
- *Comparison of Machine Learning Algorithms for CuO Nanoparticles*
  4th International Conference on Physical Chemistry and Functional Materials (PCFM21), Elazığ, Turkey, April 2021.
- *Practical Data Science: Examining the Correlations between Structural and Electronic Properties of Different Phases of TiO_2 Nanoparticles*
  International Conference on Advanced Technologies (ICAT), Istanbul, Turkey, August 2020.
- *Predicting Atom Types of Anatase TiO_2 Nanoparticles with Machine Learning*
  International Conference on Engineering and Innovative Materials (ICEIM), Singapore, September 2020.
- *Introduction to Data Science*
  Computer Engineering Department, Izmir Institute of Technology, Spring 2020.
- *Clustering Techniques in Engineering*
  Computer Engineering Department, Yildirim Beyazit University, Spring 2019.
- *Data Science Fundamentals*
  Informatics Department, Istanbul Technical University, Fall 2018.
- *Using Data Analytics to Optimize Public Transportation on a College Campus*
  IEEE International Conference on Data Science and Advanced Analytics (DSAA), Turin, Italy, October 2018.
- *Data Science and Big Data*
  Eli Lilly and Company, Fall 2017.
- *A Novel Approach to Optimization of Iterative Machine Learning Algorithms: Over Heap Structure*
  IEEE International Conference on Big Data, Boston, MA, USA, December 2017.
- *Improving Expectation Maximization Algorithm over Stellar Data*
  Workshop on Management, Search and Mining of Massive Repositories of Solar and Stellar Astronomy Data, Boston, MA, USA, December 2017.
- *Case Study: Clustering Big Stellar Data with EM**
  IEEE/ACM International Conference on Big Data Computing, Applications and Technologies (BDCAT), Austin, TX, USA, December 2017.
- *EM*: An EM Algorithm for Big Data*
  IEEE International Conference on Data Science and Advanced Analytics (DSAA), Montreal, Canada, October 2016.
- *EM Algorithms for Clustering*
  Computer Science Department, Indiana University, Fall 2016.
- *Principal Component Analysis*
  Computer Science Department, Indiana University, Fall 2016.

- *A New Set of Random Forests with Varying Dynamic Data Reduction and Voting Techniques*
  IEEE International Conference on Data Science and Advanced Analytics, Shanghai, China, October 2014.
- *Data Structures and Algorithms*
  Computer Science Department, Indiana University, Spring 2014.
- *Ensemble Models in Machine Learning*
  Computer Science Department, Indiana University, Spring 2013.

Academic and Professional Appointments

Hamad Bin Khalifa University, Doha, Qatar.

Assistant Professor, College of Science and Engineering
Contact: Dr. Hazem Nounou, `hnounou@hbku.edu.qa`
Period: August 2024 – Present

Indiana University Bloomington, IN, USA.

Adjunct Associate Professor, Computer Science Department and Data Science Program
Contact: Dr. Yuzhen Ye, `yye@indiana.edu`
Period: June 2023 – Present

Texas A&M University at Qatar, Doha, Qatar.

Adjunct Assistant Professor, Electrical and Computer Engineering Department
Contact: Dr. Erchin Serpedin, `eserpedin@qatar.tamu.edu`
Period: August 2024 – Present

Texas A&M University at Qatar, Doha, Qatar.

Assistant Professor, Electrical and Computer Engineering Department
Contact: Dr. Erchin Serpedin, `eserpedin@qatar.tamu.edu`
Period: June 2023 – August 2024

Indiana University Bloomington, IN, USA.

Visiting Associate Professor, Computer Science Department
Contact: Dr. Yuzhen Ye, `yye@indiana.edu`
Period: July 2021 – June 2023

Siirt University, Siirt, Turkey.

Assistant Professor, Computer Engineering Department
Contact: Dr. Musa Atas, `hakmesyo@gmail.com`
Period: August 2018 – July 2021

Indiana University Bloomington, IN, USA.

Visiting Assistant Professor, Computer Science Department
Contact: Dr. Amr Sabry, sabry@indiana.edu
Period: August 2017 – August 2018

Turbo Appeal, Chicago, IL, USA.

Data Scientist
Contact: Scott Beason, scottmbeason@gmail.com
Period: January 2015 – December 2015

Indiana University Bloomington, IN, USA.

Undergraduate Research Mentor
Contact: Dr. Lamara D. Warren, ldwarren@indiana.edu
Period: January 2015 – May 2017

Computer and Language Skills

- **Programming Languages:** Python, C, C++, C#, Java
- **Technical Software:** R, Matlab, OpenCV, Octave, OpenBUGS, WinBUGS, Weka, Tableau, KNIME
- **Databases:** MySQL, NoSQL, PostgreSQL, SQL Server
- **Languages:** Fluent in English; Native in Turkish

References

Available upon request.