Curriculum Vitae of **Abu ASADUZZAMAN**

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Last Revision Date: 2025-MAY-05

EDUCATION:

Ph.D.	Computer Engineering, December 2009 Florida Atlantic University, Boca Raton, Florida GPA: 3.94 out of 4.00 Dissertation: *"Cache Optimization for Real-Time Embedded Systems"* Advisor: Dr. Imadeldin Mahgoub, Tecore Professor Advisor's E-mail: mahgoubi@fau.edu; Tel: 561-297-3458
M.S.	Computer Engineering, August 1997 Florida Atlantic University, Boca Raton, Florida GPA: 3.94 out of 4.00 Thesis: *"Memory Latency Evaluation in Cluster-Based Cache-Coherent Multiprocessor Systems with different Interconnection Topologies"* Advisor: Dr. Imadeldin Mahgoub, Tecore Professor Advisor's E-mail: mahgoubi@fau.edu; Tel: 561-297-3458
B.S.	Electrical and Electronic Engineering, November 1993 Bangladesh University of Engineering & Technology (BUET) Dhaka, Bangladesh Final Grade: First Class (stood 51st in a class of 146 students) Major Project: *"Computer Aided Design of Batwing Antenna Arrays by Standing Wave Modeling of Current Distribution"*
Advanced Courses Taken	Modern Computer Architecture, Parallel Computing, Database Systems, Computer Systems Management and Information Technology, and Embedded Systems

CITIZENSHIP: U.S. Citizen

MARITAL STATUS: Married with one child

RESEARCH INTERESTS:

- Computer Architecture / High Performance Computer Systems
- Machine Learning / Data Analytics
- Parallel Computing / Parallel Programming
- Interdisciplinary Research / STEM Education

RESEARCH GRANTS/ACTIVITIES:

2025/05 – 2025/12 **Principal Investigator (PI),** "A Promising Approach to Employ Machine Learning for Genomic Data Analysis in Advancing Cancer Treatment," *WSU Flossie E. West Memorial Trust;* total $30,500 for 5/15/2025-12/31/2025.

2025/05 – 2025/08 **PI,** "Dynamic Optimization of Power System Models using Machine Learning," *the Department of Energy (DOE) Visiting Faculty Program (VFP – Faculty and Students)* for research at Argonne National Laboratory (ANL); total $20,000 for 6/15/2025-8/15/2025 (expecting additional student support).
ANL: Daniel Adrian Maldonado (Host Researcher)

2026 – 2031 Co-**PI,** "Imaging Immune Response in Breast Tumors," under review, *NIH R01 PAR-24-311 Program*; total $3,775,287 for five years (my share is $315,516).
Vanderbilt University: Md Jashim Uddin (PI), Craig L. Duvall (Co-PI), Justin H.-J. Lo (Co-PI), Mukesh K. Gupta (Co-PI), Yu Shyr (Co-PI), Zhiguo Zhao (Co-PI), Tzushan S. Yang (Co-PI), and David L. Gorden (Co-PI)

2024/07 – 2024/07 **Recipient,** travel grant to attend *the 2024 NSF CSforAll PI and Community Meeting at Caesars Forum in Las Vegas, NV, July 15-19, 2024* (registration, hotel, airfare, and meals will be reimbursed by NSF, estimated total $1,500.

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11/2023 – 05/2024 **PI,** "Prescreening Data Analysis for Mobile Dental Clinics," awarded, *Vera Healthcare*; total $71,425 for six months (my share is $42,855).
Wichita State University: John Watkins (Co-PI), and Visvakumar Aravinthan (Co-PI)

2023 – 2023 **Recipient,** travel grant to attend *the NSF CISE Education and Workforce (EWF) Aspiring PI (API) Summit* in Atlanta, GA, June 21-22, 2023 (registration, hotel, airfare, and meals will be reimbursed by NSF, estimated total $1,800.

2023 – 2023 **Recipient,** travel grant to attend *the Department of Energy Exascale Computing Project (ECP) Annual Meeting* in Houston, TX, Jan. 17-20, 2023 (registration, hotel, airfare, and meals will be reimbursed by ECP, estimated total $1,200.

2023 – 2023 **PI,** "Traffic Flow Modeling and Simulation on Exascale Machines," funded by *the Argonne National Laboratory (ANL) Faculty Research Participant program* for research at ANL; total $54,800 (two students are supported).

2022 – 2023 **PI,** "Expand PETSc Library to Support Data-Intensive Real-Time Simulation," awarded by *the Department of Energy Argonne National Laboratory Exascale Computing Project (ECP) Co-Design Center for Online Data Analysis and Reduction (CODAR)*; total $43,815 (one student to support) for one year.

2022 – 2022 **PI,** "Network Application Modeling and Simulation on Exascale Machines," funded by *the Department of Energy Exascale Computing Project (ECP) via Sustainable Research Pathways for High-Performance Computing (SRP-HPC) program* for research at the Argonne National Laboratory (ANL); total $53,300 (two students are supported).

2020 – 2021 **PI,** "Open2C framework and OpenSoC Fabric to build up a communication-aware level-2 cache controller," awarded by *the Department of Energy Visiting Faculty Program (VFP – Faculty and VFP – Student) via Sustainable Research Pathways (SRP)* for research at the Lawrence Berkeley National Laboratory; total $48,000 (two students are supported).

2020 – 2021 **PI,** "A Real-Time Imaging System to Assist Surgical Procedures," fudded by *Wichita State University Research/Creative Projects Award (URCA)*; total $4,500 (one student is supported) for one year.

2016 – 2017 **PI,** "High Performance Computing at Low (Room) Temperature," awarded by *CybertronPC;* total $10,000 for one year (includes hardware and service donation).

2016 – 2017 **PI,** "Applying Massively Parallel Processing to Analyze Mammogram Images that Should Lead Solutions to Treat Cancer," fudded by *Wichita State University (WSU) Research/Creative Projects Award;* total $4,500 (one student is supported) for one year.

2016 – 2017 **PI,** "NVIDIA GPU Research Center at Wichita State," awarded by *NVIDIA Corporation;* multiple benefits including recognition as a

GPU Research Center, invitation to NVIDIA Special Events, and inclusion in GPU Seeding Programs; total $10,000 for two years.

2015 – 2016 **PI,** "Collaborative Research: NetApp NFS Connector for Apache Spark Systems," *NetApp, Inc.*; total $60,000 ($49,828 for PI) for nine months. Wichita State University: Tonya Witherspoon (Co-PI)

2014 – 2015 **PI,** "An Empirical Application of High-Performance Pattern Recognition and Protein Binding to Treat Cancer," *WSU Flossie E. West Memorial Foundation;* total $24,984 for one year.

2014 – 2015 **PI,** "NVIDIA Academic Research Programs," *NVIDIA Corporation*; total $3,800 for one year (hardware donation).

2014 – 2015 **PI,** "Discovering CUDA-Accelerated New Programming Paradigm to Address the Growing Low-Power High Performance Computing Requirements," *WSU University Research/Creative Projects Award;* total $4,498 for one year.

2014 – 2014 **PI,** "Wiktronics-WSU Embedded Systems Research Project 2014," *Wiktronics Collaborative Project 2014;* total $11,466 for six months.

2013 – 2014 **PI,** "A novel task and data regrouping based parallel approach to solve massive problems faster on multithreaded computing systems," *Kansas NSF EPSCoR First Award;* total $105,296 for 15 months.

2012 – 2013 **PI,** "CUDA Teaching Center at Wichita State University;" *NVIDIA Corporation*; total $7,702 (hardware plus money) for one year.

2012 – 2012 **PI,** "M2SYS-WSU Biometric Cloud Computing Research Project;" *M2SYS Technology*; total $2,875 for four months.

PUBLICATIONS**:**
(Student coauthor is indicated with an asterisk.)

a) Selected Journal Papers

1. **Asaduzzaman, A.,** Thompson, C.C.*, Sibai, F.N., and Uddin, M.J., "Application of Ensemble Learning Models in Computer-Aided Diagnosis of Skin Diseases," in *Springer Journal of Neural Computing and Applications (NCAA-D-25-00053R1)*, 2025. (Q1; Impact Factor 4.8; Google Scholar h5-index 135)
[**Abu Asaduzzaman,** Christian C. Thompson*, Md J. Uddin, "Improving CADx System Performance for Skin Disease Detection using Ensemble Machine Learning Models," in *IEEE TechRxiv,* May 2024. DOI: 10.36227/techrxiv.171467652.28972099/v1]

2. Uddin, M.J., Lo, J.H.-J., Gupta, M., Werfel, T., **Asaduzzaman, A.,** Oltman, C.G., Mohyuddin, M., Nazmin, F., Rahman, M.S., Jashim, A., Crews, B., Kingsley, P., Marnett, L., Duvall, C.L., Cook, R., "Polymeric Nanoparticles Enable Targeted Visualization of Drug Delivery in Breast Cancer," in *ACS Molecular Pharmaceutics*, 2025. (Q1; Impact Factor 4.5; Google Scholar h5-index 62)
[Uddin, M.J., Lo, J.-H., Gupta, M.K., Werfel, T.A., **Asaduzzaman, A.,** Oltman, C.G., Gbur, E.F., Mohyuddin, M.T., Nazmin, F., Rahman, M.S., Jashim, A., Crews, B.C., Kingsley, P.J., Marnett, L.J., Duvall, C.L., and Cook, R.S., "Polymeric Micellar Nanoparticles Enable Image-guided Drug Delivery in Solid Tumors," in *Biology bioRxiv,* June 2024, DIO: https://doi.org/10.1101/2024.06.07.598019]

3. **Asaduzzaman, A.,** Uddin, M.R.*, Sibai, F.N., and Nawar, F., "A Novel Machine Learning-Based Dimensionality Reduction Technique: A Case Study on Water Quality Analysis," under review, in *Elsevier Engineering Applications of Artificial Intelligence (EAAI)*, 2025. (Q1; Impact Factor 7.5; Google Scholar h5-index 97)
[**Abu Asaduzzaman,** Md R Uddin*, Fadi N Sibai, "Dimensionality Reduction by Machine Learning for Cost-Effective Data Analysis," in *IEEE TechRxiv,* April 2024. DOI: 10.36227/techrxiv.171332281.12206851/v1]

