Mohammad A. Mezher, Dr.

Ph.D. in Intelligent Systems (AI), Associate Professor
A/Dean of Computing College, FBSU

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RESEARCH INTEREST

Intelligent Systems includes:
Support Vector Machine (SVM),
Fuzzy Logic (FL),
Neural Networks (NN),
Hybrid Systems,
Genetic Algorithms (GAs),
Genetic Programming (GP),
Particle Swarm Optimization(PSO),
Non-linear PCA

Application models include:
Binary Classification,
Multi-Classification,
Regression,
Data Sampling Methods,
Linear and Nonlinear Models

EDUCATION

2008 – 2011   **Ph.D. in Computer Science, Brunel University, UK**

Thesis Title: New Evolutionary Algorithms for Model Selection
Grade: Excellent Class Honours
Supervisors: Dr. M. Abbod, Professor J. Stonham, and Professor D. Linkens

Brief Synopsis of Research:
Machine Learning (ML), a field of artificial intelligence, is concerned with the design and development of new algorithms that allow computers to learn behaviours based on observed data. New interesting research in ML is based on learning automatically to make intelligent decisions available on complex data. In other words, the difficulty lies in the fact that the set of training data is possible to give all possible behaviours outputs to the set of testing data. Therefore, the learner system must generalize from the given training data to be able to improve the system performance in new testing data. One of the major learner system algorithms in ML is support vector machines. The thesis presented an invented genetic folding algorithm. GF is a novel framework of the learning scheme of model selection embedded in SVM. However, the newly proposed algorithms focused on either adapting parameters or developing new kernels based on EA.

Details of the invented revolutionary genetic folding algorithm are on https://github.com/mohabedalgani/gflib

2005 – 2006	**MSc in Computer Science, Universiti Sains Malaysia, Malaysia**

Thesis Title: Genetic Algorithm in RNA Folding by Using Java language for Different Operating Systems
Grade: (A-)

Modules Included: Artificial Intelligent, Computer Vision and Image Processing, Advanced Distributed Systems Concepts and Design, Advanced Data Communication and Networks, Computer Security and Cryptography, E-Commerce

2000 – 2004	**BSc in Computer Science, Al-Zaytoonah University, Jordan**

Project Title: Alumni Website and Database by using VB.net and SQL Server
Grade: (A)

Modules Included: Artificial Intelligent, Operating Systems, Data Structure, Programming Languages, Data Simulation and Compilers Design

EMPLOYMENT

Dec. 2021- Now   **A/Dean of Computing College, Fahad Bin Sultan University, KSA**
- **Duties have been assigned**
  - Initiate new agreements, local community training, bridging equivalency and agreements to meet KSA vision.
  - Reopening the CEN master program with full tracks including, Networking security, embedded systems and AI and robotics
  - To ensure the college is managed effectively.
  - To ensure the college committees function properly.
  - To provide support and reports to the vice counselor of the president.
  - Develop degree plans for CIT, CS, and CEN programs.
  - Developing courses curriculum as per NCAAA accreditation and international standards
  - Manage the agreement with Bridgeport University.
  - Oversee a new agreement with Saudi Vocational Colleges.

Sep. 2013- Dec. 2021   **Chairman of CS Dep., Fahad Bin Sultan University, KSA**
- **Duties have been assigned**
  - Proposed new programs, syllabuses, plans, reports, specifications and courses. Both Computer Information Technology and Cyber Security programs are being initiated and formulated related committees to prepare final NCAAA programs.
  - Initiate and launch the CS master program with full four tracks including, AI, Cybersecurity, Database and Software Engineering
  - To ensure the department is managed effectively.
  - To ensure the department committees function properly.
  - To provide support and reports to the dean officer.
  - Developing courses curriculum as per accreditation and international standards
  - Developing a master's program with different tracks
  - Planning and revising the syllabuses, course reports and course specifications of all CS and CIT courses to meet NCAAA format
  - Be responsible and accountable for setting and advancing the academic strategy of the Department in line with Faculty and University strategic plans and direction

- Refresh and develop new training courses in cooperating with the ACM student chapter to attract new students and helps the community with services
- To evaluate the CS transfer students' files, and confirm that graduating students have satisfied departmental requirements.
- To equate the transcripts and evaluate all equivalent transcripts for all FBSU students joining the university
- Revising FBSU by-laws and doing the required recommendations
- Arrangement of ACM Computing week yearly including; the hour of code, FYP student projects and School visits.

