**Dr. Md Kamruzzaman Sarker**
Assistant Professor (tenure track)
Department of Computer Science
Bowie State University

Tel: 301.860.4501
Email: msarker@bowiestate.edu
Office: CSB 320
Bowie, MD 20715, USA

# Curriculum Vitae

## Experience

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|---|---|
| 05.2025 – 8.2025 | **Visiting Faculty**<br>US Department of Energy<br>Oak Ridge National Laboratory, Oak Ridge, Tennessee, USA |
| 08.2023 – Current | **Assistant Professor**<br>Department of Computer Science<br>Bowie State University, Bowie, Maryland, USA |
| 08.2021 – 6.2023 | **Assistant Professor**<br>Department of Computing Sciences<br>University of Hartford, West Hartford, Connecticut, USA |
| 01.2021 – 07.2021 | **Postdoctoral Fellow**<br>Center for Artificial Intelligence and Data Science<br>Kansas State University, Manhattan, Kansas, USA |
| 08.2019 –12.2020 | **Graduate Research Assistant**<br>Department of Computer Science<br>Kansas State University, Manhattan, Kansas, USA |
| 01.2019 – 08.2019 | **Artificial Intelligence Intern**<br>Intel Corporation<br>Hillsboro, Oregon, USA |
| 05.2017 – 08.2017 | **Artificial Intelligence Intern**<br>Accenture Technology Labs<br>Dublin, Ireland |
| 01.2016 – 07.2019 | **Graduate Research Assistant**<br>Department of Computer Science and Engineering<br>Wright State University, Dayton, Ohio, USA |
| 09.2013 – 11.2015 | **Software Engineer**<br>Samsung Research & Development Institute Bangladesh (SRBD)<br>Dhaka, Bangladesh |

## Education

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|---|---|
| 01.2016 – 11.2020 | **PhD in Computer Science**<br>Dissertation title: **Towards explainable artificial intelligence (XAI) based on contextualizing data with knowledge graphs**<br>Supervisor: Pascal Hitzler<br>Kansas State University, Manhattan, KS, USA. |
| 01.2016 – 05.2019 | **M.S. in Computer Science**<br>Wright State University, Dayton, Ohio, USA.<br>**Transferred to Kansas State University from Wright State University.** |

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| 01.2016 – 05.2018 | **Graduate certificate in Big and Smart Data**<br>Wright State University, Dayton, Ohio, USA. |
| 01.2009 – 09.2013 | **B.Sc. in Computer Science and Engineering**<br>Khulna University of Engineering & Technology, Khulna, Bangladesh. |

**Web References**

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|---|---|
| Web | https://md-k-sarker.github.io |
| Google Scholar | https://scholar.google.com/citations?user=dnySX2QAAAAJ |
| LinkedIn | https://www.linkedin.com/in/md-kamruzzaman-sarker/ |
| DBLP | https://dblp.org/pid/186/2804.html |
| StackOverflow | http://stackoverflow.com/users/1054358/md-kamruzzaman-sarker |

# 1 Publications

## 1.1 Edited Books

1. **Compendium of Neuro-Symbolic Artificial Intelligence**
   Pascal Hitzler, Md Kamruzzaman Sarker, Aaron Eberhart (eds.)
   Frontiers of Artificial Intelligence and Applications 369, IOS Press, Amsterdam, 2023.
   Book page: https://www.iospress.com/catalog/books/compendium-of-neurosymbolic-artificial-intelligence

2. **Data Driven Approaches on Medical Imaging**
   Bin Zheng, Stefan Andrei, Md Kamruzzaman Sarker, Kishor Datta Gupta (eds.)
   Springer, ISBN: 978-3-031-47771-3.
   Book page: https://link.springer.com/book/10.1007/978-3-031-47772-0

3. **Neuro-Symbolic Artificial Intelligence - The State of the Art**
   Pascal Hitzler, Md Kamruzzaman Sarker (eds.)
   Frontiers in Artificial Intelligence and Applications Vol. 342, IOS Press, Amsterdam, 2022.
   Book page: https://www.iospress.com/catalog/books/neuro-symbolic-artificial-intelligence-the-state-of-the-art

## 1.2 Pending Patent

4. George Amariucai, Jana Abhishek, Monireh Ebrahimi, Md Kamruzzaman Sarker, Pascal Hitzler, ”A Secure Way to use Neural Networks for Biometric User Authentication”, WIPO: WO2021188347A1, 2021.
   Patent status: Published.