4. Uddin, M.R.*, **Asaduzzaman, A.,** and Sibai, F.N., "A Methodology to Optimize Cloud-Edge Computing for Scalable Cloud-Based Heterogeneous Systems," under review, in *IEEE Transactions on Cloud Computing (TCC-2024-11-0456)*, 2024. (Q1; Impact Factor 5.3; Google Scholar h5-index 51)
[Md Raihan Uddin, **Abu Asaduzzaman,** Fadi N. Sibai, "A Methodology to Optimize Edge Computing for Scalable IoT Systems," in *IEEE TechRxiv,* July 2024. DOI: 10.36227/techrxiv.172055620.09900012/v1]

5. **Asaduzzaman, A.,** Pandi, K.R.*, and Thompson, C.C.*, "A Promising Approach for Enhancing Performance and Thermal Management of WNoC Systems," under review, in *IEEE Transactions on Computers (TC),* Feb. 2025. (Q1; Impact Factor 3.6; Google Scholar h5-index 54)
[Abu Asaduzzaman and Koteswara R. Pandi*, "Dynamic Job Scheduling using the Least Utilized Cores for Enhanced Performance and Thermal Management in WNoC," in *IEEE TechRxiv,* Aug. 2024. DOI: 10.36227/techrxiv.172254504.47143293/v1]

6. **Asaduzzaman, A.,** Thompson, C.C.*, Sibai, F.N., and Uddin, M.J., "Building Cancer Genomic Datasets to Analyze Protein Function Alterations Using Machine Learning," under review, in *Oxford NAR Genomics Bioinformatics (NARGAB, NARGAB-D-2025-150)*, 2025. (Q1; Impact Factor 4.0; Google Scholar h5-index 36)
[**Asaduzzaman, A.,** Thompson, C.C.*, Sibai, F.N., and Uddin, M.J., "Using The Cancer Genome Atlas from cBioPortal to Develop Genomic Datasets for Machine Learning Assisted Cancer Treatment," in *Biology bioRxiv,* Feb. 2025, DIO: https://doi.org/10.1101/2025.02.17.638660]

7. **Asaduzzaman, A.,** Thompson, C.C.*, and Uddin, M.J., "Machine Learning Approaches for Skin Neoplasm Diagnosis," in *ACS Omega*, 2024. (Q2; Impact Factor 3.7; Google Scholar h5-index 103)
[**Asaduzzaman, A.,** Thompson, C.C.*, and Uddin, M.J., "Machine Learning Approaches for Skin Neoplasm Diagnosis," in *Biology bioRxiv,* May 2024, DIO: https://doi.org/10.1101/2024.05.12.593773]

8. Sibai, F.N., **Asaduzzaman, A.,** and El-Moursy, A., "Characterization and Machine Learning Classification of AI and PC Workloads," in *IEEE Access*, 2024. (Q1; Impact Factor 3.4; Google Scholar h5-index 266)

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9. Sibai, F., **Asaduzzaman, A.,** and Elmoursy, A., "3D Layout of the Spidergon-Donut On-Chip Interconnection Network," in *Inderscience Int. J. of High-Performance Systems Architecture (IJHPSA),* Vol. 11, No. 3, pp. 137-147, Apr. 2023.

10. Sibai, F., El-Moursy, A.A., **Asaduzzaman, A.,** and Majzoub, S., "Hardware Acceleration of the STRIKE String Kernel Algorithm for Estimating Protein to Protein Interactions," in *IEEE/ACM Transactions on Computational Biology and Bioinformatics (TCBB),* Vol. 19, No. 4, pp. 2272-2283, Aug. 2022.

11. **Asaduzzaman, A.,** Chidella, K.K., and Sibai, F.N., "Computer Applications: A Novel Architecture to Improve the Performance of Audio-Visual Applications," in *the Journal of Management and Engineering Integration (JMEI),* Vol. 15, No. 2, pp. 110-123, Dec. 2022.

12. Uddin, M. J., Crews, B. C., Oltman, C. G., Lo, J. H. -J., Huda, T., Liu, J., Kingsley, P. J., Lin, S., Milad, M., Aleem, A. M., **Asaduzzaman, A.,** McIntyre, J. O., Duvall, C. L., and Marnett, L. J., "Discovery of a Redox-Activatable Chemical Probe for Detection of Cyclooxygenase-2 in Cells and Animals," in *Journal: ACS Chemical Biology*, Vol. 17, No. 7, pp. 1714–1722, July 2022. https://doi.org/10.1021/acschembio.1c00961

13. Chidella, K.K.* and **Asaduzzaman, A.**, "A Novel Wireless Network-on-Chip Architecture with Distributed Directory for Faster Execution and Minimal Energy," in *Elsevier Journal of Computers and Electrical Engineering (COMPELECENG),* Vol. 65, pp. 18-31, 2018.

14. **Asaduzzaman, A.,** Mazumder, S.*, and Salinas, S., "A Promising Security-Aware Architecture for Near Field Communication," in *Inderscience International Journal of Security and Networks (IJSN),* Vol. 13, No. 2, pp. 98-107, 2018.

15. **Asaduzzaman, A.,** Chidella, K.K.*, and Vardha, D.*, "An Energy-Efficient Directory Based Multicore Architecture with Wireless Routers to Minimize the Communication Latency," in *IEEE Transactions on Parallel and Distributed Systems (TPDS)*, Vol. 28, No. 2, pp. 374-385, Feb. 2017.

16. **Asaduzzaman, A.,** Mummidi, A.*, and Sibai, F.N., "An Eye Blinking Password Based Liveness Monitoring System to Improve the Detection of Video Spoofing," in *Journal of Mechatronics, Electrical, and Computer Technology (IJMEC),* Vol. 5, No. 17, pp. 2398-2407, Oct. 2015.

17. **Asaduzzaman, A.** and Gunasekara, G.H.*, "Power and Performance Analysis of Multimedia Applications Running on Low-Power Devices by Cache Modeling," in *Springer Journal of Multimedia Tools and Applications (MTAP),* Vol. 72, No. 1, pp. 207-230, Sept. 2014.

18. **Asaduzzaman, A.**, Chaturvedula, S.R.*, and Pendse, R., "A Novel Folded-Torus Based Network Architecture for Power-Aware Multicore Systems," in *Elsevier Journal of Computers & Electrical Engineering (*COMPELECENG*),* Vol. 39, No. 8, pp. 2494-2506, Nov. 2013.

19. Asmatulu, R., Muppalla, H., Veisi, Z., Khan, W.S., **Asaduzzaman, A.,** and Nuraje, N., "Study of Hydrophilic Electrospun Nanofiber Membranes for Filtration of Micro and Nanosize Suspended Particles," in *Special Issue: Nanocomposite Membranes Journal,* Membranes 2013, 3, 1-x manuscripts; (doi:10.3390/membranes30x000x), Oct. 2013.

20. **Asaduzzaman, A.**, Suryanarayana, V.R.*, and Sibai, F.N., "On level-1 cache locking for high-performance low-power real-time multicore systems," in *Elsevier Journal of Computers & Electrical Engineering (COMPELECENG),* Vol. 39, No. 4, pp. 1333-1345, May 2013.

21. **Asaduzzaman, A.** and Gunasekara, G.H.*, "A Way Cache Locking Scheme Supported by Knowledge Based Smart Preload Effective for Low-Power Multicore Electronics," in *American Scientific Publishers (ASP) Journal of Low Power Electronics (JOLPE),* Vol. 8, No. 6, pp. 1-13, Dec. 2012.

22. **Asaduzzaman, A.,** Sibai, F.N., and Rani, M., "Improving Cache Locking Performance of Modern Embedded Systems via the Addition of a Miss Table at the L2 Cache Level," in *Elsevier Journal of Systems Architecture (JSA),* Vol. 56, No. 4-6, pp. 151-162, April 2010.

23. **Asaduzzaman, A.** and Sibai, F.N., "Impact of Level-2 Cache Sharing on the Performance and Power Requirements of Homogeneous Multicore Embedded Systems," in *Elsevier Journal of Microprocessors and Microsystems (MICPRO),* Vol. 33, No. 5-6, pp. 388-397, Aug. 2009.

24. **Asaduzzaman, A.** and Mahgoub, I., "Cache Modeling and Optimization for Portable Devices Running MPEG-4 Video Decoder," in *Springer Journal of Multimedia Tools and Applications (MTAP),* Vol. 28, No. 1, pp. 239-256, January 2006.

25. Mahgoub, I., Yousif, M., and **Asaduzzaman, A.,** "Evaluation of memory latency in cluster-based cache-coherent multiprocessor systems with different interconnection topologies," in *Elsevier Journal of Computers & Electrical Engineering (*COMPELECENG*),* Vol. 26, Issue 3-4, pp. 207-220, 2000.

b) Selected Conference Papers/Presentations

1. Sibai, F.N., Sibai, A., **Asaduzzaman, A.,** and Abonamah, A., "Machine Learning of Network Events to Recognize Cyber Attacks in EV Power Charging Stations," accepted in *International Conference on Fog and Mobile Edge Computing (FMEC 2025),* Tampa, Florida, USA. May 19-22, 2025.

2. Sibai, F.N., Sibai, A., **Asaduzzaman, A.**, and Abonamah, A., "Machine Learning for Identifying Cyber Attacks on the Electric Vehicle Power Charging Infrastructure," accepted in IEEE SecRIoT workshop/DCOSS-IoT 2025, Tuscany (Lucca), Italy, June 9-11, 2025.

3. **Asaduzzaman, A.,** Pandi, K.R.*, and Thompson, C.C.*, "A Novel Strategy for Boosting Performance and Power Efficiency of Multicore WNoC Systems," under review, in *IEEE High Performance Extreme Computing Conference (HPEC),* Boston, USA, Sept. 15- 19, 2025. (Google Scholar h5-index 26)

4. Uddin, M.R.*, **Asaduzzaman, A.**, Nawar, F.*, and Thompson, C.C.*, "Deep Learning-Driven Task Scheduling Optimization for Enhanced Performance in Edge-Cloud Heterogeneous Systems," under review, in International Conference for High Performance Computing, Networking, Storage, and Analysis (SC25), St. Louis, MO, Nov 16-21, 2025. (Google Scholar h5-index 50)

5. **Asaduzzaman, A.**, Campbell, D.*, and Sibai, F. N., "Impact of the TensorFlow Library on Neural Network Performance for Harnessing Hardware Parallelism," under review, in *IEEE High Performance Extreme Computing Conference (HPEC),* Boston, USA, Sept. 15- 19, 2025. (Google Scholar h5-index 26)

6. Thompson, C. C.*, **Asaduzzaman, A.**, Uddin, M. R.*, and Nawar, F.*, "Impact of HPC Hardware on ML Performance," under review, in *IEEE High Performance Extreme Computing Conference (HPEC),* Boston, USA, Sept. 15- 19, 2025. (Google Scholar h5-index 26)

7. Uddin, M.R.* and **Asaduzzaman, A.**, "Pairing Computations at the Edge and Cloud Servers to Improve Performance of Heterogeneous Systems," in *IEEE International Conference on Fog and Mobile Edge Computing (FMEC)*, Sweden. 2024.