Sep. 2024- Now   **Associate Professor, Fahad Bin Sultan University, KSA**
- **Courses taught at FBSU**
  - Advanced Artificial Intelligence (coordinator)
  - Advanced Data Structures and Algorithms (coordinator)
  - Machine Learning and Deep Learning
  - Advanced Software Engineering
  - Advanced Operating Systems (coordinator)
  - Advanced Theory of Computation (coordinator)
  - Advanced Computing Ethics
  - **Postgraduate courses**: Advanced Neural Networks and Machine Learning (Computer Science department), Advanced Decision-Making Systems (Business department), Advanced Algorithms and Complexity

Sep. 2011- Now   **Assistant Professor, Fahad Bin Sultan University, KSA**
- **Courses taught at FBSU**
  - Artificial Intelligence (coordinator)
  - Algorithms and Data structure(coordinator)
  - Final Year Project I and II (coordinator)
  - Theory of Computation (coordinator)
  - Software Engineering
  - Design and Analysis of Algorithms (coordinator)
  - Computer programming for engineers
  - Computing/Engineering/ Business Ethics
  - Introduction to Multimedia
  - Operating Systems (coordinator)
  - Computer Programming 2 Java and lab (coordinator)
  - Parallel Computing
  - Introduction to Linux and lab
  - Decision Support System
  - **Postgraduate courses**: Decision-Making systems and Management Information Systems (Business department), Advanced Design and Analysis of Algorithms, and Neural Networks and Machine Learning (Computer Science department)

- **Sample of Final Year Projects Supervision**
  - Hand Gesture Project using Machine Learning (CS -2019)
  - A Facilitation Purchase System (CS-2018)
  - Robotic Chess Player (CE-2017)
  - Smart Online Shopping System (CS-2016)
  - Online Student Services (CS-2015)
  - Fingerprint ATM Security System (CS-2014)
  - Vending printer/Fax Machine (CS-CE-2013)
  - Pilgrim Tracking and Tour System (CS-2013)
  - Deaf-Sign Recognition System (CS-2012)
  - Registration System (CS-2012)

- **University/College Duties**
  - Final Year Project 2 Coordinator
  - Member of the University Research Board
  - Member of department curricula committee

- Member of computing council committee
- Member of the college research committee
- Member of Final Year Project committee
- Member of foundation and bridging committee
- Nominated as acting dean of the computing college (declined)

Apr. -D*ec*. 2008   **IT Administrator, Groveland's Medical Centre, Reading, UK**
- Monitor IT Infrastructure
- Troubleshooting of IT Infrastructure

- Upgrade of Clinical Application
- Liaise with PCT IT, iSoft and other service providers
- Own the backup process of the surgery
- Monitor and Manage registration issues
- QOF monitoring and Managing registration issues
- Develop and produce ad-hoc reports from computer systems
- Assist in training staff concerning "Docman" software
- Administer the recall service for all monitoring systems
- Drive and implement QOF Metrics

2007-2008   **Teaching Assistant, Loddon School, Hampshire, UK**
- Provide Consistent education and Support for 28 children who have the most severe and complex learning difficulties
- Ensured health & safety procedures adhered
- To monitor and record progress through the scale of assessments
- To meet pupil needs in all aspects
- Analyze each pupil's complex restrictive behaviors
- Encourage pupils to learn ways to manage their behaviours and cope better with each pupil's needs
- Use the most appropriate methods of positive teaching suited

