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## Faculty Vitae

### 1. Name

Omran Mousa Hammodi

### 2. Education

BSc, Control and Systems Eng., University of Technology, Iraq, July 1980.

MSc, Computer Engineering, University of Technology, Iraq, April 1984.

PhD, Computer Engineering, University of Hertfordshire, UK, November 2013.

### 3. Academic experience

UOITC, Lecturer, November 2015 - Present, Full-time.

Iraqi University, Lecturer, November 2016 - February 2017, Part-time

Iraqi University, Lecturer, March-July 2015, Part-time.

Institute of Technology-Baghdad, Assistant lecturer, September 2004 – July 2005, Part-time.

Higher Institute of Comprehensive Occupations, Az-Zawiyah, Libya, Assistant lecturer, September 2001 - August 2003, Full-time

Al-Mustansiriya University, College of Engineering, September 1999 - July 2001, Part-time

Higher Institute of Comprehensive Occupations, Derna, Libya, Assistant lecturer, September 1997 - August 1999, Full-time

Baghdad University, College of Education, Assistant lecturer, September 1995 - July 1997, Part-time

Al-Rafidain University College, Assistant lecturer, September 1994 - July 1996, Full-time

Al-Mustansiriya University, College of Engineering, September 1992 - July 1994, Part-time

Baghdad University, College of Sciences, Assistant lecturer, September 1987 - July 1988, Part-time

### 4. Non-Academic experience

Ministry of labor, Vocational Training Center, October 2004 - November 2015.

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Ministry of Industry, Vocational Training Center, October 1991 - November 1993.

Military Research and Developing Establishment, October 1989 - October 1991.

Scientific Research Council, November 1987 - October 1989.

## 9. Publications/Presentations

### 2021

Alzubaidi, L., Zhang, J., Humaidi, A., Al-Dujaili, A., Duan, Y., Al-Shamma, O., Santamaria, J., Fadhel, M., Al-Amidie, M., Farhan, L., "Review of deep learning: concepts, CNN architectures, challenges, applications, future directions", *Journal of Big Data*, 2021, vol. 8, no. 1, 53.  
DOI: [10.1186/s40537-021-00444-8](https://doi.org/10.1186/s40537-021-00444-8)

Alzubaidi, L., Al-Amidie, M., Al-Asadi, A., Humaidi, A., Al-Shamma, O., Fadhel, M., Zhang, J., Santamaria, J., Duan, Y., "Novel transfer learning approach for medical imaging with limited labeled data", *Cancers*, 2021, vol. 13, no. 7, 1590. DOI: [10.3390/cancers13071590](https://doi.org/10.3390/cancers13071590)

Fadhel, M.A., Al-Shamma, O., "Implementing a Hardware Accelerator to Enhance the Recognition Performance of the Fruit Mature", *Recent Trends in Signal and Image Processing (Proceedings of ISSIP 2020), Advances in Intelligent Systems and Computing*, vol. 1333, Springer Nature, 2021, pp. 41-52. DOI: [10.1007/978-981-33-6966-5\\_5](https://doi.org/10.1007/978-981-33-6966-5_5)

Fadhel, M.A., Al-Shamma, O., "Employing Parallel Hardware Architectures to Diagnose Sick Cell Anemia in Real-Time Basis", *Recent Trends in Signal and Image Processing (Proceedings of ISSIP 2020), Advances in Intelligent Systems and Computing*, vol. 1333, Springer Nature, 2021, pp. 29-39. DOI: [10.1007/978-981-33-6966-5\\_4](https://doi.org/10.1007/978-981-33-6966-5_4)

Fadhel, M.A., Al-Shamma, O., Alzubaidi, L., "Hardware accelerator for real-time holographic projector", *19th International Conference on Intelligent Systems Design and Applications (ISDA 2019), Advances in Intelligent Systems and Computing*, vol. 1181, Springer Nature, 2021, pp. 132-139. DOI: [10.1007/978-3-030-49342-4\\_13](https://doi.org/10.1007/978-3-030-49342-4_13)

Al-Yassin, H., Fadhel, M.A., Al-Shamma, O., Alzubaidi, L., "Solving lorenz ODE system based hardware booster", *19th International Conference on Intelligent Systems Design and Applications (ISDA 2019), Advances in Intelligent Systems and Computing*, vol. 1181, Springer Nature, 2021, pp. 245-254. DOI: [10.1007/978-3-030-49342-4\\_24](https://doi.org/10.1007/978-3-030-49342-4_24)

Alzubaidi, L., Al-Shamma, O., Fadhel, M.A., Arkah, Z.M., Awad, F.H., "A deep convolutional neural network model for multi-class fruits classification", *19th International Conference on Intelligent Systems Design and Applications (ISDA 2019), Advances in Intelligent Systems and Computing*, vol. 1181, Springer Nature, 2021, pp. 90-99. DOI: [10.1007/978-3-030-49342-4\\_9](https://doi.org/10.1007/978-3-030-49342-4_9)

