

Md Javedul Ferdous, M.S., B.S. (Computer Science)

Email: mferd002@odu.edu

1049 49th Street, #311, Norfolk, VA 23508, USA

Phone: (757) 752-7331

Skype: javedul.ferdous

Education

- **PhD in Computer Science** Old Dominion University, USA Fall 19 -
- **MS in Computer Science** American International University-Bangladesh, GPA =3.83 (Contd.) Fall 18
Diss.: An Efficient Hybrid Architecture for Visual Behavior Recognition Using Convolutional Neural Network
- **BS in Computer Sci. & Eng.** East West University, Dhaka, Bangladesh, GPA = 3.15 2011 -15
Diss.: Verification of SPL Feature Tree by Using Bayesian Network.

Academic Honors and Awards (selected)

- Dr. Hussein Abdel-Wahab Memorial, Old Dominion University, USA Spr 22
- BASIS Web Application Development scholarship, BASIS Institute of Technology and Management, Dhaka, Bangladesh Fall 16
- Graduate teaching assistantship, Old Dominion University, USA Fall 19
- Undergraduate teaching assistantship, East West University (EWU), Dhaka, Bangladesh Fall 14
- Bangladesh Mathematical Olympiad, First Runners Up-Divisional 2009
- Government merit scholarship – Grade 8 – Junior Scholarship, Comilla Division, Bangladesh 2007

Professional Services

- **Campus lead**, Microsoft Student Partner (MSP), **Microsoft-Bangladesh Ltd.** Feb12 – May15
- **Windows App. And Windows 8.1 Survey on Bangladesh: Making App. Within an day**, Nov 2, 12
Institute of Information Technology, **University of Dhaka**, Dhaka, Bangladesh

Peer-Reviewed Publications

- **Ferdous, J.**, Lee, H. N., Jayarathna, S., & Ashok, V. Enabling Efficient Web Data-Record Interaction for People with Visual Impairments via Proxy Interfaces. ACM Transactions on Interactive Intelligent Systems 2023 (ACM TIIS'23).
- **Ferdous, J.**, Lee, H. N., Jayarathna, S. & Ashok, V. InSupport: Proxy Interface for Enabling Efficient Non-Visual Interaction with Web Data Records. In 27th International Conference on Intelligent User Interfaces. 2022 (ACM IUI '22).
- Uckun, U., Tumkur Suresh, R., **Ferdous, J.**, Bi, X., Ramakrishnan, I. V., & Ashok, V. Taming User-Interface Heterogeneity with Uniform Overlays for Blind Users. In the 30th ACM Conference on User Modeling, Adaptation and Personalization (pp. 212-222) 2022. (ACM UMAP'22)
- **Ferdous, J.**, Uddin, S., & Ashok, V. Semantic table-of-contents for efficient web screen reading. In Proceedings of the 36th Annual ACM Symposium on Applied Computing (pp. 1941-1949). (ACM SAC '21) 2021
- Ripon, S., **Ferdous, J.**, Hossain, M.D. and Rahman, M., *Verification of SPL Feature Tree by Using Bayesian Network*, 4th International Conference on Computer Engineering and Mathematical Sciences, 2015 (ICCEMS 2015)

Research Appointments and Experiences

Graduate researcher, Web Science & Digital Libraries Research Group, Science, Computer Science, Old Dominion University, USA 2020 -

- Plan and design experiments to investigate specific aspects of web science
- Oversee the collection and analysis of data, ensuring accuracy and relevance.
- Contribute to the development of tools and methodologies for web science research.
- Develop software applications or algorithms necessary for conducting experiments.
- Be proficient in relevant programming languages for web-related research.

- Work collaboratively with other researchers, graduate students, and faculty members.
- Collaborate with researchers from diverse disciplines to enhance the scope of research and write blogs to share knowledge in academic scholarly.