8. Alqaaf, M., Nasution, A.K., Supriyan, R., **Asaduzzaman, A.**, Altaf-Ul-Amin, M., Ono, N., and Kanaya, S., "Neural Network-Based Analysis of Mammography Images for Identifying Breast Cancer Histological Subtypes," in *IEEE International*

Conference on Future Machine Learning and Data Science (FMLDS), Sydney, Australia, 2024.

9. **A. Asaduzzaman**, M. R. Uddin*, and M. R. H. Mondal, "Application of SMOTE with SVM to Analyze Hotel Reviews for High Accuracy," accepted, in *IEEE International Conference on Computer and Information Technology (ICCIT)*, Cox's Bazar, Bangladesh, 2024.

10. **Asaduzzaman, A.** and Campbell, D., "Impact of Computer Graphics Interfaces in High-Level Programming Languages," under preparation, in *IEEE Conference*, 2024.

11. **A. Asaduzzaman,** M. R. Uddin*, N. Nawal*, and M. Ang*, "Reduction of Input Features from Machine Learning Datasets for Water Quality Analysis," in *IEEE International Conference on Artificial Intelligence, Computer, Data Sciences and Applications (ACDSA),* Victoria, Seychelles, 2024.

12. **A. Asaduzzaman,** V. S. P. T. Telikepalli*, and M. R. Uddin*, "Performance Analysis of C and Python Parallel Implementations on a Multicore System Using Particle Simulation," in *IEEE International Conference on Artificial Intelligence, Computer, Data Sciences and Applications (ACDSA)*, Victoria, Seychelles, 2024.

13. **A. Asaduzzaman,** M. R. Uddin*, Y. Woldeyes*, and F. N. Sibai, "A Novel Salary Prediction System Using Machine Learning Techniques," in *IEEE Joint International Conference on Digital Arts, Media and Technology with ECTI Northern Section Conference on Electrical, Electronics, Computer and Telecommunications Engineering (ECTI DAMT & NCON)*, Thailand, 2024, pp. 38-43.

14. **A. Asaduzzaman,** D. D'Souza*, M. R. Uddin*, and Y. Woldeyes*, "Increase Security by Analyzing Password Strength using Machine Learning," in *IEEE Joint International Conference on Digital Arts, Media and Technology with ECTI Northern Section Conference on Electrical, Electronics, Computer and Telecommunications Engineering (ECTI DAMT & NCON),* Thailand, 2024, pp. 32-37.

15. M. R. Uddin*, **A. Asaduzzaman,** K. Le*, and R. R. Medarametla*, "Voice Activated Edge Devices Using Tiny Machine Learning Enabled Microcontroller," in *IEEE Green Technologies (GreenTech) Conference,* Springdale, Arkansas, 2024.

16. M. R. Uddin*, **A. Asaduzzaman,** R. Soza*, and C. Minkler*, "Avian Song Identification Using CNN," in *IEEE Green Technologies (GreenTech) Conference,* Springdale, Arkansas, 2024.

17. **Asaduzzaman, A.,** Mercer, L.*, Uddin, M.R.*, and Woldeyes, Y.*, "Modeling and Analyzing Wind Velocity at Entrance Doors to Avoid Accidents," in *IEEE High Performance Extreme Computing Conference (HPEC),* Boston, USA, Sept. 25- 29, 2023. (Google Scholar h5-index 26)

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18. Sibai, F.N, **Asaduzzaman, A.,** and Sibai, A., "A Comparative Study of Machine Learning Methods for Intrusion Detection," in *IEEE International Conference on Electrical and Electronics Engineering (ICEEE),* Istanbul, Turkey, May 8-10, 2023.

19. Asaduzzaman, A., Kamalakannan, P.*, Altaf-Ul-Amin, M., and Kanaya, S., "Improving Quality of Service in Computer Network Applying the Eight Classes of Service," in IEEE Conference on Science & Contemporary Technologies (ICSCT), pp. 1-6, Dhaka, Bangladesh, Aug. 5-7, 2021.

20. **Asaduzzaman, A.,** Trent, A.*, Osborne, S.*, Aldershof, C.*, and Sibai, F.N., "Impact of CUDA and OpenCL on Parallel and Distributed Computing," in *IEEE International Conference on Electrical and Electronics Engineering (ICEEE),* Antalya, Turkey, April 9-11, 2021.

21. **Asaduzzaman, A.,** Kamalakannan, P.*, and Sibai, F.N., "The Eight Class of Service Model – An Improvement Over the Five Classes of Service," in *IEEE International Conference on Electrical and Electronics Engineering (ICEEE),* Antalya, Turkey, April 9-11, 2021.

22. Asaduzzaman, A., Jojigiri, S.*, Sabu, T.*, and Tailam, S.*, "Studying Execution Time and Memory Transfer Time of Image Processing Using GPU Cards," in IEEE Computing and Communication Workshop and Conference (CCWC), pp. 689-695, Virtual Conference, Las Vegas, NV, Jan. 27-30, 2021. (This paper received the Best Paper Award.)

23. **Asaduzzaman, A.,** Telakapalli, A.*, and Sibai, F.N., "Energy Consumption Analyses for Unmanned Aerial Systems used in Disaster Management," in *IEEE Computing and Communication Workshop and Conference (CCWC),* Virtual Conference, USA, Jan. 27-30, 2021.

24. **Asaduzzaman, A.,** Telakapalli, A., and Sibai, F.N., "Smart Disaster Management using Software-Defined Unmanned Aerial Systems," in *IEEE ComSoc Consumer Communications & Networking Conference (CCNC),* Virtual Conference, USA, Jan. 9-12, 2021.

25. **Asaduzzaman, A.** and Gupta, D., "Geospatial Cyberinfrastructure for Regional Economic Growth," in *IEEE Conference on Electrical Engineering/Electronics, Computer, Telecommunications and Information Technology (ECTI-CON),* Virtual Conference, Phuket, Thailand, June 24-27, 2020.

26. **Asaduzzaman, A.**, Almohaimeed, A.*, and Chidella, K.K.*, "Shared Entry Logger to Eliminate Duplicate Requests to SDN Controller," in *IEEE Computing and Communication Workshop and Conference (CCWC),* Las Vegas, Nevada, 2019.

27. Almohaimeed, A.*, **Asaduzzaman, A.,** Chidella, K.K.*, and Shahin, F.*, "Link-Renaming Technique for Efficiently Increasing Similarity among SDN Entries," in *IEEE Joint Int'l Conf. on Informatics, Electronics & Vision (ICIEV) and Int'l Conf. on Imaging, Vision & Pattern Recognition (icIVPR),* Spokane, WA, USA, 2019.

28. Almohaimeed, A.* and **Asaduzzaman, A.**, "Dedicated Backup Units to Alleviate Overload on SDN Controllers," in *IEEE Computing and Communication Workshop and Conference (CCWC),* Las Vegas, Nevada, Jan. 7-9, 2019.

29. Chidella, K.K.*, **Asaduzzaman, A.**, and Almohaimeed, A.*, "Impact of Non-Uniform Subnets on Wireless Network-on-Chip Performance," in *IEEE Computing and Communication Workshop and Conference (CCWC),* Las Vegas, Nevada, 2019.

30. Almohaimeed, A.* and **Asaduzzaman, A.**, "Introducing Edge Controlling to Software Defined Networking to Reduce Processing Time," in *IEEE Computing and Communication Workshop and Conference (CCWC),* Las Vegas, Nevada, 2019.

31. Almohaimeed, A.* and **Asaduzzaman, A.**, "A Novel Moving Target Defense Technique to Secure Communication Links in Software-Defined Networks," in *IEEE International Conference On Mobile and Secure Services (MobiSecServ),* Miami Beach, Florida, March 2-3, 2019.

32. Almohaimeed, A.* and **Asaduzzaman, A.**, "Incorporating Monitoring Points in SDN to Ensure Trusted Links Against Misbehaving Traffic Flows," in *IEEE International Conference On Mobile and Secure Services (MobiSecServ),* Miami Beach, Florida, March 2-3, 2019.

33. Almohaimeed, A.*, **Asaduzzaman, A.,** Singh, G.*, "A Tiling Approach for Multiple Parallel Routing in Software-Defined," in *IEEE Long Island Systems, Applications and Technology Conference (LISAT),* Farmingdale, NY, 2019.

34. Almohaimeed, A.* and Asaduzzaman, A., "Distribution Model for OpenFlow-Based Networks," in IEEE Ubiquitous Computing, Electronics & Mobile Communication Conference (UEMCON), pp. 603-608, New York, NY, Nov. 08-10, 2018.

35. **Asaduzzaman, A.,** Mashhadi, F.*, and Rani, M., "Applying Learner-Centered Project-Oriented Approach to Enhance STEM Education Experience – A Case Study," in *Midwest Section Conference of the American Society for Engineering Education (ASEE)*, Stillwater, OK, Sept. 24-26, 2017.

36. Asaduzzaman, A., Mitra, P.*, Chidella, K.K.*, Saeed, K.A., Cluff, K., and Mridha, M.F., "A Computer-Assisted Mammography Technique for Analyzing Breast Cancer," in IEEE International Conference on Advances in Electrical Engineering (ICAEE), pp. 105-110, Dhaka, Bangladesh, Sept. 28-30, 2017.

37. Chidella, K.K.*, **Asaduzzaman, A.,** Chintam, A.*, and Mridha, M.F., "Optimization of Design Framework for Real-Time Microcontroller Applications," in *IEEE International Conference on Advances in Electrical Engineering (ICAEE)*, Dhaka, Bangladesh, Sept. 28-30, 2017.