SKILLS AND TRAINING

Computing Skills:
- AWS cloud, big data and machine learning
- Certificates Programming Languages: C, C++, Java, Python
- Mathematical Models: Matlab.
- Internet Development: DHTML, XML, JavaScript, ASP.net, CSS, PHP.
- Technical Drawing: Microsoft Visio, Photoshop, After Effects.
- Operating Systems: Linux (Kali, Ubuntu), Windows, Mac.
- Database: Oracle, mySQL, Microsoft Access.
- Member of online training platforms: Udemy, Udacity
- IPhone Apps developer courses, 2014-2016

Presentation & Analysis:
- Organizing an NCAAA preparation stage workshop
- Developed the ability to produce reports and presentations to a professional standard.
- Proficient in assessing data and formulating solutions.
- Proficient in organizational structures and planning

Organizational &Team Leaders:
- In the progress of launching edoros.com website for online education.
- Effective at time management and prioritizing tasks to achieve deadlines.
- Extensive experience in juggling different tasks and bringing these to a successful conclusion.
- Strong team working, leadership and communication skills.
- Simulate different models.
- Assist in the design and develop programming models.

Certificates, Training, and Workshops:
- AWS certified inDeep Learning, Machine Learning, and Artificial Intelligence and about 12 more AI and related certificates
- 12-years teaching experience at CISCO Academy

- PCAP: Programming Essentials in Python

- CPA: Programming Essentials in C++
- NDG Linux Essentials, I, II
- Oracle Reports Developer 10g
- A workshop titled "Research Methodology and Scientific Writing skills"
- A workshop titled "Flipping your Classroom" Organized by CEC FBSU in collaboration with AUB, was held on April 25, 2015.
- A workshop titled "Assessment of Learning Outcomes" delivered by NCAAA, Held on Oct. 21-22, 2015.
- Workshop in "Advances In Database and Data Mining", sic-scoop.org
- Online training courses: " After Effects and Photoshop", "Objective-C", "Swift" and "Web design developments course using CSS, HTML, PHP, JavaScript"
- National Instruments for LabVIEW, A Workshop including on 1. Introduction, environment, Build your First VI, Functions, Structures, Data Display, and How to Log Data in LabVIEW. Feb. 22, 2016.

PUBLICATIONS & CONFERENCE PAPERS

- **Books and Chapters:**
  1. MA Mezher, GFLibPy: An Open-Source Python Toolbox for Genetic Folding Algorithm. - The International Conference On Global Economics, 2021
  2. MA Mezher Sentiment Analysis for Modern Standard Dialect Using Genetic Folding Algorithm. The Big Data-Driven Digital Economy: Artificial Intelligence, 2021
  3. Mohammad A. Mezher, Genetic Folding Algorithm: An Introduction to a New Evolutionary Algorithm. Published by LAP Lambert Academic Publishing (2012). ISBN 10: 3659209562 ISBN 13: 9783659209567
  4. Mohammad A. Mezher, A 4*4 Driving Wheel to Machine Learning Models (2024).

