SAMOUA ALSAMOUA

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EDUCATION AND TRAINING

01/09/2022 – CURRENT Trabzon, Türkiye

MSC IN SOFTWARE ENGINEERING: ARTIFICIAL INTELLIGENCE, DEEP LEARNING AND HEURISTIC ALGORITHMS Karadeniz Technical University

Website https://www.ktu.edu.tr/ | **Field of study** Software and applications development and analysis | **Final grade** 3,36 |

National classification 1 |

Thesis Improved Weighted Chimp Optimization Algorithm based on Fitness-Distance Balance for Multilevel Thresholding Image Segmentation

15/08/2015 – 01/07/2020 Latakia, Syria

BSC IN TELECOMMUNICATION AND ELECTRONICS ENGINEERING Tishreen University

Website https://tishreen.edu.sy/ | **Field of study** Information and Communication Technologies | **Final grade** 88.80 |

National classification 2 |

Thesis Design and Implementation of an SDN Network for Tishreen University Using HPE-VAN Controller and OpenFlow Protocol

THE COMPLETE 2022 FLUTTER & DART DEVELOPMENT COURSE [ARABIC] Udemy.com

Website https://www.udemy.com/course/complete-flutter-arabic

FLUTTER CLEAN ARCHITECTURE [2022] [FLUTTER 3] (IN ARABIC) Udemy.com

Website https://www.udemy.com/course/flutter-clean-architecture-2022-flutter-3-in-arabic

WORK EXPERIENCE

01/02/2020 – 15/09/2021 Latakia, Syria

LECTURER BIT INSTITUTE

As a lecturer in Telecommunication and Electronics Engineering, I was responsible for delivering high-quality instruction in subjects like Cellular Systems, Computer Networks and Protocols, and Network Programming using Python. My role involved preparing and updating course materials, conducting practical lab sessions, and mentoring students on academic projects and career pathways.

LANGUAGE SKILLS

Mother tongue(s): **ARABIC**

Other language(s):

	UNDERSTANDING		SPEAKING		WRITING
	Listening	Reading	Spoken production	Spoken interaction	
ENGLISH	C1	C2	C1	C1	C2
TURKISH	C1	C1	C1	C1	C1

Levels: A1 and A2: Basic user; B1 and B2: Independent user; C1 and C2: Proficient user

DIGITAL SKILLS

Telecommunication Systems

Analog and digital modulation | Mobile Network (GSM, UMTS, LTE, 5G, WiFi e WiMax) | MIMO Technology and Beamforming | Digital Signal Processing (DSP) | Fiber Optic Networks | Radar and Microwave Transmission Systems | VoIP

Networking

CCNA R & S | TCP/IP | QoS | OSI model | Routing and Switching Protocols

Programming Languages

Python | MATLAB | C/C++ | Dart | Java

Wireless Protocols

IEEE 802.11 | IEEE 802.15.4 | WiFi | Bluetooth (Classic and BLE) | Zigbee

IoT

IoT Protcol Stack | IoT Protocols | Wireless Communication for IoT Devices (Wi-Fi, Zigbee, LoRa, Bluetooth)

Artificial Intelligence and Deep Learning

AI Training Techniques | AI Algorithms (Optimization) | TensorFlow | PyTorch | Keras | OpenCV | Neural Networks (CNN, RNN) | Pandas | Numpy | Google CoLab

Software Defined Networks (SDN)

OpenFlow Protocol | SDN Controllers | HPE VAN Controller | Opendaylight Controller

Mobile and Web App Development

Flutter | State Management (Bloc, Getx) | Backend Integration | Testing and Debugging Applications | VS Code

PROJECTS

01/10/2024 – 01/12/2024

A Novel Hybrid Meta-Heuristic Algorithm: Integrating Moth-Flame Optimization (MFO) and Cuckoo Search (CS) for Enhanced Optimization Performance

Objective: The objective of this project was to develop a hybrid meta-heuristic algorithm by combining the Moth-Flame Optimization (MFO) and Cuckoo Search (CS) algorithms. The goal was to leverage the strengths of both algorithms to create a more efficient and robust optimization technique for solving complex problems.
Results: The hybrid MFO-CS algorithm was successfully developed, combining the strengths of both Moth-Flame Optimization and Cuckoo Search. It demonstrated faster convergence and higher solution accuracy compared to the individual MFO and CS algorithms. The hybrid algorithm showed robustness and adaptability across various optimization problems. Benchmark testing confirmed its superior performance in terms of efficiency and reliability.
Skills: Meta-heuristic Algorithms, Hybrid Algorithm Design, Optimization Techniques, MATLAB, Benchmark Testing, and Problem-Solving.