38. Mashhadi, F.*, Asaduzzaman, A., and Chidella, K.K.*, "Throughput Comparison of Shuffle-Exchange Networks with Additional Stages due to Resource Scheduling," in IEEE Green Technologies Conference (GreenTech), pp. 297-303, Denver, CO, Mar. 29-31, 2017.

39. Chidella, K.K.* and **Asaduzzaman, A.**, "Prior Detection of Explosives to Defeat Tragic Attacks using Knowledge Based Sensor Networks," in *IEEE Green Technologies Conference (GreenTech)*, Denver, CO, Mar. 29-31, 2017.

40. Mashhadi, F.*, **Asaduzzaman, A.**, and Mridha, M.F., "A Novel Resource Scheduling Approach to Improve Reliability of Shuffle-Exchange Networks," in *IEEE International Conference on Imaging, Vision, and Pattern Recognition (icIVPR)*, Dhaka, Bangladesh, Feb. 13-14, 2017. (Acceptance rate is 25%)

41. **Asaduzzaman, A.**, Mazumder, S.*, Salinas, S., and Mridha, M.F. "A Security-Aware Near Field Communication Architecture," in *ACM/IEEE International Conference on Networking, Systems and Security (NSysS)*, BUET, Dhaka, Bangladesh, Jan. 5-8, 2017. (Acceptance rate is 26%)

42. **Asaduzzaman, A.** and Chidella, K.K.*, "A Novel Directory Based Hybrid Cache Coherence Protocol for Shared Memory Multiprocessors," in *IEEE International Symposium on Phased Array Systems and Technology (PAST),* Boston, Massachusetts, Oct. 18-21, 2016.

43. **Asaduzzaman, A.**, Mazumder, S.*, and Salinas, S., "An Auspicious Secure Processing Technique for Near Field Communication Systems," in *IEEE Annual Ubiquitous Computing, Electronics & Mobile Communication Conference (UEMCON),* New York City, USA, Oct. 20-22, 2016.

44. Moniruzzaman, M.*, **Asaduzzaman, A.,** and Mridha, M.F., "Optimizing Controller Area Network System for Vehicular Automation," in *IEEE International Conference on Informatics, Electronics and Vision (ICIEV),* Dhaka, Bangladesh, May 13-14, 2016.

45. Mabbu, V.*, **Asaduzzaman, A.,** and Mridha, M.F., "A Novel Semantic Knowledge Engine Using Automated Knowledge Extraction from World Wide Web," in *IEEE International Conference on Informatics, Electronics and Vision (ICIEV),* Dhaka, Bangladesh, May 13-14, 2016.

46. **Asaduzzaman, A.**, Moniruzzaman, M.*, Chidella, K.K.*, and Tamtam, P., "An Efficient Simulation Method Using VisualSim to Assess Autonomous Power Systems," *in IEEE SoutheastCon 2016,* Norfolk, Virginia, Mar. 30-Apr. 3, 2016.

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49. **Asaduzzaman, A.** and Asmatulu, R., "A Learner-Centered Computational Experience in Nanotechnology for STEM Students," *in IEEE Integrated STEM Education Conference (ISEC),* Princeton University, New Jersey, March 5, 2016.

50. **Asaduzzaman, A.,** Mummidi, A.*, Mridha, M.F., and Sibai, F.N., "Improving Facial Recognition Accuracy by Applying Liveness Monitoring Technique," *in IEEE International Conference on Advances in Electrical Engineering (ICAEE),* Dhaka, Bangladesh, Dec. 17-19, 2015. (This paper received the Best Paper Award.)

51. **Asaduzzaman, A.**, Martinez, A.*, and Sepehri, A.*, "A Time-Efficient Image Processing Algorithm for Multicore/Manycore Parallel Computing," *in IEEE SoutheastCon 2015*, Fort Lauderdale, Florida, April 9-12, 2015.

52. **Asaduzzaman, A.**, Chidella, K.K.*, and Sibai, F.N.*, "A Smart Data Logger for Enhancing Data Communication in Wi-Fi Based Mobile Systems," *in IEEE SoutheastCon 2015*, Fort Lauderdale, Florida, April 9-12, 2015.

53. **Asaduzzaman, A.**, Gummadi, D.*, and Waichal, P.*, "A Promising Parallel Algorithm to Manage the RSA Decryption Complexity," *in IEEE SoutheastCon 2015*, Fort Lauderdale, Florida, April 9-12, 2015.

54. **Asaduzzaman, A.**, Chidella, K.K.*, and Mridha, M.F., "A Time and Energy Efficient Parking System Using ZigBee Communication Protocol," *in IEEE SoutheastCon 2015*, Fort Lauderdale, Florida, April 9-12, 2015.

55. Chidella, K.K.*, **Asaduzzaman, A.**, and Mridha, M.F., "Early Estimation of Cache Properties for Multicore Embedded Processors," *in ISERD International Conference on Engineering, Technology, and Management (ICETM),* Bangkok, Thailand, May 16, 2015.

56. **Asaduzzaman, A.,** Moniruzzaman, M.*, and Tamtam, P., "Efficient Management of Renewable Solar Energy for Vehicular Applications," *in ISERD International Conference on Engineering, Technology, and Management (ICETM),* Bangkok, Thailand, May 16, 2015. (This paper received the Excellent Paper Award.)

57. Yip, C.M.* and **Asaduzzaman, A.**, "A Promising CUDA-Accelerated Vehicular Area Network Simulator Using NS-3," *in 33rd IEEE International Performance Computing and Communications Conference (IPCCC),* Austin, TX, Dec. 5-7, 2014.

58. **Asaduzzaman, A.**, Chidella, K.K.*, and Mridha, M., "A Smart Embedded System for Better Detection of Perilous Gases," *in 8th International Conference on Software, Knowledge, Information Management and Applications (SKIMA),* Dhaka, Bangladesh, Dec. 18-20, 2014.

59. Whitman, L., Namboodiri, V., **Asaduzzaman, A.,** Han, K., and Tamtam, P., "Technology to aid instructional effectiveness and improve STEM educational experiences," *in 2014 American Society for Engineering Education (ASEE) Midwest Section Conference*, Fort Smith, AR, Sept. 24-26, 2014.

60. **Asaduzzaman, A.**, Lee, H.Y.*, and Gummadi, D.*, "The Impact of Thread Synchronization and Data Parallelism on Multicore Game Programming," *in WORLDCOMP Conference: Parallel and Distributed Processing Techniques and Applications (PDPTA),* Las Vegas, NV, July 21-24, 2014.

61. **Asaduzzaman, A.**, Gummadi, D.*, and Yip, C.M.*, "A Talented CPU-to-GPU Memory Mapping Technique," *in IEEE SoutheastCon 2014*, Lexington, Kentucky, March 13-16, 2014.

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63. Rahman, M, and **Asaduzzaman, A.**, "Parallelizing Computation of Elastodynamic Response on Arbitrary Domains Using GPU," *in IEEE SoutheastCon 2014*, Lexington, Kentucky, March 13-16, 2014.

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65. **Asaduzzaman, A.**, Suryanarayana, V.R.*, and Rahman, M., "Performance-Power Analysis of H.265/HEVC and H.264/AVC Running on Multicore Cache Systems," *in 2013 International Symposium on Intelligent Signal Processing and Communication Systems (ISPACS)*, Naha, Okinawa, Japan, Nov. 12-15, 2013.

66. Husain, M., Asmatulu, R., **Asaduzzaman, A.,** et al, "Magnetic Nanoparticles-Based Water Treatment System for Arsenic Removal," *in Governor's Conference on the Future of Water in Kansas*, Manhattan, Kansas, Oct. 24-25, 2013.

67. **Asaduzzaman, A.,** Yip, C.M.*, Asmatulu, R., and Rahman, M., "CUDA/C Based 'Green' Technology for Very Fast Analysis of Nanocomposite Properties," *in SAMPE Tech 2013 Conference*, Wichita, Kansas, Oct. 21-24, 2013.

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69. **Asaduzzaman, A.** and Yip, C.M.*, "Develop Task/Data Regrouping Based Parallel Algorithm for Multicore/Manycore Systems and Educate Parallel Computing to STEM Students," *in 2013 Kansas NSF EPSCoR Annual Meeting*, Lawrence, Kansas, Oct. 7-8, 2013.

70. **Asaduzzaman, A.**, Asmatulu, R., and Pendse, R., "Thinking in Parallel: Multicore Parallel Programming for STEM Education," *in the American Society for Engineering Education (ASEE) Midwest Section Annual Conference*, Salina, Kansas, Sept. 18-20, 2013.

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72. **Asaduzzaman, A.**, Yip, C.M.*, Kumar, S., and Asmatulu, R.; "Fast, Effective, and Adaptable Computer Modeling and Simulation of Lightning Strike Protection on Composite Materials," *in IEEE SoutheastCon Conference 2013*, Jacksonville, Florida, April 4-7, 2013.

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82. **Asaduzzaman, A.**, Sibai, F.N., and Abonamah, A. "An Effective Dynamic Way Cache Locking Scheme to Improve the Predictability of Power-Aware Real-Time Embedded Systems," *in ICECS-2011,* Beirut, Lebanon, Dec. 11-14, 2011.

83. **Asaduzzaman, A.,** "Effective Level-1 Cache Locking Strategies for Power-Aware Real-Time Multicore Systems," *in ICCIT-2011 AIUB,* Dhaka, Dec. 22-24, 2011.

84. **Asaduzzaman, A.,** Hassan, W.*, and Koivisto, D., "Multicore Distributed Processing Architecture with Miss Table in Radar Systems for Real-Time Severe Weather Analysis," *in 2011 IEEE Radar Conference (RadarCon)*, Kansas City, MO, May 23-27, 2011.

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86. **Asaduzzaman, A.** and Sibai, F.N., "Investigating Cache Parameters and Locking in Predictable and Low Power Embedded Systems," *in IEEE International Conference on Microelectronics (ICM)*, Cairo, Egypt, Dec. 19-22, 2010.

87. **Asaduzzaman, A.,** Mahgoub, I., and Sibai, F.N., "Evaluation of the Impact of Miss Table and Victim Caches in Parallel Embedded Systems," *in IEEE International Conference on Microelectronics (ICM)*, Cairo, Egypt, Dec. 19-22, 2010.

88. Rani, M., Mridha, M.F., and **Asaduzzaman, A.,** "Investigation of the Impact of Multimedia Applications on Multicore Multimedia Systems," *in IEEE International Conference on Electrical and Computer Engineering (ICECE)*, Dhaka, Bangladesh, Dec. 18-20, 2010.