- **Journal Papers**
  5. AO Alhwiti, MA Mezher Enhancing User Security on Instagram: A Multifaceted AI System for Filtering Abusive Comments, - Social Networking, 2024
  6. AM Barakeh, MA Mezher, BA Alharbi Literature Review for Educational Data Mining Systems Fahad Bin Sultan University Case Study. Digital Twins: Transforming Industrial Operations for Innovation and Sustainability, 2024
  7. Mohammad A. Mezher (2022) Genetic Folding (GF) Algorithm with Minimal Kernel Operators to Predict Stroke Patients, Applied Artificial Intelligence, 36:1, 2151179, DOI: 10.1080/08839514.2022.2151179
  8. Alharbi, Banan; Mezher, Mohammad A; Barakeh, Abdullah. Tourist Reviews Sentiment Classification using Deep Learning Techniques: A Case Study in Saudi Arabia. (IJACSA) International **Journal** of Advanced Computer Science and Applications. 2022
  9. Mezher, Mohammad A; PGFLibPy: An Open-Source Parallel Python Toolbox for Genetic Folding Algorithm. **Journal** of Advanced Computational Intelligence and Intelligent Informatics. 2022
  10. Mezher, Mohammad A; Altamimi, Almothana; Altamimi, Ruhaifa; A Genetic Folding Strategy Based Support Vector Machine to Optimize Lung Cancer Classification. Frontiers in Artificial Intelligence **Journal**, Machine Learning and Artificial Intelligence. 2022
  11. Mezher, Mohammad A; Altamimi, Almothana; Altamimi, Ruhaifa; An enhanced Genetic Folding algorithm for prostate and breast cancer detection. PeerJ **Journal** Computer Science. 2022
  12. R Sehly, M Mezher. Performance Impact of Genetic Operators in a Hybrid GA-KNN Algorithm. International **Journal** of Advanced Computer Science and Applications. 2020
  13. NI Alghurair, M. Mezher. A Survey Study Support Vector Machines and K-MEAN Algorithms for Diabetes Dataset- Academic **Journal** of Research and Scientific, 2020
  14. Ni Alghurair, M Mezher. Generic frameworks for SVM, ANN, LGBM, and LR algorithms. International **Journal** of Computer Science and Mobile Computing. 2020.
  15. M Alshammari, M Mezher. A comparative analysis of data mining techniques on breast cancer diagnosis data using weka toolbox. (IJACSA) International **Journal** of Advanced Computer, 2020.
  16. Mohammad A. Mezher, GFLIB: An Open Source Library for Genetic Folding Solving Optimization Problems. Artificial Intelligence Advances **Journal**. April 2019.
  17. Mohammad A. Mezher, Maysam F. Abbod. Genetic Folding MATLAB Toolbox: Solving Santa Fe Trail Problem. International **journal** of computers. 2017. Vol 11. Pages 54-59
  18. Mohammad A. Mezher, Maysam F. Abbod. A Novel Genetic Operator for Genetic Folding Algorithm: A Refolding Operator and a New Genotype. International **Journal** of Engineering

and Manufacturing (IJEM). 2017

19. M. Mezher, M. Abbod. Genetic Folding: A New Algorithm for Solving Multiclass SVM Problems: Applied Intelligence, **Springer Journal**. September 2014.
20. M. Mezher, M. Abbod. Analyzing The Mercer's Kernels Effect in Support Vector Machine Using Genetic Folding: International **Journal** of Computer, Electrical, Automation, Control and Information Engineering. Vol: 5, No: 3, 2011.
21. M. Mezher, M. Abbod. Evolving Self-Adaptive Genetic Algorithm Using Nonlinear Support Vector for Classification Problems: The International **Journal** Annals Computer Science Series. June 2010.
22. M. Mezher, T. Kader. Genetic Algorithm Self-Adaptive Mutation Rate for RNA Folding (GASAMR): Online **Journal** of Bioinformatics. April 2009.

- **Conference Papers**
  23. M ALshammari, MA Mezher A Review Analysis Investigating the Efficacy of Machine Learning in Intrusion Detection. - The International Conference On Global Economics, 2021
  24. AS Alanazi, MA Mezher. Using Machine Learning Algorithms for Prediction of Diabetes Mellitus. - 2020 International Conference on Computing, 2020
  25. M Alshammari, MA Mezher, K Al-utaibi Automatic Test Data Generation Using Genetic Algorithm for Python Programs.- 2022 2nd International Conference on Computing, 2022
  26. M Alshammari, M Mezher A Modified Convolutional Neural Networks For MRI-based Images for Detection and Stage Classification of Alzheimer Disease. - 2021 National Computing Colleges Conference, 2021.
  27. R Sehly, M Mezher. Comparative analysis of classification models for Pima dataset- 2020 International Conference on Computing, 2020
  28. M. Mezher, M. Abbod. Genetic Folding: A New Class of Evolutionary Algorithm for SVM: Society's Specialist Group on Artificial Intelligence (SGAI) International **Conference** on Artificial Intelligence. **Cambridge**, UK. August 2010.
  29. M. Mezher, M. Abbod. Palindrome Genetic Folding for Support Vector Regression Problems: UKSim conference, **Cambridge** University, London, UK. Feb 2013.
  30. M. Mezher, M. Abbod. Alignment Support Vector Classification (ASVC) for Nonlinear Problems: 7th Jordanian International Electrical and Electronics Engineering **Conference** (JIEEEC). January 2011.