### 2020

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Alzubaidi, L., Fadhel, M., Al-Shamma, O., Zhang, J., Santamaria, J., Duan, Y., Oleiwi, S.R., "Towards a Better Understanding of Transfer Learning for Medical Imaging: A Case Study", *Applied Sciences*, 2020, vol. 10, no. 13, 4523. DOI: [10.3390/app10134523](https://doi.org/10.3390/app10134523)

Alzubaidi, L., Fadhel, M., Oleiwi, S., Al-Shamma, O., Zhang, J., "DFU\_QUTNet: diabetic foot ulcer classification using novel deep convolutional neural network", *Multimedia Tools and Applications*, 2020, vol. 79, no. 21-22, pp. 15655-15677. DOI: [10.1007/s11042-019-07820-w](https://doi.org/10.1007/s11042-019-07820-w)

Al-Yassin, H., Mousa, J., Fadhel, M., Al-Shamma, O., Alzubaidim, L., "Statistical accuracy analysis of different detecting algorithms for surveillance system in smart city", *Indonesian Journal of Electrical Engineering and Computer Science*, vol. 18, no. 2, pp. 979-986, 2020. DOI: [10.11591/ijeecs.v18.i2.pp979-986](https://doi.org/10.11591/ijeecs.v18.i2.pp979-986)

Alzubaidi, L., Al-Shamma, O., Fadhel, M., Farhan, L., Zhang, J., Duan, Y., "Optimizing the Performance of Breast Cancer Classification by Employing the Same Domain Transfer Learning from Hybrid Deep Convolutional Neural Network Model", *Electronics*, vol. 9, no. 3, pp. 445. DOI: [10.3390/electronics9030445](https://doi.org/10.3390/electronics9030445)

Alzubaidi, L., Fadhel, M., Al-Shamma, O., Zhang, J., Duan, Y., "Deep learning models for classification of red blood cells in microscopy images to aid in sickle cell anemia diagnosis", *Electronics*, vol. 9, no. 3, pp. 427. DOI: [10.3390/electronics9030427](https://doi.org/10.3390/electronics9030427)

Fadhel, M., Al-Shamma, O., Alzubaidi, L., Oleiwi, S.R., "Real-time Sickle Cell Anemia Diagnosis Based Hardware Accelerator", *Proceedings of NTICT 2020, Communications in Computer and Information Sciences (CCIS)*, vol. 1183, Springer Nature, 2020, pp. 189-199. DOI: [10.1007/978-3-030-55340-1\\_14](https://doi.org/10.1007/978-3-030-55340-1_14)

Alzubaidi, L., Fadhel, M., Al-Shamma, O., Zhang, J., "Robust and efficient approach to diagnose sickle cell anemia in blood", *18th International Conference on Intelligent Systems Design and Applications (ISDA 2018), Advances in Intelligent Systems and Computing*, vol. 940, Springer Nature, 2020, pp. 560-570. DOI: [10.1007/978-3-030-16657-1\\_52](https://doi.org/10.1007/978-3-030-16657-1_52)

Alzubaidi, L., Al-Shamma, O., Fadhel, M., Farhan, L., Zhang, J., "Classification of red blood cells in sickle cell anemia using deep convolutional neural network", *18th International Conference on Intelligent Systems Design and Applications (ISDA 2018), Advances in Intelligent Systems and Computing*, vol. 940, Springer Nature, 2020, pp. 550-559. DOI: [10.1007/978-3-030-16657-1\\_51](https://doi.org/10.1007/978-3-030-16657-1_51)

Fadhel, M., Al-Shamma, O., Oleiwi, S., Taher, B., Alzubaidi, L., "Real-time PCG diagnosis using FPGA", *18th International Conference on Intelligent Systems Design and Applications (ISDA 2018), Advances in Intelligent Systems and Computing*, vol. 940, Springer Nature, 2020, pp. 518-529. DOI: [10.1007/978-3-030-16657-1\\_48](https://doi.org/10.1007/978-3-030-16657-1_48)

Al-Shamma, O., Fadhel, M., Hameed, R., Alzubaidi, R., Zhang, J., "Boosting convolutional neural networks performance based on FPGA accelerator", *18th International Conference on Intelligent Systems Design and Applications (ISDA 2018), Advances in Intelligent Systems and Computing*, vol. 940, Springer Nature, 2020, pp. 509-517. DOI: [10.1007/978-3-030-16657-1\\_47](https://doi.org/10.1007/978-3-030-16657-1_47)

## 2019

Alzubaidi, L., Hasan, R.I., Awad, F., Fadhel, M., Al-Shamma, O., Zhang, J., "Multi-class Breast

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Cancer Classification by A Novel Two-branch Deep Convolutional Neural Network Architecture", International Conference on Developments in eSystems Engineering, DeSE, Oct. 2019, pp. 268-273. DOI: 10.1109/DeSE.2019.00057.