89. Rani, M. and **Asaduzzaman, A.**, "Power Aware Design of Second Level Cache for Multicore Embedded Systems," *in IEEE SoutheastCon2010*, Charlotte-Concord, North Carolina, Mar. 2010.

90. **Asaduzzaman, A.** and Sibai, F.N., "Conceptual Modeling of Petascale Computer Systems," *in IEEE International Conference on Innovations in Information Technology (IIT),* Al-Ain, United Arab Emirates, Dec. 2009.

91. **Asaduzzaman, A.**, "Modeling of High-Performance Multi-Core Computing Systems," *in Huntsville Simulation Conference (HSC) sponsored by the Society for Modeling and Simulation International (SCS) and hosted by the Alabama Modeling and Simulation Council (AMSC),* Huntsville, Alabama, Oct. 2009.

92. **Asaduzzaman, A.**, Rani, M., and Koivisto, D., "Level-2 Shared Cache versus Level-2 Dedicated Cache for Homogeneous Multicore Embedded Systems," *in International Conference on Computing, Communications and Control Technologies (CCCT) in the context of IMETI,* Orlando, Florida, July 2009.

93. **Asaduzzaman, A.,** Mahgoub, I., and Sibai, F.N., "Impact of L1 Entire Locking and L2 Way Locking on Performance, Power Consumption, and Predictability of Multicore Real-Time Systems," *in ACS/IEEE International Conference on Computer Systems and Applications (AICCSA),* Rabat, Morocco, May 2009.

94. **Asaduzzaman, A.** and Sibai, F.N., "Performance and Energy Consumption Optimization by Tuning Level-2 Cache Attributes for Real-Time Signal Processing Systems," *in IEEE SoutheastCon 2009 hosted by the IEEE Atlanta Section and the Georgia Tech IEEE Student Branch,* Atlanta, Georgia, March 2009.

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and Technology for Development (IASTED) Conference on Parallel and Distributed Computing and Systems (PDCS), Orlando, Florida, Nov. 2008.

97. **Asaduzzaman, A.,** Niranjan, L., Mahgoub, I., and Sibai, F.N., "Evaluation of I-Cache Locking Technique for Real-Time Embedded Systems," *in IEEE International Conference on Innovations in Information Technology (IIT),* Dubai, United Arab Emirates, Nov. 2007.

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100. **Asaduzzaman, A.**, Rani, M., and Koivisto, D., "Performance Analysis of Scheduling-Based Load Balancing for Distributed and Parallel Systems using VisualSim," *in International Conference on Software and Data Technologies (ICSOFT),* Barcelona, Spain, July 2007.

101. **Asaduzzaman, A.** and Mahgoub, I., "Cache Optimization for Embedded Systems Running H.264/AVC Video Decoder," *in ACS/IEEE International Conference on Computer Systems and Applications (AICCSA),* Dubai/Sharjah, United Arab Emirates, March 2006.

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c) Patents

1. **Asaduzzaman, A.,** "Noninvasive Blood Glucose Monitoring System," under preparation, USPTO Patent.

2. Eslami, A., **Asaduzzaman, A.,** and Erjaei, M.H., "Internet-Based Remote Control and Monitoring System for Commercial Doors Using Mobile Devices," US Patent Number 10689898, US Patent and Trademark Office, June 23, 2020.

d) Oral/Poster Presentations

1. (Poster) **Asaduzzaman, A.,** Uddin, M.R., Kutala, G.S., and Woldeyes, Y., "Accuracy Analysis of Hotel Review Information using Machine Learning," in *IEEE High Performance Extreme Computing Conference (HPEC),* Boston, USA, Sept. 25- 29, 2023.

2. (Oral) **Asaduzzaman, A.,** "Automated Prescreening Data Analysis for Healthcare Services," Wichita Healthcare Summit, WSU Metroplex Complex, March 22, 2024.

3. (Oral) **Asaduzzaman, A.,** Nawal, N., Bogireddy, S.R., and Zhang, H., "Mapping Shops to Intersections for Network Simulation using PETSc DMNetwork Libraries," PETSc 2023 User Meeting, Chicago, IL, June 05-07, 2023.

4. (Poster) **Asaduzzaman, A.,** Campbell, D., Nawal, N., and Zhang, H., "Network Application Modeling and Simulation on Exascale Machines," Exascale Computing Project (ECP) Annual Meeting, Houston, TX, Jan. 17-20, 2023.

5. (Oral) **Asaduzzaman, A.,** "A Real-Time Imaging System to Assist Surgical Procedures," Wichita State University Analytics Showcase, Nov. 5, 2021.

6. (Oral) **Asaduzzaman, A.,** Chidella, K.K., and Sibai, F.N., "A Novel Multicore Architecture to Improve the Computing Performance for Audio Visual Applications," International Conference on Industry, Engineering, and Management Systems (IEMS), Virtual, Mar. 15-16, 2021.

7. (Oral) **Asaduzzaman, A.**, "Open2C framework and OpenSoC Fabric to build up a communication-aware level-2 cache controller," Sustainable Research Pathways Workshop, virtually organized by Sustainable Horizons Institute and Lawrence Berkeley National Laboratory, Berkeley Lab, CA, Dec. 1-2, 2020.

8. (Oral) **Asaduzzaman, A.**, "Geospatial Cyberinfrastructure for Regional Economic Growth and Sustainability," Sustainable Research Pathways Workshop, organized by Sustainable Horizons Institute and Lawrence Berkeley National Laboratory, Berkeley Lab, CA, Dec. 2-3, 2019.

9. (Oral) Chidella, K.K.*, **Asaduzzaman, A.**, and Mashhadi, F.*, "Knowledge Based Prior Detection of Explosives to Defeat Catastrophic Attacks," Humane Water Conference, Wichita, KS, Oct. 28, 2017.

10. (Oral) Mashhadi, F.*, **Asaduzzaman, A.**, and Chidella, K.K.*, "Promising Shuffle-Exchange Networks for Multicore/Many-core Computer Systems," Humane Water: International Conference 2017 on Water & Energy, ..., and Science & Technology, Wichita, KS, Oct. 28, 2017.

11. (Oral) **Asaduzzaman, A.,** Mabbu, V.*, Jain, J.R.*, Chintam, A.*, and Emmanuel, S.R.*, "Open Source Linux Based Network File System Connector for Apache Spark," *in Kansas Linux Fest 2016 at Wichita State University,* KS, May 21, 2016.

12. (Oral) Mitra, P.*, Chidella, K.K.*, and **Asaduzzaman, A.,** "A Promising MATLAB Assisted Image Segmentation for Detecting Breast Cancer," *in the Graduate Research and Scholarly Projects (GRASP) Symposium at Wichita State University,* Wichita, KS, April 29, 2016.

13. (Poster) Chidella, K.K.* and **Asaduzzaman, A.,** "A Directory Based Hybrid Cache Update Strategy to Reduce Memory Latency of Shared Memory Multiprocessors," *in the Graduate Research and Scholarly Projects (GRASP) Symposium at Wichita State University,* Wichita, KS, April 29, 2016.

14. (Poster) Mazumder, S.* and **Asaduzzaman, A.,** "A Comparative Study of Time and Energy Savings Due to Near Field Communication Technology," *in the Graduate Research and Scholarly Projects (GRASP) Symposium at Wichita State University,* Wichita, KS, April 29, 2016.

15. (Poster) Mabbu, V.* and **Asaduzzaman, A.,** "A Semantic Knowledge Engine Using Automated Knowledge Extraction from World Wide Web," *in the Graduate Research and Scholarly Projects (GRASP) Symposium at Wichita State University,* Wichita, KS, April 29, 2016.

16. (Poster) Jain, J.R.* and **Asaduzzaman, A.,** "A Novel Highly Decentralized Information Accountability Framework to Enhance Data-Security of Cloud Computing," *in the Graduate Research and Scholarly Projects (GRASP) Symposium at Wichita State University,* Wichita, KS, April 29, 2016.

17. (Oral) Chidella, K.K.*, Mitra, P.*, and **Asaduzzaman, A.,** "High Performance Computer Analysis of Mammogram Images for Treating Breast Cancer," *in 24th Annual University of Kansas School of Medicine at Wichita Research Forum,* Wichita, KS, April 21, 2016.

18. (Poster) **Asaduzzaman, A.,** Mabbu, V.*, Jain, J.R.*, and Emmanuel, S.R.*, "NetApp NFS Connector for Spark Systems," NetApp University Day 2016, Sunnyvale, CA, February 22, 2016.

19. (Poster) Mitra, P.*, **Asaduzzaman, A.,** and Chidella, K.K.*, "Application of High-Performance Pattern Recognition and Protein Binding in Cancer Treatment," *in 23rd*

Annual University of Kansas School of Medicine at Wichita Research Forum, Wichita, KS, April 29, 2015.

20. (Poster) Mummidi, A.*, **Asaduzzaman, A.**, Chidella, K.K.*, Moniruzzaman, M.*, and StAubin, R.*, "Poster: An Effective Computing System for Managing Sustainable Energy in Vehicles," *in Oklahoma Supercomputing Symposium 2014,* Norman, Oklahoma, Sept. 23-24, 2014.

21. (Poster) Yip, C.M.* and **Asaduzzaman, A.,** "GPU-Accelerated "Green" Technology for Fast Analysis of Nano-Composites," *in the Graduate Research and Scholarly Projects (GRASP) Symposium at Wichita State University,* Wichita, Kansas, April 25, 2014.

22. (Poster) Yip, C.M.*, **Asaduzzaman, A.**, and Rahman, M., "Poster: Thinking in Parallel: to Save Time, Energy, and Climate using Multithreaded Concurrent/Parallel Processing on Multicore/Manycore Systems," *in 2013 Oklahoma Supercomputing Symposium*, Norman, Oklahoma, Oct. 1-2, 2013.

23. Allen, M.P.*, Yip, C.M.*, and **Asaduzzaman, A.**, "Poster: Educate Science, Technology, Engineering, and Mathematics (STEM) Students to 'Think in Parallel' for Future Challenges in Computing," *in the ASEE'13 Midwest Section Annual Conference*, Salina, Kansas, Sept. 18-20, 2013.