## 1.3 Journal Articles

5. Staphord Bengesi, Hoda El-Sayed, H., Md Kamruzzaman Sarker, Yao Houkpati, J Irungu, & T Oladunni, (2024). ”Advancements in Generative AI: A Comprehensive Review of GANs, GPT, Autoencoders, Diffusion Model, and Transformers.”
   Journal: IEEE Access.

6. Tanvi Patel, Hoda El-Sayed, Md Kamruzzaman Sarker. EfficientSwin: A Hybrid Model for Blood Cell Classification with Saliency Maps Visualization.
   2024 35th Conference of Open Innovations Association (FRUCT), 544-551

7. Ajib Susanto, Ibnu Utomo Wahyu Mulyono, Christy Atika Sari, Eko Hari Rachmawanto, De Rosal Ignatius Moses Setiadi, Md Kamruzzaman Sarker
   International Journal of Electrical & Computer Engineering (2088-8708), Volume 13, Issue 6.

8. Harish Trio Adityawan, Omar Farroq, Stefanus Santosa, Hussain Md Mehedul Islam, Md Kamruzzaman Sarker
   Butterflies Recognition using Enhanced Transfer Learning and Data Augmentation, Journal of Computing Theories and Applications, Volume 1, Issue 2.

9. Robet Robet, Octara Pribadi, Suyud Widiono, Md Kamruzzaman Sarker. Image Encryption using Half-Inverted Cascading Chaos Cipheration.
   Journal of Computing Theories and Applications. Volume 1, Issue 2.

10. Kishor Datta Gupta, Nafiz Sadman, Akib Sadmanee, Md Kamruzzaman Sarker, Roy George. Behavioral recommendation engine driven by only non-identifiable user data.
    Journal: Machine Learning with Applications. Volume 11, issue 4, pp. 86-104,
    DOI: https://doi.org/10.1016/j.mlwa.2022.100442.

11. Abhishek Jana, Bipin Paudel, Md Kamruzzaman Sarker, Monireh Ebrahimi, Pascal Hitzler, George T Amariucai. Neural Fuzzy Extractors: A Secure Way to Use Artificial Neural Networks for Biometric User Authentication.
    Journal: Proceedings on Privacy Enhancing Technologies. Volume 2022, issue 4, pp. 86-104,
    DOI: https://doi.org/10.56553/popets-2022-0100

12. Md Kamruzzaman Sarker, Lu Zhou, Aaron Eberhart, and Pascal Hitzler. Neuro-Symbolic Artificial Intelligence: Current Trends.
    Journal of AI Communications by IOS Press, Volume. 34, no. 3, pp. 197-209, 2021, DOI: 10.3233/AIC-210084.

13. Pascal Hitzler, Aaron Eberhart, Monireh Ebrahimi, Md Kamruzzaman Sarker, Lu Zhou. Neuro-Symbolic Approaches in Artificial Intelligence.
    Journal: National Science Review. nwac035, DOI: https://doi.org/10.1093/nsr/nwac035.
    **Impact factor: 17.3**

14. Pascal Hitzler, Federico Bianchi, Monireh Ebrahimi, Md Kamruzzaman Sarker. Neural-Symbolic Integration and the Semantic Web.
    Journal of Semantic Web. Volume 11 (1), 2020, 3-11.

