CV

Name : - Abdussalam Elhanashi

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No of Citations: 2050

Articles :60

H-Index:24

Dr Abdussalam Elhanashi is a researcher at the Università di Pisa, Italy. He holds an M.Sc. in Electronics and Electrical Engineering from the University of Glasgow, Scotland, and an MBA from the University of Nicosia, Cyprus. He earned his Ph.D. in Information Engineering from the University of Pisa. In 2025, he was listed among the *World's Top 2% Scientists* according to the ranking by Stanford University and Elsevier. Dr. Elhanashi served as a Research Fellow at the University of Strathclyde in 2021, where he applied advanced deep learning models to CT-scan and X-ray image analysis. In 2022, he was a visiting researcher at the Graduate School of Advanced Science and Engineering at Hiroshima University, Japan. He has authored and co-authored numerous scientific papers in international journals and conferences, and he published the first Arabic-language book on artificial intelligence in Libya. He is also a developer with the Society for Imaging Informatics in Medicine (SIIM) in the United States and is an active member of both the IET and IEEE. His research interests include deep learning, computer vision, video and image processing, real-time surveillance systems, medical imaging, low-cost embedded systems, and IoT devices.

Employment

- Researcher (Department of Information Engineering) University of Pisa: Pisa, Toscana, IT (2019-07-15 to present)

CV – Academic Profile

PhD in Information Engineering at University of Pisa (Italy) :-From June 2019 till June 2022 (Graduated on 03/02/2023)

MBA, University of Nicosia: Nicosia, Cyprus (2015-11-11 to 2018-03-01)

MSc Electronic and Electrical Engineering with Management at University of Glasgow (The UK) Year :-From January 2017 till January 2018 (Graduated on 08/01/2018)

BSc in Electronics and Electrical Engineering at College of Engineering Technology Janzour (Libya) Year:-From February 2010 till February 2015 (Graduated on 10/02/2015)

Competences & skills

- Imaging & Video processing coding
- Object category classification, automated object-based image
- U-Net, nnU-Net, and Transformer-based models for organ/tissue segmentation (e.g., liver, brain, lungs).
- Developed deep learning models for automated diagnosis (e.g., tumors, fractures, lesions) using CNNs, Vision Transformers (ViTs), and self-supervised learning.
- Expertise in preprocessing, enhancement, and feature extraction from MRI, CT, X-ray, ultrasound, and microscopy images.
- Developed Federated Learning (FL) solutions for distributed training across hospitals while preserving patient privacy (e.g., using Flower (Flwr) and PySyft).
- Medical AI pipelines on AWS, GCP, and Azure for DICOM/NIfTI data.
- Designing Light-weight Neural Network architectures
- Designed lightweight neural networks (MobileNetV3, EfficientNet) for real-time inference on mobile/embedded devices
- Managed imbalanced datasets via GANs, diffusion models, and advanced augmentation

Internships & projects collaboration

- Completed a research internship program from 25 August 2021 to 26 September 2021 at the Department of Computer and Information Sciences at the University of Strathclyde in Glasgow, Scotland for applying DL for CT scans
- Completed a research internship program from 17 August 2022 to 15 September 2022 at Graduate School of Advanced Science and Engineering at University of Hiroshima in Hiroshima, Japan. (Detection of a particular fluid phenomenon – bag breakup – in images of droplet scattering).
- Participating in Re-Start Toscana project (2021-2023) , which is coordinated by prof. Sergio Saponara and involves two engineering departments of the University of Pisa (both DESTEC and DII) and also Fondazione Toscana Gabriele Monasterio for COVID-19

Membership

IET - Institution of Engineering and Technology

SIIM - Society for Imaging Informatics in Medicine

Roles

- Editor in Discover Image Springer
- Editor in Discover Artificial Intelligence Springer
- Editor in Hindawi Journal of Engineering
- Guest Editor in ELECTRONICS /MDPI
- Guest Editor in APPLIED SCIENCE /MDPI
- Reviewer in Several MDPI Journals, IEEE Access, Elsevier
- Course Facilitator @ www.openlearning.com

Publications of Books:

- Deep Learning in Action: Image and Video Processing for Practical Use *for Elsevier* ISBN: 9780443300783
- Deep Learning for Object Detection and Localization *for Springer* Ongoing

Publications of Articles:

1. Classification and Localization of Multi-Type Abnormalities on Chest X-Rays Images. IEEE Access, 2023
2. Advanced Deep Learning in Medical Imaging: Brain Tumor Detection and Localization with YOLOv9
3. Reconstruction error based implicit regularization method and its engineering application to lung cancer diagnosis.
4. An automated AI and video measurement techniques for monitoring social distancing, mask detection, and facial temperature screening for COVID-19. Real-time Processing of Image, Depth and Video Information, 2023-06-07.
5. Developing a real-time social distancing detection system based on YOLOv4-tiny and bird-eye view for COVID-19. Journal of Real-Time Image Processing, 2022-06
6. Application of complete ensemble empirical mode decomposition based multi-stream informer (CEEMD-MsI) in PM2.5 concentration long-term prediction. Expert Systems with Applications, 2024-07
7. Annotation Facial Images for Stroke Classification Acute vs Non Acute
8. Advancements in TinyML: Applications, Limitations, and Impact on IoT Devices
9. TeleStroke: real-time stroke detection with federated learning and YOLOv8 on edge devices
10. Recent Advances in Automatic Modulation Classification Technology: Methods, Results, and Prospects
11. A Pedestrian Detection Method Based on YOLOv7 Model. Lecture Notes in Electrical Engineering, 2024
12. Assembly of Solder Beads with a Surface Mount Technology Resistor with Optoelectronic Tweezers

and Freezing-Drying Techniques. Lecture Notes in Electrical Engineering, 2024

13. Car Recognition Based on HOG Feature and SVM Classifier. Lecture Notes in Electrical Engineering, 2024
14. Dynamic Capture Algorithm Based on Visual Background Extractor (Vibe). Lecture Notes in Electrical Engineering, 2024
15. Integration of Deep Learning into the IoT: A Survey of Techniques and Challenges for Real-World Applications. Electronics, 2023-12-07
16. Fast detection of bag-breakups in pulsating and steady airflow using video analysis and deep learning. Journal of Real-Time Image Processing, 2023-12
17. A real-time constellation image classification method of wireless communication signals based on the lightweight network MobileViT. Cognitive Neurodynamics, 2023- 10-10
18. An integrated and real-time social distancing, mask detection, and facial temperature video measurement system for pandemic monitoring. Journal of Real-Time Image Processing, 2023-10
19. MobileRaT: A Lightweight Radio Transformer Method for Automatic Modulation Classification in Drone Communication Systems. Drones, 2023-09-22
20. A Real-Time Vehicle Speed Prediction Method Based on a Lightweight Informer Driven by Big Temporal Data. Big Data and Cognitive Computing, 2023-07-15
21. Overview on Intrusion Detection Systems Design Exploiting Machine Learning for Networking Cybersecurity. Applied Sciences, 2023-06-25
22. A real-time transformer discharge pattern recognition method based on CNN-LSTM driven by few-shot learning. Electric Power Systems Research, 2023-06
23. DL-PR: Generalized automatic modulation classification method based on deep learning with priori regularization. Engineering Applications of Artificial Intelligence, 2023-06
24. Application of wavelet-packet transform driven deep learning method in PM2.5 concentration prediction: A case study of Qingdao, China. Sustainable Cities and Society, 2023-05
25. AI-based video & image processing on embedded system for surveillance applications, 2023-02-03
26. A Blind Modulation Classification Method Based on Decision Tree and High Order Cumulants. Lecture Notes in Electrical Engineering, 2023
27. Digital Modulation Recognition Method Based on High-Order Cumulant Feature Learning. Lecture Notes in Electrical Engineering, 2023
28. Machine Learning Techniques for Anomaly-Based Detection System on CSE-CIC- IDS2018 Dataset. Lecture Notes in Electrical Engineering, 2023
29. Modulation Recognition Based on BP Neural Network. Lecture Notes in Electrical Engineering, 2023
30. Fine-Grained Modulation Classification Using Multi-Scale Radio Transformer With Dual-Channel Representation. IEEE Communications Letters, 2022-06
31. Deep learning techniques to identify and classify COVID-19 abnormalities on chest x-ray images. Real-Time Image Processing and Deep Learning, 2022-05-27
32. An Intelligent Non-cooperative Spectrum Sensing Method Based on Convolutional Auto-encoder (CAE). Lecture Notes in Electrical Engineering, 2022
33. Heat Conduction Plate Layout Optimization Using Physics-Driven Convolutional Neural Networks. Applied Sciences (Switzerland), 2022
34. Impact of Image Resizing on Deep Learning Detectors for Training Time and Model Performance. Lecture Notes in Electrical Engineering, 2022
35. People detection and social distancing classification in smart cities for COVID-19 by using thermal images and deep learning algorithms, 2022 (preprint)
36. Implementing a real-time, AI-based, people detection and social distancing measuring system for Covid-19. Journal of Real-Time Image Processing, 2021-12
37. Real-time video fire/smoke detection based on CNN in antifire surveillance systems. Journal of Real-Time Image Processing, 2021-06
38. Reconstruct fingerprint images using deep learning and sparse autoencoder algorithms. Real-Time Image Processing and Deep Learning, 2021-04-12
39. Enabling YOLOv2 Models to Monitor Fire and Smoke Detection Remotely in Smart Infrastructures. Lecture Notes in Electrical Engineering, 2021
40. Recreating Fingerprint Images by Convolutional Neural Network Autoencoder Architecture. IEEE Access, 2021
41. Exploiting R-CNN for video smoke/fire sensing in antifire surveillance indoor and outdoor systems for smart cities. 2020 IEEE International Conference on Smart Computing (SMARTCOMP), 2020-09.