24. (Poster) Yip, C.M.* and **Asaduzzaman, A.,** "A Microprocessor Based Green-Device for Analyzing Students' Classroom Attendance and Performance," *in the Graduate Research and Scholarly Projects (GRASP) Symposium at Wichita State University,* Wichita, KS, April 18, 2012.

e) Book Chapters / Books

1. **Asaduzzaman, A.** and Asmatulu, R., "CUDA-Based Very Fast Analysis of Sacrificial Nanomaterials for Epoxy Coatings," accepted, Advances in Nanotechnology, Nova Science Publishers, Inc. (NOVA), 2022.

2. **Asaduzzaman, A.,** Sibai, F.N., Kanaya, S., Altaf-Ul-Amin, M., Md. Jashim Uddin, Chidella, K.K., and Mitra, P., "Image Analysis with Machine Learning Algorithms to Assist Breast Cancer Treatment," *in Springer ViSA13 Book (Vision, Sensing and Analytics: Integrative Approaches),* 2020.

3. **Asaduzzaman, A.** and Sibai, F.N., "On the Design of Multicore Architectures Guided by a Miss Table at Level-1 and Level-2 Caches to Improve Predictability and Performance/Power Ratio", *in Multicore Hardware-Software Design and Verification Techniques*, eISBN: 978-1-60805-225-7, pp.19-32 (14), 2011.

f) Technical Reports

1. **Asaduzzaman, A.,** Mahgoub, I., and Yousif, M., "Evaluation of Memory … Topologies", *FAU Technical Report (TR-CSE-98-7),* Jan., 1998, Florida, USA.
2. **Asaduzzaman, A.,** Et al, "Computer Aided Design of Batwing Antenna Arrays by Standing Wave Modeling of Current Distribution", *BUET,* Dec., 1994, Dhaka.

g) White Papers

1. **Asaduzzaman, A.,** Rutherfoord, V., and Mahgoub, I., "Component-based Design for Multi-core Embedded Systems", *FAU CSE Dept and Motorola-FAU One Pass to Production (OPP) project,* Dec., 2005, Florida, USA.

2. **Asaduzzaman, A.** and Mahgoub, I., "Architecture Exploration Using Performance Modeling", *FAU CSE Dept and Motorola-FAU One Pass to Production (OPP) project,* Dec., 2004, Florida, USA.

h) Professional/Research Services

1. **NSF Reviewer:** Serve as panel reviewer of NSF programs including Resilient & Intelligent NextG Systems, Graduate Research Fellowships Program (GRFP), EPSCoR RSV Panel-2, and Transforming Undergraduate Education in Science (CS) Type-1, 2012-present.

2. **Journal Reviewer:** IEEE Transactions on Cloud Computing; IEEE Access; Elsevier Journal on Computers and Electrical Engineering; Springer Journal on Design Automation for Embedded Systems; Springer Journal on Multimedia Tools and Applications; Elsevier Journal on Ad Hoc Networks; Springer Journal on Molecular Neurobiology, and MDPI Algorithms.

3. **R5 Meeting Chair and R5 Program Chair:** 2025 IEEE Green Technologies (GreenTech) Conference and Region 5 Annual Meeting, Wichita, KS, 2025.

4. **Paper Competition Chair:** IEEE Region 5 Student Paper Competition, Virtual Conference (due to COVID-19 pandemic), 2020.

5. **Technical Program Chair:** American Society for Engineering Education (ASEE) Midwest Section Conference (AMSC'19), Wichita, KS, USA, 2019.

6. **Technical Committee Chair:** Co-Chair of Track/Area: High-Performance Low-Power Computing in the IEEE Int'l Conference on Informatics, Electronics & Vision (ICIEV'14), Dhaka University, Bangladesh.

7. **TPC/IPC Member:** IEEE Conferences include ABC, CCWC, ECTI-CON, ICCIT, ICEEE, ICIEV, ICOSST, ICSCT, IEMCON, IPCCC, ISEC, NoCArc, SECon,

SKIMA, TENSYMP, and VLSIS, and Scopus Bulletin of Electrical Engineering and Informatics (BEEI) Conference.

8. **Track Chair:** International Conference on Industry, Engineering, and Management Systems (IEMS).

9. **Session Chair:** IEEE Integrated STEM Education Conference, WORLDCOMP PDPTA, IASTED PDCS, and IEMS Conference.

10. **WSU Training & Technology Team (T3) Resource Panel Involvement:** Monitor and review developments in Healthcare Technology.

i) Selected Presentations

1. **Invited Speaker:** "Navigating the Challenges of Machine Learning in Genomic Data Analysis," *IEEE International Conference on Information and Communication Technology (ICICT) at Bangladesh University of Engineering and Technology (BUET)*, Oct. 21, 2024, Dhaka, Bangladesh.

2. **Invited Speaker:** "Next Generation Information Processing: A Collaborative Approach," *Bangladesh University of Engineering and Technology (BUET)*, May. 21, 2022, Dhaka, Bangladesh.

3. **Invited Speaker:** "High Performance Computing, Machine Learning, and Big Data Analytics for Common Good," *Computational Systems Biology Lab at Nara Institute of Science and Technology*, Jan. 14, 2020, Nara, Japan.

4. **Keynote Speaker:** "Image Processing with Machine Learning to Assist Real-Time Breast Cancer Analysis," *Advanced Machine Learning Lab, Bangladesh University of Business and Technology (BUBT)*, Sept. 20, 2020, Dhaka, Bangladesh.

5. **Graduate Seminar Talk:** "Fast Effective Analysis of 'Digital' Mammogram Images for Breast Cancer Treatment," Department of Electrical and Computer Engineering, College of Engineering and Technology, Old Dominion University, April 1, 2016, Norfolk, Virginia, USA.

6. **Invited Guest Speaker:** "CAPPLab Research Activities: Efficient Management of Renewable Energy Systems," *at the joint conference of the International Society for Engineering Research and Development (ISERD) and International Institute of Engineers and Researchers (IIER),* May 16, 2015, Bangkok, Thailand.

7. **Invited Speaker:** "Applications of High Performance Computing to Healthcare Technology," *at the University of Asia Pacific (UAP),* May 21, 2015, Dhaka, Bangladesh.

8. **Invited Speaker:** "SMT/GPU Provides High Performance; at WSU CAPPLab, we can help you!" in *Bogazici University,* June 2, 2014, Istanbul, Turkey.

9. **Invited Speaker:** "Teaching Energy-Efficient High-Performance Computing Systems? WSU CAPPLab may help!," *in International Conference on Informatics, Electronics & Vision (ICIEV'14)*, May 23-24, 2014, Dhaka, Bangladesh.

10. **Guest Speaker:** "Multicore CPU and Manycore GPU Provides the Ultimate Performance; at WSU CAPPLab, we can help!," *at the University of Colombo School of Computing (UCSC)*, Dec. 2012, Colombo, Sri Lanka.

11. **Guest Speaker:** "Multicore architecture with SMT/GPGPU provides the ultimate performance; at WSU CAPPLab, we can help!," *in the Fall IEEE event (for Wichita Professional Section and WSU Student Section)*, Nov. 2012, Wichita, KS, USA.

PROFESSIONAL EXPERIENCES:
SUMMARY:

I am experienced with collaborative research and projects that involve research-oriented universities and leading high-tech industries in the US. I have over 25 years of demonstrated teaching excellence in university education in the areas of computer architecture, parallel computing, embedded systems, and performance-power evaluation. I am highly skilled in information technology (IT) with over a decade of experience in working with and working for major IT corporate clients using cutting edge technology. I have acquired extraordinary knowledge and experience of successfully applying innovative techniques for diverse populations of learners into classroom and online teaching. I have served as the principle investigator of grants from agencies including Kansas NSF EPSCoR, Argonne Nat'l Lab, NVIDIA, NetApp, and CybertronPC. I have served as reviewer of NSF programs and as executive member of IEEE Region 5. I have been serving as reviewer of refereed journals and as TPC/IPC member of peer-reviewed conferences.

Aug. 2024-Present **Professor of Computer Engineering,** Wichita State University
Associate Chair, Electrical and Computer Engineering Department
1845 Fairmount St, Wichita, Kansas 67260-0083, USA
- In addition to the research/teaching activities as an associate professor (see below), I serve on many committees at the department, college, university, and community levels.

Aug. 2016-July 2024 **Associate Professor of Computer Engineering,** Wichita State University
1845 Fairmount St, Wichita, Kansas 67260-0083, USA
- In addition to the research/teaching activities as an assistant professor (see below), I serve on many committees at the department, college, university, and community levels.

Aug. 2010-July 2016 **Assistant Professor of Computer Architecture,** Wichita State University
1845 Fairmount St, Wichita, Kansas 67260-0083, USA

- Conduct advanced research in the area of Computer Science and Engineering (e.g., high-performance low-power computing); publish scientific findings supported by experimental results; and seek external research funding.
- Teach various graduate and undergraduate courses for the Department of Electrical Engineering and Computer Science (EECS). Courses I taught include Intro to Computer Architecture; Algorithm Design Methodologies; Microprocessor Based Systems; Multicore Arch & Programming; and High Performance Low Power Computers.
- Supervise graduate (Ph.D./M.S.) dissertation/thesis and undergraduate research; advise undergraduate students.
- Improve/develop existing/new courses, syllabi, and overall course structures; administer tests, projects, and all grades.
- Serve as EECS Webmaster, member of EECS Curriculum & Assessment Committee and CoE Learning Enhancement Committee.
- Provide additional/volunteer services to the department, college, university, and the local community as needed.

July 2006-July 2010 **Specialist Computer Applications,** Florida Atlantic University
777 Glades Road, Boca Raton, Florida 33431

- Train how to use computer applications including Oracle Database and Crystal Reports in a classroom/lab environment; design and develop training materials and requirements documents.
- Provide IT customer support regarding hardware/software issues.
- Design, develop, and maintain various cross-platform computer applications; assess new software/ hardware; and install/upgrade, configure, troubleshoot them as needed.

Aug. 2003-Aug.2006 **Teaching Instructor/Assistant,** Florida Atlantic University
777 Glades Road, Boca Raton, Florida 33431

- Taught various undergraduate courses for the Department of Computer and Electrical Engineering and Computer Science (CEECS), including Programming Microcontrollers in C, Intro to Microprocessor Systems, Intro to Database Structures, and Foundation of Computer Science.
- Developed syllabus and overall course structure.
- Administered exams, assignments, projects, and all grades.
- Helped faculty members by doing a variety of tasks such as grading.
- Provided a positive environment in which students are encouraged to be actively engaged in the learning process.