15. Ajib Susanto, De Rosal Ignatius Moses Setiadi, Eko Hari Rachmawanto, Ibnu Utomo Wahyu Mulyono, Christy Atika Sari, Md Kamruzzaman Sarker, Musfiqur Rahman Sazal. Triple layer image security using bit-shift, chaos, and stream encryption.
    Journal of Bulletin of Electrical Engineering and Informatics, 2020, 9(3), pp. 980-987. DOI: https://doi.org/10.11591/eei.v9i3.2001.

## 1.4 Conference Papers

16. Bengesi, S, El-Sayed, H, Sarker, MD, Predicting Parkinsonâ€™s Disease with Explainability: A Hybrid Deep Learning Approach Utilizing Voice Dataset ( CSCI December 2024)

17. Bengesi, S, El-Sayed, H, Voice Disorder Prediction With Convolutional Neural Network (CNN) (CSCI December 2024).

18. Bengesi, S, El-Sayed, H, Sarker, MD, Hybrid of Deep Learning and Transformer Models with Explainable IA for Enhanced Parkinson's Disease Detection ( ICCA December 2024).

19. Patel, T., El-Sayed, H., Sarker, M. K., Duong, D., & Solomon, B. D., Training Swin Transformer-Based GAN for High-Resolution Blood Cell Imaging with Limited Data, The 2024 International Conference on Computational Science and Computational Intelligence (CSCI) Springer Nature. December 2024.

20. S. Almenwer, H. El-Sayed, and MD. S. Kamruzzaman, "Transformer-Based Hybired Model for DICER1 Syndrome Classification", ICCA, December 2024.

21. S. Almenwer, H. El-Sayed, and MD. S. Kamruzzaman, "Detection of DICER1Mutation at an Early Stage Using UniCNN Model", CSCI, December 2024.

22. Idoko, Agbo, Hoda El-Sayed, and M.D. Kamruzzan Sarker. "Comparative Analysis of Mel-Frequency Cepstral Coefficients and Wavelet-Based Audio Signal Processing for Emotion Detection and Mental Health Assessment in Spoken Speech." ICCSEA, SPPR â€“ 2024, vol. 14, CS & IT - CSCP, 2024, pp. 239-227.

23. Patel, T., El-Sayed, H., & Sarker, M. K., Hematology Imaging Classification : Few-Shot Learning of CLIP and its biomedical variants, The 2024 IEEE International Conference on Internet Of Things and Intelligence System (IoTIS) IEEE CompSoc. November 2024.

24. Patel, T., El-Sayed, H., & Sarker, M. K., Evaluating Vision-Language Models for hematology image Classification: Performance Analysis of CLIP and its Biomedical AI Variants, IEEE 36th Conference of Open Innovations Association (FRUCT), October 2024 . IEEE.

25. S. Almenwer, H. El-Sayed, and MD. S. Kamruzzaman, "Classification Method in Vision Transformer with Explainability in Medical Images for Lung Neoplasm Detection," MICAD, 2024.

26. Bengesi, S., El-Sayed, H., Sarker, M. K., Houkpati, Y., Irungu, J., & Oladunni, T. (2024). Advancements in Generative AI: A Comprehensive Review of GANs, GPT, Autoencoders, Diffusion Model, and Transformers. IEEE Access, Vol 12, pp 69812-69837, May 2024.

27. Sahar Almenwer, Hoda El-Sayed, Kamruzzaman Sarker, Detection of Pleuropulmonary Blastoma at an Early Stage Using Vision Transformer Model, 35th IEEE FRUCT, April 2024.

28. Cara Leigh Widmer, Md Kamruzzaman Sarker, Srikanth Nadella, Joshua Fiechter, Ion Juvina, Pascal Hitzler, Brandon Minnery, A Method for Using Concept Induction to Achieve Human-Understandable Explanations of Machine Learning Image Classifications. 52nd Annual Meeting of the Society for Computation in Psychology, Boston, MA. November 17th, 2022.

29. Eko Hari Rachmawanto, Rahmawati Zulfiningrum, Md Kamruzzaman Sarker. Text Encryption using Bi-Amold Cat Map and Modulus Operation. IEEE 2021 International Seminar on Application for Technology of Information and Communication (iSemantic). DOI: 10.1109/iSemantic52711.2021.9573175.