Graduate researcher, Image Processing and Computer Vision Laboratory, Computer Science & Engineering, American International University – Bangladesh, Dhaka, Bangladesh 2016 -18

- Build hypothesis on NP-hard problem and solve with heuristic approach.
- Analyze a model and predict the outcome from a problem
- Research on building nearest location reasoning service with SPARQL and OWL
- Build and training image classifier by using python and keras
- Predict image context by using deep learning framework

Undergraduate researcher, Artificial Intelligence Laboratory, Computer Science & Engineering, East West University, Dhaka, Bangladesh 2014 –15

- Theoretically analyzed the rules for cardinality-based feature model
- Verified both dead and false optional features by using Bayesian Network Based inference mechanism
- Journal writing, poster and oral communication skills (research oral presentation, advanced and commercial level software and application related speech and workshops)

Professional Trainings

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|--|------------|
| • Web Application and .NET framework Development , BASIS Institute of Technology and Management, Dhaka, Bangladesh, (Score: 60.88, Rank: 4th/40) | Jun-Sep16 |
| • COMSOL multi-physics workshop, East West University, Dhaka, Bangladesh | Mar 21, 14 |

Projects (Accomplished)

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| • Web based Application - BASIS Institute of Technology and Management, Bangladesh | Jul - Aug, 16 |
| ▪ Diagnostic Center Bill Management System | |
| • Model View Controller (MVC) Based Application - BASIS Institute of Technology and Management, Bangladesh | Aug – Sep, 16 |
| ▪ University Course Result Management System | |
| • Windows Phone | |
| ▪ EWU Result, (Windows app. store, published on April 10, 2015) | Mar - Apr, 15 |
| ▪ Guess It, (GitHub, published on September 2, 2016) | Jul – Sep, 15 |
| ▪ Flappy Bird, (Windows app. store, published on June 7, 2014) | May – Jun, 14 |
| ▪ Rock Throw (Windows app. store, published on March 12, 2014) | Feb – Mar, 14 |
| • Smart Campus Project | Nov- Dec, 17 |
| Design a framework to clean campus area by using image processing and micro-controller. | |
| • 2-Bit Arithmetic Logic Unit Design | Jun-Aug, 14 |
| Arithmetic calculation such as summation, subtraction by using 2-Bit ALU | |
| • Email Server (Java Project) | Jun- Aug, 14 |
| A TCP email server project by using socket programming | |
| • Geometry Pattern Based Detection Expert System | Jan- Apr, 14 |
| A recommendation system to identify a geometric pattern by using prolog | |
| • Office Security System | Jan- Apr, 14 |
| A security system design with UML. Major focus of the system was on introducing finger scanning and iris scanning | |
| • National ID Management System | Jun- Sep, 13 |
| A database project on SQL to register unambiguous ID card without taking any redundancy data and design the database | |

Invited Talks (Professional)

• (Public) Imagine Cup Boot camp, East West University, Dhaka, Bangladesh	Feb 20, 14
• (Public) Jump Start Session for Windows Phone App., East West University, Dhaka, Bangladesh	Jun 14, 14
• (Public) #CodeSpark by Microsoft, East West University, Dhaka, Bangladesh	Sep 15, 14
• Microsoft Student Partner (MSP) Recruitment , BRAC University, Dhaka, Bangladesh	Jun 20, 13
• (Public) ODU Research Group Expo 2022	Apr 22
• (Public) ODU Research Group Expo 2021	Apr 21

Teaching Appointments and Experiences**Graduate Teaching Assistant (GTA)**, Computer Science, Old Dominion University, USA