Aug. 2003-Dec. 2004 **Research Associate,** Florida Atlantic University
777 Glades Road, Boca Raton, Florida 33431

- Conducted research for Motorola-FAU projects on Architectural Optimization by Performance Modeling and Component-Based Modeling for Multimedia Applications.
- Worked on Motorola-FAU Research Grants Executable process Flow (Grant 670177 in 2003) and One Pass to Production (Grant 670190 in 2004), PI Prof. Borko Furht and Co-PI Prof. Imad Mahgoub.
- Presented research work at Motorola and conferences.
- Published research work in journal and conference proceedings.

May 2001-July 2003 **IT Consultant,** BlueCross and BlueShield of Florida /Ajilon
4800 Deerwood Campus Pkwy., Jacksonville, Florida 32256

- Designed and developed C/Pro*C-Tuxedo-Gentran Pipelines to process CF I/P, Med A/B, 837 I/P claims.
- Designed and developed Database related applications using Oracle tools for internal use (like tracing down Virtual Office Service Center Tickets) following BCBSFL standards for coding and documentation.
- Supported the EGW-VO group with analyzing and resolving service request tickets.
- Administered Gentran software application (Server, Client, and users) for EGW-VO group.

Dec. 1997-Apr. 2001 **Software Engineer,** ECI IP Inc.
8160 Baymeadows Way, Jacksonville, FL 32256

- Designed, developed, and maintained databases, applications, and reports using the cutting-edge technology from Microsoft, Oracle, and Seagate.
- Created packages, procedures, and functions for data extractions and interface data from Oracle/Java applications.
- Designed, developed, and maintained HLD, ERD, Data Dictionary (DD), and PL/SQL codes.
- Trained QA Testing Group databases applications; worked with QA group to test the databases and applications.

Aug. 1997-Dec. 1997 **Graduate Assistant,** University of Florida
Department of Computer & Information Science & Engineering
E301 CSE Building, Gainesville, Florida 32611

Jan. 1996-Aug. 1997 **Instructor and Graduate Assistant**, Florida Atlantic University
777 Glades Road, Boca Raton, Florida 33431

- As instructor, I developed syllabus and overall course structure, taught classes, and administered all grades for courses including Intro to Microprocessor-Based System Lab and Programming in C and Data Structures.
- As Graduate Assistant, helped the course instructor with developing the syllabus and grading the tests and assignments.

COURSES TAUGHT:
(UG for Undergraduate level and GR for Graduate level)

Wichita State University	♦ (UG) Intro to Computer Architecture (online/hybrid/classroom) ♦ (UG) Microprocessor-Based System Design/Lab (Assembly and C) ♦ (UG) Modeling, Simulation, and Analysis (developing) ♦ (UG/GR) High Performance Computer Systems ♦ (UG/GR) Computer-Based Cybersecurity ♦ (UG/GR) Applied Parallel Computing (from UCB) ♦ (GR/UG) Machine Learning Essentials and Applications ♦ (GR/UG) Parallel Computing (using OpenMP, MPI-2, CUDA) ♦ (GR/UG) Embedded Systems Programming (using C/C++) ♦ (GR) Computer Systems in Data Analytics ♦ (UG) Algorithm Design Methodologies (C/C++) ♦ (UG) Introduction to Digital Design ♦ (GR) System Modeling and Performance Analysis (developing)
Florida Atlantic University	♦ (UG) Introduction to Microprocessor Systems (68K Assembly) ♦ (UG) Programming Microcontrollers in C ♦ (UG) Structured Computer Organization ♦ (UG) Foundation of Computer Science (using C++) ♦ (UG) Programming in C and Data Structures (using C) ♦ (UG) Introduction to Logic Design

STUDENTS SUPERVISED:

- **Ph.D. Dissertation:** Christian C. Thompson (present), Fairuz Nawar (present), Md Raihan Uddin (present), Abdulrahman Almohaimeed (2019), Kishore K. Chidella (2018), and Vidya Suryanarayana (2013).
- **M.S. Thesis:** Nowshin Nawal (2023), Duncan Campbell (2023), Jainish R. Jain (2017), Parthib Mitra (2016), Shanta Mazumder (2016), Md Moniruzzaman (2015), Soumyashree Samadarsinee (2015), Tania Jareen (2014), Chok M. Yip (2014), Abhishek Mummidi (2014), Deepthi Gummadi (2014), Divya Vardha (2012), Phanendra S.N. Gavara (2012), and Sri R. Chaturvedula (2011).
- **M.S. Project:** Kacper Osenkowski (present), Reza-E-Rabbi (2025), Sonu Gangadhar Gowda (2025), Koteswara Rao Pandi (2024), Kyle Lanier (2023), Venkata "Tanoj" Telikepalli (2023), Manojkumar Ravi (2023), A.L. Nuwanthi Perera (2023), Sivaprasad R. Bogireddy (2023), Gurtaj Shing (2020), Michael Milhon (2019), Abhignan Telakapalli (2019), Prasanth Kamalakannan (2018), Venkatesh Mabbu (2015), Zhitao Yang (2015), Naga R.R. Kondapalli (2014), Sandip Bhowmick (2014), Mohammad S. Rahman (2013), and Neeraj Kumar (2012).
- **Undergraduate (UG) Research:** Yoel Woldeyes (2023), Luke Mercer (2022), Abraham Ishac (2022), Duncan Campbell (2021), Brad Nguyen (2018), Mohsin Zahid (2018), Seth Layton (2018), Shohoud Shawaf (2018), Willhelmi Kleruu (2018), Parth Amin (2017), Chase Weber (2017), Tyler McDonald (2017), Brent A. Duncan (2016), Khondoker Usama (2016), Christopher Hiller (2016), Justin B. Seal

(2015), Emmanuel Perez (2013), Scott J. Dick (2013), Josh N. Gable (2013), Danny Nguyen (2012), Vinosha Theagan (2012), and Zachary Vickery (2012).
- **Senior Design:** McKinley Bahr, Elias Brownlee, and Daniel Abbot (spring and fall 2024); James Earnst, Ricardo Castanon, Jeffrey Thompson, and Brent Wilson (fall 2023 and spring 2024); Santiago Diaz, Raymond Donkemezuo, Salman Khan, and Nguyen H.T. Ton (spring and fall 2023); Joel Lewis, John Leigh, Koy Light, and Odessa Olien (fall 2022 and spring 2023); and Benjamin George, Jack Holderfield, and Luke Mercer (spring and fall 2022).

PROFESSIONAL AFFILIATIONS:

- Institute of Electrical and Electronics Engineers (IEEE) – Senior Member
- American Society for Engineering Education (ASEE) – Member

RELEVANT LEADERSHIP EXPERIENCE:

- Associate Chair, Electrical and Computer Engineering Department, 2024-present
- Director, Undergraduate Programs, ECE Department, 2021-2024
- Branch Activities Coordinator, IEEE Region 5 Executive Committee, 2019-present
- Membership Development, IEEE Wichita Section, 2021-present
- Student Professional Awareness (SPAx) Coordinator, IEEE R5, 2022-present
- Activities Coordinator (for Student Activities Chair), IEEE R5, 2020-2021
- Director, Undergraduate (B.S.) Computer Engineering Program, EECS, 2019-2021
- Faculty Advisor, ACM Student Chapter at Wichita State University, 2017-2019
- Faculty Advisor, IEEE Student Branch at Wichita State University, 2016-2018
- Lead Project at WSU Ennovar as a Research Fellow, 2015
- Conduct GPGPU/CUDA/C Workshop at WSU, 2012
- Lead Student Tracking project at FAU Office of Multicultural Affairs, 2006
- Successfully completed Higher Education Leadership Program at FAU, 2006
- Founding Vice-President, Mobile Computing Group, CEECS/FAU, 2003-06

HONOR SOCIETIES:

- Phi Kappa Phi (PKP) – Member, 1996
- Tau Beta Pi (TBP) – Member, 1996
- Upsilon Pi Epsilon (UPE) – Member and Officer (FAU'96), 1996
- Golden Key – Member, 2009
- Marquis Who's Who in the World 2018
- Who's Who in the Albert Nelson Marquis Lifetime Achievement Award 2018
- Marquis Who's Who in America – 2010, 2014, 2015, 2018 Editions
- Marquis Who's Who in Science and Engineering – 2010, 2016 Editions
- Marquis Who's Who Among American Colleges & Universities – 1997 Edition

AWARDS:

- Travel Award to attend the NSF CSforAll PI and Community Meeting in Las Vegas, NV, July 17-19, 2024
- Travel Award to attend the NSF CISE EWF Aspiring PI Summit in Atlanta, GA, June 21-22, 2023
- Outstanding Educator, IEEE R5 Wichita Section Nominee, 2023
- Best Paper, IEEE Computing and Communication Workshop and Conference, 2021
- Best Presenter, IEEE Comp. and Communication Workshop and Conference, 2021
- CoE Wallace Excellence in Teaching Award, EECS Dept. Nominee, WSU, 2020
- Outstanding Student Branch Counselor Award, IEEE Region 5 (includes AR, CO, KS, LA, MO, OK, TX, and parts of: NE, NM, SD, and WY), 2018
- Finalist, IEEE-HKN Nikola Tesla Award, WSU EECS Department, Spring 2017
- CoE Strategic Enrollment Management (SEM) Faculty Fellow, 2016-2017
- ICAEE Best Paper Award at the IEEE ICAEE Conference, Bangladesh, 2015
- NVIDIA GPU Research Center at Wichita State Award (made the front page of the WSU website, URL: http://www.wichita.edu/thisis/stories/story.asp?si=3026), 2015
- Travel Scholarship, NCSI/XSEDE Computational Thinking Workshop, Utah, 2015
- ISERD Excellent Paper Award, ISERD Int'l Conference, Thailand, 2015
- WSU Ennovar Research Fellowship, 2015
- CoE Wallace Excellence in Teaching Award, EECS Dept. Nominee, WSU, 2015
- Kansas NSF EPSCoR FIRST AWARD, Kansas, 2013-2014
- NSF Faculty Workshop Travel Award (1 of 20, out of 43), Atlanta, Georgia, 2013
- AHWEE Excellence in Service Award, Wichita, Kansas, 2013
- NVIDIA CUDA Teaching Center at Wichita State Award, 2012
- FAU Graduate Student Association Wise Owl Awards (one per college), 2009
- Student Affairs Fellowship Award, FAU Dept of Educational Leadership, 2006
- First Place (Oral Presentation), FAU Graduate Research Symposium, 2005
- PKP Graduate Scholarship Award, PKP FAU Chapter, 2004 and 1996
- UPE Graduate Scholarship Award, UPE FAU Chapter, 1997
- Bangladesh Univ. of Engineering and Technology Merit Scholarship, 1988-91
- Dhaka Education Board Honor Scholarship, Bangladesh, 1985-86