30. Monireh Ebrahimi, Md Kamruzzaman Sarker, Federico Bianchi, Ning Xie, Aaron Eberhart, Derek Doran, HyeongSik Kim, Pascal Hitzler: Neuro-Symbolic Deductive Reasoning for Cross-Knowledge Graph Entailment. In: Proceedings of AAAI Spring Symposium: Combining Machine Learning with Knowledge Engineering 2021.

31. Aaron Eberhart, Cogan Shimizu, Sulogna Chowdhury, Md Kamruzzaman Sarker, and Pascal Hitzler: Expressibility of OWL Axioms with Patterns. In proceedings of The Semantic Web - 14th International Conference, ESWC 2021.

32. Md Kamruzzaman Sarker, Joshua Schwartz, Pascal Hitzler, Lu Zhou, Srikanth Nadella, Brandon Minnery, Ion Juvina, Michael L. Raymer, and William R. Aue. Wikipedia Knowledge Graph for Explainable AI. 2020. In: Proceedings of Knowledge Graph and Semantic Web Conference, KGSWC 2020.

33. E Sugiarto, DRIM Setiadi, A Fahmi, EH Rachmawanto, CA Sari, **Md K Sarker**, B Widjajanto. Securing Text Messages using the Beaufort-Vigenere Hybrid Method. Journal of Physics: Conference Series. Vol: 1577, Issue: 1.

34. Astuti, E.Z., Setiadi, D.R.I.M., Rachmawanto, E.H., Sari, C.A., **Md. Kamruzzaman Sarker**. LSB-based Bit Flipping Methods for Color Image Steganography. Journal of Physics: Conference Series, 2020, 1501(1), 012019.

35. Md Kamruzzaman Sarker, Pascal Hitzler, Efficient Concept Induction for Description Logics. The Thirty-Third AAAI Conference on Artificial Intelligence, AAAI 2019, The Thirty-First Innovative Applications of Artificial Intelligence Conference, IAAI 2019, The Ninth AAAI Symposium on Educational Advances in Artificial Intelligence, EAAI 2019, Honolulu, Hawaii, USA, January 27 - February 1, 2019. AAAI Press 2019, pp. 3036-3043.

36. De Rosal Ignatius Moses Setiadi, Afif Faishal Najib, Eko Hari Rachmawanto, Christy Atika Sari, **Kamruzzaman Sarker**, Nova Rijati. A comparative study MD5 and SHA1 algorithms to encrypt REST API authentication on mobile-based application. IEEE 2019 International Conference on Information and Communications Technology, ICOIACT 2019, pp. 206-211, 8938570. DOI: 10.1109/ICOIACT46704.2019.8938570.

37. Md Kamruzzaman Sarker, Adila Krisnadhi, David Carral, and Pascal Hitzler. Rule based OWL Modeling with ROWLTab Protege Plugin. The Semantic Web - 14th International Conference, ESWC 2017, Portoroz, Slovenia, May 28 - June 1, 2017, Proceedings, Part I, volume 10249 of Lecture Notes in Computer Science, pages 419-433, 2017.

38. Md Kamruzzaman Sarker, Kazi Md Rokibul Alam, Md Arifuzzaman. Emotion recognition from speech based on relevant feature and majority voting. 2014 International Conference on Informatics, Electronics & Vision (ICIEV), Dhaka, 2014, pp. 1-5, doi: 10.1109/ICIEV.2014.6850685.

## 1.5 Workshop Papers

39. Md Kamruzzaman Sarker, Ning Xie, Derek Doran, Michael Raymer, and Pascal Hitzler. Explaining trained neural networks with semantic web technologies: First steps. In Tarek R. Besold, Artur S. dÁvila Garcez, and Isaac Noble, editors, Proceedings of the Twelfth International Workshop on Neural-Symbolic Learning and Reasoning, NeSy 2017, London, UK, July 17-18, 2017, volume 2003 of CEUR Workshop Proceedings. CEUR-WS.org, 2017.