- **Samples of Reviewing Papers:**
  1. Parameter optimization of electrochemical machining processes using firefly algorithm and non-dominated sorting genetic algorithm. Applied Soft Computing. **Elsevier**.
  2. Supervised Fuzzy Reinforcement Learning for Robot Navigation. Applied Soft Computing. **Elsevier**.
  3. Novel Method to Find the Optimal Parameters of Bilateral Filter for Brain MR Image Denoising. Applied Soft Computing. **Elsevier**.
  4. New Crossover and Mutation Operators of Real Coded Genetic Algorithms for Global Optimization Problems. Applied Soft Computing. **Elsevier**.
  5. Multi-Agent Simulated Annealing Algorithm with Parallel Adaptive Multiple Sampling for Protein Structure Prediction. Applied Soft Computing. **Elsevier**.
  6. An Extended Partitioning Technique to Transform Trees into Single-Row Networks. Applied Soft Computing. **Elsevier**.
  7. Supervised Fuzzy Reinforcement Learning for Robot Navigation. Applied Soft Computing. **Elsevier**.

- **Samples of Supervision Thesis:**
  1. Fadyah Alatawi. Deep Learning for Text Normalization of Unstructured Arabic Data for Twitter. 2022
  2. Ahmad Rawai'i Aldiofy. An Enhancement Chess Player Robot: AI Techniques for Computer Vision Integration. 2021
  3. Amjad Sannat B Alqasama. An Online Hybrid Model for Measuring Customer Satisfaction and Feedback Accuracy. 2021
  4. Banan Alharbi. Tourist Place Reviews Sentiment Classification Using Deep Learning Techniques: Case Study In Saudi Arabia. 2021
  5. Raghad muneer albalawi. A Detection Fake News System for Arabic Language Using TransE Model. 2020
  6. Fahad Al Essa. Car License Plate Recognition Based on Neural Network and K Nearest Neighbor Classifier. 2020
  7. Majdah Alshammari. Automatic Test Data Generation Using Genetic Algorithm for Python Programs. 2020
  8. Nora Ibrahem Alghurair. Thyroid Detection Using Machine Learning. 2020

REVIEWER/EDITORIAL BOARD

1. Engineering Applications of Artificial Intelligence, Elsevier Journal, 2011
2. SGAI International Conference on Artificial Intelligence, UK, 2011
3. The 7th Jordanian International Electrical and Electronics Engineering (JIEEE) Conference, 2011.
4. International Journal of Modern computer science and Applications: ISSN: 2321-2632
5. Automation, Control and Intelligent Systems, SciencePG
6. International Journal of innovative research in information security
7. Reviewed more than 30 journal and conference papers
8. Recently a reviewer at Applied Soft Computing journal
9. International Journal of Research in Computer Science
10. External co-supervisor for some master students

INVITATIONS

- Mechanical Engineering Department of Yuan Ze University in Taiwan (21-26 September 2009).
- Electronic and Computer Engineering Department at Brunel University in the UK (12 November 2010).

MEMBERSHIP

- American Artificial intelligence member
- British Computer Society (BCS).
- ACM Member

* Jordan Computer Society (JCS).
* Asian Council Of Science Editors
* CISCO Member and coordinator

REFERENCES