01/03/2023 – 01/06/2023

Brain Tumor Detection and Segmentation Using Mask R-CNN Algorithm

Objective: The goal of this project is to detect and segment brain tumors in medical images using the Mask R-CNN algorithm. The aim is to create an automated system that accurately identifies tumor regions to assist in diagnosis and treatment planning.
Results: The Mask R-CNN model successfully detected and segmented brain tumors with high precision. It achieved a strong Intersection over Union (IoU) score, demonstrating its ability to accurately outline tumor boundaries. The model also showed good generalization on unseen data, making it suitable for real-world applications.
Skills: Mask R-CNN, Python, TensorFlow/Keras, Image Processing, Model Evaluation, Deep Learning, OpenCV, and Medical Imaging.

Link https://drive.google.com/drive/folders/1FxT0UgDr3dzlNiYy_YlH_qBLjREoBM7E?usp=drive_link

01/10/2022 – 01/01/2023

Enhancing the Weighted Chimp Optimization Algorithm (WChOA) Using Fitness-Distance Balance (FDB) for Improved Optimization Performance

Objective: The objective of this project was to enhance the performance of the Weighted Chimp Optimization Algorithm (WChOA) by integrating the Fitness-Distance Balance (FDB) approach. The goal was to improve the algorithm's efficiency, convergence speed, and solution accuracy for solving complex optimization problems.
Results: The enhanced WChOA algorithm achieved faster convergence and higher accuracy in solving optimization problems. It outperformed the original version in benchmark testing and demonstrated greater robustness.
Skills: Meta-heuristic Algorithms, Fitness-Distance Balance (FDB), Optimization Techniques, MATLAB, Algorithm Design, Benchmark Testing, and Problem-Solving.

01/11/2022 – 01/01/2023

Copy-Move Forgery Detection in Digital Images Using DWT, SIFT, and RANSAC Algorithms

Objective: The objective of this project was to develop a robust method for Copy-Move Forgery Detection in digital images using Discrete Wavelet Transform (DWT), Scale-Invariant Feature Transform (SIFT), and RANSAC algorithms. The goal was to create a technique capable of detecting forged regions even under challenges like geometric transformations (scaling, rotation), blurring, noise addition, and JPEG compression.
Results: The project successfully implemented a robust copy-move forgery detection system using DWT, SIFT, and RANSAC algorithms, effectively identifying forged regions even in images with geometric transformations, blurring, noise, and JPEG compression. The method demonstrated resilience against post-processing operations and achieved a practical balance between accuracy and time complexity.
Skills: Image Processing, Copy-Move Forgery Detection, Discrete Wavelet Transform (DWT), Scale-Invariant Feature Transform (SIFT), RANSAC Algorithm, Geometric Transformations, JPEG Compression, and Problem-Solving.

01/01/2019 – 01/01/2020

Design and Implementation of an SDN Network for Tishreen University Using HPE-VAN Controller and OpenFlow Protocol (BSc Thesis)

Objective: The objective of this project was to study Software-Defined Networking (SDN) technology and design a practical SDN network for Tishreen University using the HPE-VAN Controller and OpenFlow Protocol. The goal was to create a scalable, efficient, and manageable network infrastructure to meet the university's needs.
Results: The project successfully designed and implemented an SDN network for Tishreen University using the HPE-VAN Controller and OpenFlow Protocol, achieving centralized network management, improved scalability, and enhanced flexibility. The solution demonstrated efficient traffic routing, reduced network complexity, and provided a cost-effective, future-proof infrastructure for the university.
Skills: SDN Technology, HPE-VAN Controller, OpenFlow Protocol, Network Design, Network Management and Scalability.

PUBLICATIONS

2025

An Improved Weighted Chimp Optimization Algorithm Using Fitness-Distance Balance for Multilevel Image Thresholding Segmentation (Turkish version))

2025

An Improved Weighted Chimp Optimization Algorithm Using Fitness-Distance Balance for Multilevel Image Thresholding Segmentation (Under Review)

HONOURS AND AWARDS

01/09/2020

Al-Basel Certificate for Second Graduate – Tishreen University

The most important academic excellence certificate in Syria for Graduates. Final GPA: 88.80%.

Al-Basel Certificate for the Distinguished in Academic Study (Second, Third and Fourth Year) – Tishreen University

2017, 2018, 2019.

The most important academic excellence certificate in Syria.