40. Ning. Xie, Md Kamruzzaman Sarker, Derek Doran, Pascal Hitzler, Michael L. Raymer. Relating Input Concepts to Convolutional Neural Network Decisions. In Thirty-first Conference on Neural Information Processing Systems NeurIPS 2017 Workshop: Interpreting, Explaining and Visualizing Deep Learning, NIPS IEVDL 2017. NIPS, CA, USA, 2017.

### 1.6 Poster & Demonstrations

41. Md Kamruzzaman Sarker, Adila Alfa Krisnadhi, and Pascal Hitzler. Owlax: A Protege plugin to support ontology axiomatization through diagramming. Proceedings of the ISWC 2016 Posters & Demonstrations Track,15th International Semantic Web Conference, Kobe, Japan, October 19, 2016.

42. Md Kamruzzaman Sarker, Adila Alfa Krisnadhi, and Pascal Hitzler. Modeling OWL with Rules: The ROWL Protege Plugin. Proceedings of the ISWC 2016 Posters & Demonstrations Track,15th International Semantic Web Conference, Kobe, Japan, October 19, 2016.

### 1.7 Theses

43. Md Kamruzzaman Sarker. Towards explainable artificial intelligence (XAI) based on contextualizing data with knowledge graphs. Ph.D. thesis, Kansas State University, 2020.

44. Md Kamruzzaman Sarker, Md Arifuzzaman. Emotion Recognition from Speech. B.Sc. thesis, Khulna University of Engineering & Technology, 2013.

## 2 Research Services

### 2.1 Journal Editorial Board Member

- Neurosymbolic Artificial Intelligence, started in 2022.
- Guest editor: Semantic Web Journal, issue: Neuro-Symbolic Artificial Intelligence and the Semantic Web.

### 2.2 Program Committee

- NSF Panel reviewer 2022, 2023, 2024.
- 39th International Conference on Logic Programming (ICLP), 2023.
- 2022 IEEE Symposium Series On Computational Intelligence, IEEE SSCI 2022, Singapure.
- Semantic Reasoning Evaluation Challenge (SemREC), 2022, co-located with the 21st International Semantic Web Conference (ISWC 2022).
- 4th Ibero-American Knowledge Graph and Semantic Web Conference (KGSWC), 2022, Universidad Camilo Jose Cela, Madrid, Spain, 21-23 November 2022.
- 2nd International Joint Conference on Learning & Reasoning (IJCLR), Windsor Great Park, United Kingdom, 28-30 September 2022.
- 20th International Semantic Web Conference (ISWC) Virtual, 24 - 28 October 2021.
- 1st International Joint Conference on Learning & Reasoning (IJCLR), 25 - 27 October 2021, Virtual.

- Workshop on COMBINATION OF SYMBOLIC AND SUB-SYMBOLIC METHODS AND THEIR APPLICATIONS (CSSA), Co-located with ECML/PKDD2021.
- Third Ibero-American Conference and Second Indo-American Conference (KGSWC) 2021. Kingsville, Texas, USA, November 22-24, 2021.
- Workshop on Combining Symbolic And Sub-Symbolic Methods And Their Applications, CSSA 2020, At 29th ACM International Conference On Information And Knowledge Management (CIKM) 2020.
- 1st Workshop on the Semantic Web in Practice: Tools and Pedagogy, PRAXIS 2020, at International Semantic Web Conference (ISWC) 2020, Athens, Greece (now online), November 2020.