Course taught	Intro to Computer Science with Python (CS115): Freshman year undergraduate course	Fall 21 –
Course details	An overview of computer science as a problem-solving discipline and as a career path. Topics include fundamentals of software, hardware computing fundamentals, and an introduction to the development of software to solve problems.	
Duties	Responsible for all course duties; taught, held office hours, graded quizzes, and laboratory reports, helped students with problem and homework assignments, and proctored examinations.	
Technologies	Python, Thonny, Google Colab	
Course taught	Computer Society (CS300): Freshman year undergraduate course	Fall 20- Spr 21
Course details	Covers changes in the world's society due to continuing implementation of computing technologies. Evaluation of technological expansions in areas of governments, business/industry, education, medicine, transportation, communication and entertainment.	
Duties	Responsible for all course duties, held office hours, graded quizzes, and laboratory reports, helped students with problem and homework assignments, and proctored examinations.	
Technologies	Python	
Course taught	Principle programming Languages (CS355): Freshman year undergraduate course	Fall 19 - Spr 20
Course details	Survey of significant features of programming languages. Language types including imperative, functional, logical, and object-oriented are covered.	
Duties	Responsible for all course duties, held office hours, graded quizzes, and laboratory reports, helped students with problem and homework assignments, and proctored examinations.	
Technologies	SML, Schema	
Course taught	Intro to Theoretical Computer Science (CS390): Freshman year undergraduate course	Fall 19 - Spr 20
Course details	Elementary study of topics in formal languages and automata theory are covered including regular languages, regular expressions, finite automata, context-free languages, pushdown automata, grammars, Turing machines, and unsolvable problems.	
Duties	Responsible for all course duties, held office hours, graded quizzes, and laboratory reports, helped students with problem and homework assignments, and proctored examinations.	
Technologies	JFLAP	
Course taught	Data Visualization (CS625): Freshman year undergraduate course	Fall 21
Course details	Covers the issues in data cleaning to prepare data for visualization, the theory behind mapping data to appropriate visual representations, introduction to visual analytics, and tools used for data analysis and visualization	
Duties	Responsible for all course duties, held office hours, graded quizzes, and laboratory reports, helped students with problem and homework assignments, and proctored examinations.	
Technologies	D3, Vega lite, tableau	

Teaching Assistant, Data Science Bootcamp, Computer Science, Old Dominion University, USA

Course taught: Giving experience on Python firsthand in a two-day crash course featuring hands-on tutorials covering essential libraries such as Pandas and NumPy. Spring 22

Duties: Preparing course material, helped students in the class in understand topics and answer the question.

Technologies: Python, Google Colab

Undergraduate Teaching Assistant (UTA), Computer Science & Engineering, East West University, Bangladesh

Course taught: **Object Oriented Programing with Lab (CSE 107)**: Freshman year undergraduate course Fall 2014

Course details: Covering Polymorphism, Encapsulation, Inheritance and Object. Introduces with object oriented concepts and develops Object Oriented Programing (OOP) programs which provides solutions to real world object oriented problem

Duties: Responsible for all course duties; taught, held office hours, graded quizzes, and laboratory reports, helped students with problem and homework assignments, and proctored examinations.

Technologies: Visual Studio, Code block

Course taught: **Artificial Intelligence with Lab (CSE 365)**: Junior year undergraduate course Fall 2014

Course details: Introduces the fundamental concepts and knowledge of Artificial Intelligence (AI) principles and techniques, the state-of-the-art models and algorithms used to undertake these problems. In association with building recommendation system using prolog and game using robocode. Besides, briefing and working on various intelligent agents and algorithm.

Duties: Responsible for all course duties; taught, held office hours, graded quizzes, and laboratory reports, helped students with problem and homework assignments, and proctored examinations.

Technologies: Prolog, Robocode

Computer Skills

- **Operating System (OS):** Windows, Linux
- **Simulation (Sim.)** Proteus, Quartus, Protégé
- **JavaScript** jQuery
- **Tools** OpenCV, Latex, Beamer
- **Deep Learning (DL)** Tensorflow, Keras, Scikit-learn

Scientific Typography & Presentation: L^AT_EX & Beamer

- **Programing (Prog.)** C, C#, Python
- **Web Design (WD)** HTML, ASP.net, MVC
- **Others** Bootstrap, Ajax, Jason

Certification Courses

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| • Algorithms: Design and Analysis, Part 1; <i>Course Grade: 89%</i> | Stanford University | Nov 14, 17 |
| • Algorithms: Design and Analysis, Part 2; <i>Course Grade: 95%</i> | Stanford University | Nov 19, 17 |
| • Neural Networks and Deep Learning; <i>Course Grade: 93.5%</i> | Coursera | Nov 09, 17 |
| • Structuring Machine Learning Projects; <i>Course Grade: 96.7%</i> | Coursera | Nov 11, 17 |
| • Convolutional Neural Networks; <i>Course Grade: 97.3%</i> | Coursera | Nov 24, 17 |
| • Improving Deep Neural Networks: Hyperparameter Tuning, Regularization & Optimization; <i>Course Grade: 98.4%</i> | Coursera | Dec 12, 17 |
| • Sequence Model; <i>Course Grade: 97.5%</i> | Coursera | Feb 2, 18 |
| • Applied AI with Deep Learning; <i>Course Grade: 94.9%</i> | IBM | May 29, 18 |
| • Machine Learning; <i>Course Grade: 96.9%</i> | University of Washington | Jul 25, 18 |