Al-Shamma, O., Awad, F., Alzubaidi, L., Fadhel, M., Arkah, Z., Farhan, L., "Employment of Multi-Classifer and Multi-Domain Feature for PCG Recognition", International Conference on Developments in eSystems Engineering, DeSE, Oct. 2019, pp. 321-325. DOI: 10.1109/DeSE.2019.00066.

Awad, F., Fadhel, M., Alheeti, K., Al-Shamma, O., Alzubaidi, L., "Enhancing Apple Maturation Recognition Performance Based on Field Programmable Gate Array Implementation", *Journal of Southwest Jiaotong University*, vol. 54, no. 4, 2019.

Al-Shamma, O., Fadhel, M., Hasan, H., "Employing FPGA Accelerator in Real-Time Speaker Identification Systems", *Recent Trends in Signal and Image Processing (Proceedings of ISSIP 2018), Advances in Intelligent Systems and Computing*, vol. 922, Springer Nature, 2019, pp. 125-134. DOI: [10.1007/978-981-13-6783-0\\_12](https://doi.org/10.1007/978-981-13-6783-0_12)

Hameed, R., Sabir, M., Fadhel, M., Al-Shamma, O., and Alzubaidi, L., "Human Emotion Classification Based on Respiration Signal", *Proceedings of the International Conference on Information and Communication Technology, ACM International Conference Proceeding Series*, Baghdad, Iraq, 15th April 2019, pp. 239-245. DOI: [10.1145/3321289.3321315](https://doi.org/10.1145/3321289.3321315)

## 2018

Al-Shamma, O., Ali, R., and Hasan, H., "Programmable Aileron Sizing Algorithm for Use in Preliminary Aircraft Design Software", *Journal of Engineering and Applied Sciences*, vol. 13, no. 10, pp. 3458-3462, 2018. DOI: [10.3923/jeasci.2018.3458.3462](https://doi.org/10.3923/jeasci.2018.3458.3462)

Fadhel, M., Al-Shamama, O., and Taher, B., "Real-time Detection and Tracking Moving Vehicles for Video Surveillance Systems Using FPGA", *International Journal of Engineering & Technology*, vol. 7, no. 2.31, pp. 117-121, 2018. DOI: [10.14419/ijet.v7i2.31.13422](https://doi.org/10.14419/ijet.v7i2.31.13422)

Al-Shamma, O., Ali, R., and Hasan, H., "Employing Control Surface Model in Preliminary Aircraft Design Software", *International Journal of Engineering & Technology*, vol. 7, no. 2.31, pp. 135-140, 2018. DOI: [10.14419/ijet.v7i2.31.13426](https://doi.org/10.14419/ijet.v7i2.31.13426)

Al-Shamma, O., Ali, R., and Hasan, H., "An Educational Rudder Sizing Algorithm for Utilizing in Aircraft Design Software", *International Journal of applied Engineering Research*, vol. 13, no. 10, pp. 7889-7894, 2018.

Al-Shamma, O., Hasan, H., and Fadhel, M., "The Impact of Teaching Data Communications and Networking in a Business Informatics Curriculum", 11th International Conference on Researches in Science, Technology, and Management (RSTM-18), Hyderabad, India, 11th March 2018.

## 2017

Al-Shamma, O., Ali, R., and Hasan, H., "An Instructive Algorithm for Aircraft Elevator Sizing to be Used in Preliminary Aircraft Design software", *Journal of Applied Engineering Science*, vol. 15, no. 4,

## **2016**

Al-Shamma, O., and Ali, R., "Delivery of Aircraft Design Curriculum through Problem-Based Learning Approach", *International Journal of Research*, vol. 3, no. 4, pp. 109-119, February 2016.

## **2014**

Ali, R., and Al-Shamma, O., "A Comparative Study of Cost Estimation models used for Preliminary Aircraft Design", *Global Journal of Research in Engineering: B Automotive Engineering*, vol. 14, no. 4, pp. 9-18, 2014.

Al-Shamma, O., and Ali, R., "Transport Aircraft Weight Estimation as a Function of Range and Number of Passengers", *International Journal of Research in Aeronautical and Mechanical engineering (IJRAME)*, vol. 2, no. 5, pp. 99-96, May 2014.

## **2013**

Al-Shamma, O., and Ali, R., "Aircraft Weight Estimation in Interactive Design Process", 72nd Annual International Conference on Mass Properties, Society of Allied Weight Engineers, St. Louis, Mo, USA, 18-23 May 2013.

## **2012**

Al-Shamma, O., and Ali, R., "Interactive Aircraft Design for Undergraduate Teaching", Applied Aerodynamic Conference: Modelling & Simulation in Aerodynamic Design Process, Royal Aeronautical Society, Bristol, UK, 17-19 July 2012.