## 2.3 Reviewer (selected list)

- 37th AAAI Conference on Artificial Intelligence, 2022, 2023, 2024.
- MDPI (applied math), 2022, 2023, 2024.
- Semantic Web Journal (http://www.semantic-web-journal.net/), 2019, 2023, 2024.
- 19th International Semantic Web Conference (ISWC) 2020, Athens, Greece (virtual).
- 16th International Semantic Web Conference (ISWC) 2017, Vienna, Austria.
- 1st Iberoamerican Knowledge Graph and Semantic Web Conference (KGSWC) 2019, Villa Clara, Cuba.
- ICCA 2020 : International Conference on Computing Advancements, Dhaka, Bangladesh.
- 6th Workshop on Semantic Deep Learning (SemDeep-6) at 29th International Joint Conference on Artificial Intelligence and the 17th Pacific Rim International Conference on Artificial Intelligence (IJCAI-PRICAI) 2020.
- 1st Workshop on Semantic Explainability, at 13th IEEE International Conference on Semantic Computing, Newport Beach, California, USA.

## 2.4 Research Software Development

- ECII: Knowledge graph based data analysis software. Pivotal to obtain $1 million in funding from DARPA and AFRL. Open-source. https://github.com/md-k-sarker/ecii
- OWLAx: Visual Ontology development tool, popular software in Semantic Web community, open-source. https://github.com/md-k-sarker/owlax
- ROWLTab: SWRL rule to OWL axiom converter, popular software in Semantic Web community, open-source. https://github.com/md-k-sarker/ROWL

## 2.5 Tutorials (through regular proposal process)

- Organizer and presenter of the On Explainable AI: From Theory to Motivation, Applications and Limitation tutorial, 33rd AAAI Conference on Artificial Intelligence (AAAI 2019), Hawaii, USA.
- Organizer and presenter of the On the Role of Data Semantics for Explainable AI tutorial, 2nd U.S. Semantic Technologies Symposium (US2TS 2019), North Carolina, USA.
- Presenter of the Methods and Tools for Modular Ontology Modeling tutorial, 17th International Semantic Web Conference (ISWC 2018), Monterey, California, USA.

## 2.6 Hackathons, Symposiums

- Judge at MIT Hackathon, HackMIT 2020.
- Volunteer at Hack K-State 2019.
- Volunteer at 1st U.S. Semantic Technologies Symposium (US2TS) 2018.

# 3 Teaching Services

## 3.1 Program Development

- Developed the MS in Computer Science program's course curriculum at the University of Hartford, program learning outcome with other 3 members Dr. Sheikh Rabiul Islam, Dr. Andrew Jung and Professor Ingrid Russel.

## 3.2 Course Development

### 3.2.1 Graduate

Developed multiple courses for the new MS in CS program at University of Hartford.
https://www.hartford.edu/academics/schools-colleges/arts-sciences/academics/departments-and-centers/computing-sciences/ms-in-computer-science.aspx

- Machine Learning (CS-569) course for the new MS in CS program.
- Developed Application of Deep Learning (CS-570) course for the new MS in CS program.
- Developed High Performance Computing (CS-557) course for the new MS in CS program.

### 3.2.2 Undergraduate

- Developed COSC 466 - System Design and Programming which will be part of the newly developed HPC concentration at Bowie State University.

- Developed COSC 274 - Prompt Engineering and COSC 279 - Introduction to Mechatronics as part of the BS + BS in AI program at Bowie State University.
- Developed Machine Learning (CS-391) course at university of Harttford.

# 4 Teaching and Student Supervision

## 4.1 Teaching

### 4.1.1 Courses at the Bowie State University

- COSC 214: Data Structures. Fall 2023, Spring 2024.
- COSC 113: Computer Science II. Spring 2024.

### 4.1.2 Taught Courses at the University of Hartford

- CS 351: Introduction to Artificial Intelligence. Spring 2023.
- CS 355: Computer Networks. Spring 2023.
- CS 220: Data Structures. Fall 2021, Spring 2022, Spring 2023.
- CS 375: Web Services. Spring 2022.
- CS 365: Principles of Database Systems. Fall 2022.
- CS 211: Architecture and Assembly Language. Fall 2021.
- CS 114: Fundamentals of Computing I, Fall 2021, Spring 2022.
- CS 111: Programming Foundations. Fall 2022.
- CS 110: Introduction to Computers. Fall 2022.