Service

Reviewer, Academic Research Conference

- Americas Conference on Information Systems
- ACM SIGACCESS Conference on Computers and Accessibility
- ACM Conference on Human Factors in Computing Systems

- Cognitive Science Society
- ACM Computer-Supported Cooperative Work & Social Computing
- ACM Conversational User Interfaces conference
- ACM Designing Interactive Systems.
- ACM Symposium on Eye Tracking Research & Applications
- ACM SIGCHI Symposium on Engineering Interactive Computing Systems
- European Conference on Information Systems
- International Conference on Human-Agent Interaction
- International Conference on Electrical, Computer and Energy Technologies
- ACM International Conference on Multimodal Interaction
- International AAAI Conference on Web and Social Media
- ACM Interaction Design and Children
- ACM International Conference on Interactive Media Experiences
- International Symposium on Mixed and Augmented Reality
- Nordic conference on Human-computer interaction
- Australian Conference on Computer-Human Interaction
- Pacific Asia Conference on Information Systems
- Southern Association for Information Systems
- ACM Symposium on Virtual Reality Software and Technology
- IEEE Conference on Virtual Reality and 3D User Interfaces (VR)

Reviewer, Academic Journal

- ACM Transactions on Knowledge Discovery from Data

Student Volunteer, Academic Research Conference

- ACM SIGACCESS Conference on Computers and Accessibility
- Annual Symposium on Computer-Human Interaction in Play
- ACM Designing Interactive Systems.
- ACM Conference on Recommender Systems

Program Committee Member, Academic Research Conference

- ACM SIGCHI Symposium on Engineering Interactive Computing Systems
- ACM International Conference on Multimodal Interaction
- International AAAI Conference on Web and Social Media

Mentorship

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|-----------------------------|------------|------------------|
| • Salomi Jessieca Gopathoti | MS Student | CS 795 - Project |
| • Akshaya Mamidi | MS Student | CS 795 - Project |
| • Vamsi Priya Sakhamuri | MS Student | CS 795 - Project |
| • Aashritha Mamidi | MS Student | CS 795 - Project |

Workshops, Seminars and Trainings

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| • Microsoft Imagine Camp, Microsoft-Bangladesh Ltd. , Dhaka, Bangladesh | Mar 1, 14 |
| • Microsoft DevCamps, Microsoft-Bangladesh Ltd. , Dhaka, Bangladesh | May 28, 14 |
| • GameCamp by Microsoft, Microsoft-Bangladesh Ltd. , Dhaka, Bangladesh | May 12, 14 |
| • MSP Recruitment and Internship discussion, East West University , Dhaka, Bangladesh | Jun 23, 13 |
| • Microsoft DreamSpark Installation Fiesta, East West University , Dhaka, Bangladesh | May 28, 13 |
| • Introduction to C# and Windows Phone, East West University , Dhaka, Bangladesh | Oct 13, 12 |
| • AIUB CS Fest, American International University-Bangladesh , Dhaka, Bangladesh | Dec 5, 17 |

- Google I/O Replay, Google Developer Group Dhaka (GDG Dhaka), **Independent University –Bangladesh**, Dhaka, Bangladesh Jul 28, 2018

Volunteer Activities

- National Volunteering Activity
Youth Engagement and Support, Transparency International Bangladesh (TIB) Feb 14 – Apr 14
- University Volunteering Activity
East West University Programming Club: International Mother Language Day arrangements February, 2014

Professional Memberships

- Association for Computing Machinery (ACM) Mar 22 -
- Sigma XI Dec 22 -
- SIGCHI Oct 22 -
- Institute of Electrical and Electronics Engineers (IEEE) Nov 14 – Nov 15

Academic References

- References Available Upon Request