ADVANCED CERTIFICATION AND TRAINING:

- Certificate of Recognition, Institute of Electrical and Electronics Engineering, 2022
- Certificate of Appreciation, U.S. Department of Labor, March 2022
- Online Learning Consortium Innovate Virtual Conference, Mar. 15-19, 2021
- SBIR Innovation Summit, John Bardo Center, WSU, Dec. 11, 2019
- WSU Leadership Development Workshop, Wichita, KS, Nov. 18-20, 2015
- Assessment Symposium (by the College of Education), WSU, Nov. 12, 2014
- Professional Development Series, WSU MRC, Oct. 22, 2014

- Workshops on Citation Searching at WSU Ablah Library (organized by WSU OFDSS and Ablah Library), WSU, Aug. 12, 2014
- NSF-Supported Faculty Workshop: Integrating Professional Practice into the Engineering Curriculum, Atlanta, GA, June 26-28, 2013
- Kansas Regional Independent Inventors Conference (representatives from the United States Patent and Trademark Office), April 19-20, 2013
- Faculty Development: Information Literacy for Teaching & Learning, WSU, 2013
- NSF-funded FPGA Workshop in Wichita, Kansas, Oct. 12-13, 2012
- NIH Grant Training Seminar, University of Kansas, Lawrence, KS, July 30, 2012
- Engineering Faculty Workshop – Learning Objectives, WSU, March 2, 2012
- NETI Workshop, Vancouver, BC, Canada, June 2011
- Engineering Reboot Camp (Online Teaching), Wichita State University, 2011
- NSF Day at KU, University of Kansas, Lawrence, KS, 2010
- Proposal and Grant Writing Workshop, FAU, Boca Raton, FL, 2009
- AppWorx v6.1 Basic, FAU, Boca Raton, FL, 2007
- System-level Simulation Training, Mirabilis Design, Inc., San Jose, CA, 2005
- Executable Process Flow Training, Motorola iDen Group at FAU, FL, 2004
- RUP and UML Training, BCBSFL, Jacksonville, FL, 2002
- Advanced Crystal Reports Professional Training, Orlando, FL, 2000
- Data Modeling and Relational Database Design Training, Tampa, FL, 1999

OTHER SYNERGISTIC ACTIVITIES

- Member, CoE Curriculum Committee, 2021-2023 and 2024-present
- Chair, CoE Curriculum Committee, 2023-2024
- Chair/Member, ECE Department Committees, 2021-present
- Moderator/Judge, WSU competitions (such as WISE and GRASP), 2011-present
- Volunteer, the Robinson Middle School Chess Club, Wichita, Kansas, 2019-present
- Roundtable Discussion of Teaching Effectiveness, EECS Dept., Feb. 26, 2021
- Webmaster (backup), EECS Department, 2015-2021
- Member, WSU Technology Fair Planning Team, 2018-2020
- Member (CoE), Faculty Senate Scholarship & Student Aid Committee, 2017-2020
- Member (CoE), Faculty Senate Undergraduate Research Committee, 2017-2020
- Member (CoE), Faculty Senate Planning and Budget Committee, 2017-2019
- Faculty Senator, EECS Department, 2016-2018
- Member, Search Committees, EECS Department, 2011-2016, 2018
- Chair, Search Committees, EECS Department, 2016-2017
- Member (CoE), Faculty Senate Academic Affairs Committee, 2015-2016
- Advisor, Humane Water (formerly AHWEE), 2010-2016
- Webmaster, EECS Department, 2011-2015
- Member, CoE Committee on Learning Enhancement, 2011-2015

TECHNICAL SKILLS:

Languages	Assembly-68K, FORTRAN, C/SystemC, HDL, Verilog, Chisel, Pro*C, SQL, PL/SQL, C++, Java, Python, Shell Scripts, HTML, Visual Basic, XML
Operating Systems	Windows 11/10/7/…/XP/…/95, Unix Sun Solaris/IBM AIX, Linux Ubuntu/Debian/Fedora/RedHat, MS-DOS
Software/Tools	CUDA, Open MPI, OpenMP, MATLAB; Cachegrind, SMPCache, Heptane, VisualSim; Oracle Tools, Microsoft VS .NET Suite, Crystal Reports; Visual Basic; Banner, Talisma, AppWorx, UML
Hardware	Nvidia GPU cards; Microcontrollers from various vendors
Databases	Oracle, SQL Server, Informix, UDB-DB2, Access, SYBASE
Network	LAN/WAN/Wireless in small/medium/large organizations

COMPLETED PROJECTS:

Front Tier	Developed simulation model using VisualSim; GUI applications and reports using Oracle and Crystal tools; Class/object diagrams using UML tools;
Middle Tier	Wrote C/C++/Java codes to communicate between front-end GUI applications (such as Oracle Forms) and back-end databases (such as Oracle and Access);
Back Tier	VisualSim java code for functional cache modeling; Traces using Cachegrind and Heptane; Database systems using Oracle, Access, and UDB-DB2;

- Applications of PETSc Library: *Network Modeling for Business Analyses using PETSc and DMNetwork Libraries.* A DoE SRP-HPC Summer 2022 Project at Argonne National Laboratory (Mentor: Dr. Hong Zhang)
- Hardware Acceleration for HPC: *PyRTL Code Synthesize using OpenROAD for Hardware Acceleration.* A DoE VFP Faculty/Students Summer 2021 Project at Lawrence Berkeley National Laboratory (Mentor: Dr. John Shalf)
- CUDA/GPU Technology: *Effective application of high-performance pattern recognition to treat cancer.* A related story (Wichita State lab earns top research designation) made the front page of the WSU website on Nov. 9, 2015 (depttools.wichita.edu/aasaduzzaman/pdf/WSU_frontpage_GPU_Research_2015.pdf).
- Project Lead, *CAPPLab Renewable Energy Management System* (using microcontrollers and CAN bus) to generate useful electric energy from freely available solar and thermal energy for vehicular and household applications. (depttools.wichita.edu/aasaduzzaman/pdf/WSU_frontpage_Solar_Project_2015.pdf).

- Project Lead, *SNKC-WSU Scanner Project* (addressed the technical challenges – primarily the use of dated technology in the microchip scanners). (depttools.wichita.edu/aasaduzzaman/pdf/WSU_frontpage_SNKC_Scanner_2016.pdf).
- Guided Graduate Projects: *Supervise EECS graduate students at WSU with various research projects including multicore multithreaded parallel programming and embedded systems.*
- CUDA/GPGPU Technology: *Effective application of high-performance pattern recognition and protein binding to treat cancer.*
- Embedded Systems: *Efficient Management of Renewable Solar Energy for Vehicular Applications.*
- CUDA Accelerated Multithreaded Programming: *The use of CUDA to improve decryption in a partially homomorphic encryption scheme.*
- GPU Assisted Multithreaded Parallel Programming: *Performance comparison of image processing in CPU/C and CUDA/C.*
- Train Computer Applications: *Teach and train FAU Admissions staff about various computer applications including Oracle, FACTS, Banner, and Talisma.*
- Data Structures: *Developed C code to demonstrate various Data Structures including stacks, queues, linked-list, trees, and graphs.*
- Analysis of Algorithms: *Designed and implemented Searching and Sorting Algorithms including Kruskals Algorithm, Miller-Rabin Algorithm, and LasVegas Algorithm.*
- Database Concepts: *Developed dynamic SQL code in C/Pro*C to implement various DDL (Create, Alter, Drop, etc.) and DML (Select, Update, Delete, Insert, etc).*
- Mobile Database Systems: *Designed and developed a mobile database using Palm, Bluetooth, Microsoft, and Oracle technology; where the Palm connects to the (local) database server through access point.*
- Programming Microcontroller in C: *Developed AC/DC converter.*
- Concurrency Modeling: *Modeled architectural concurrency for multicore systems.*
- Network Simulator Version 2: *Simulated network-on-a-chip (NOC) architecture.*
- ECI Applications: *Designed and developed database applications and user manuals.*
- UADM Holds: *Oracle PL/SQL application to set/update FAU Admissions holds.*
- Talisma Extracts: *Cross-platform application to extract data from Banner/Unix server (Oracle database) for Talisma/Windows server (MySQL database); PL/SQL packages and AppWorx Chain/Modules to automate the process.*
- Workload: *Characterized real-time multimedia applications including MPEG4 and H.264/AVC for cache optimization.*
- UADM Letters/Reports: *Crystal Reports to produce FAU Admissions decision and scholarship letters and various statistics.*

- EGW-VO Group: *Lead Developer EGW-VO pipelines to process CFI, CFP, MedA, MedB, 837I, and 837P claims. Administer Gentran for EGW-VO Group.*

REFERENCES:

(1) Current Supervisor
Visvakumar Aravinthan, PhD, Professor
Chairperson, ECE Department, Wichita State University
Mail: 1845 Fairmount Street WH-301, Wichita, KS 67260-0103
Tel: (316) 978-6324; E-mail: visvakumar.aravinthan@wichita.edu

(2) Colleague
John Watkins, PhD, Professor
ECE Department, Wichita State University
Mail: 1845 Fairmount Street WH-304, Wichita, KS 67260-0103
Tel: (316) 978-6336; E-mail: John.Watkins@wichita.edu

(3) Coauthor/Collaborator
Dr. Ramazan Asmatulu, Professor
Director of Nano Lab, ME Department, Wichita State University
Mail: 1845 Fairmount Street EB-101L, Wichita, Kansas 67260-0113
Tel: (316) 978-6368; E-mail: Ramazan.Asmatulu@wichita.edu

(4) PhD Dissertation and MS Thesis Advisor
Dr. Imad Mahgoub, Tecore Professor
Director of Tecore Networks Lab, CEECS Department, Florida Atlantic University
Mail: 777 Glades Road EE-421, Boca Raton, Florida 33431-0991
Tel: (561) 297-3458; E-mail: mahgoubi@fau.edu