## 4.2 Student Supervision

### 4.2.1 Bowie State University

- Rachel Bonas, PhD student, trying to make AI more trustworthy
- James Bible, PhD student, trying to make aviation more secure by using AI
- Co-mentoring 5 PhD students with Dr. El-Sayed
- Advising SFS scholars (Dawn Marshal, Roxan Rockfeller and Jada Danner).
- Mentored undergrad students in SURI research program

#### 4.2.2 University of Hartford

- Cyprien Michel Delentie, from March 2023.
  MS student of Ecole normale superiere de Lyon, visiting USA to perform research on Neuro-Symbolic AI. Visiting researcher.
- Rahul Kumar, from October 2021.
  Undergraduate student.
- Zachary Biernat, from November 2021.
  Undergraduate student.

# 5 Projects

## 5.1 Scientific Project Involvement

- Improving Trustworthiness of deep learning model
  Bowie State University. Improving the trustworthiness of deep learning models requires meticulous validation techniques and robust interpretability frameworks. By integrating transparency and accountability measures, we are enhancing the reliability and ethical integrity of these models, fostering greater confidence in their deployment across various applications.
  August 2023 to current.
  Role: Researcher & PI
- Space signal propagation optimization Innovating within the realm of space signal propagation, our research focuses on optimizing transmission efficiency through the application of deep learning methodologies. By harnessing neural networks, we aim to enhance the reliability and speed of space signal propagation, facilitating more seamless communication across vast cosmic distances.
  August 2023 to current.
  Role: Researcher & PI
- Hate Speech detection
  University of Hartford. August 2021 to 2023.
  Role: Researcher & PI
- Galaxy morphological classification
  University of Hartford. August 2021 to 2023.
  Role: Researcher & PI
- Integrating symbolic and sub-symbolic algorithms
  University of Hartford. August 2021 to 2023.
  Role: Researcher & PI
- Artificial Intelligence for computer security
  University of Hartford. August 2021 to 2023.
  Role: Researcher & PI
- Explaining Deep Learning with Background Knowledge (XBack)
  University of Hartford. August 2021 to 2023.
  Role: Researcher

- Combining Symbolic and Sub-Symbolic Artificial Intelligence
  University of Hartford. August 2021 to 2023.
  Role: Researcher
- Explainable Machine Reasoning through the Application of Linked Data (EMERALD)
  Department of Defense, Air Force. August 2019 to July 2021.
  Role: Researcher
- Recovering the Sources of Individual Differences Unduly-named Errors (ReSIDUE)
  Defense Advanced Research Projects Agency (DARPA). September 2019 to August 2021.
  Role: Researcher
- Deep learning execution time improvement.
  Intel Corporation, January 2019 to August 2019.
  Role: Artificial Intelligence Intern
- Human Centered Big Data (HCBD)
  Ohio Federal Research Network, August, 2017 to December 2018.
  Role: Researcher
- Explaining AI Decision
  Accenture Technology Labs, May 2017 to August 2017.
  Role: PhD researcher
- Human Centered Big Data (HCBD)
  Ohio Federal Research Network, August, 2016 to April 2017.
  Role: Researcher
- Advancing software tools for ontology development
  National Science Foundation, January 2016 to April 2017.
  Role: Researcher.

# 6 Awards

- Best Faculty in Collaboration.
  Bowie State University, July 2024.
- Exploring Entrepreneurship Scholarship.
  Kansas State University, October 2020.
  Amount $1000.
- Travel Grant to deliver tutorial.
  33rd AAAI Conference Artificial Intelligence (AAAI 2019), Hawaii, USA.
- Travel Grant to deliver tutorial.
  2nd U.S. Semantic Technologies Symposium (US2TS 2019), North Carolina, USA.
- Travel Grant to present ontology modeling.
  DCVoCamp 2017, Washington DC, USA.
- Nominated for best demo award.
  15th International Semantic Web Conference (ISWC 2016), Kobe, Japan.

- Several travel grants to present papers at different conferences.
- Dean's Award on senior year of undergraduate, KUET, 2013.