

# Fayçal BENSALI

Professor, AMHEA, SMIEEE



Department of Electrical Engineering  
College of Engineering  
Qatar University  
P. O. Box 2713, Doha  
Qatar



(+974) 4403 4234



(+974) 4403 4201



[f.bensaali@qu.edu.qa](mailto:f.bensaali@qu.edu.qa)

[f.bensaali.ga@ieee.org](mailto:f.bensaali.ga@ieee.org)

## Professional Profile

### Education

- May 2005**      **PhD in Electronic and Computer Engineering**  
*School of Electronics, Electrical Engineering and Computer Science*  
*Queen's University, Belfast, United Kingdom*  
Dissertation- Accelerating Matrix Product on Reconfigurable Hardware for Image Processing Applications
- July 1999**      **Dipl-Ing (MEng) in Electronics**  
*University of Constantine*  
*Algeria*

### Professional Experience

- Oct 2020 - Present**      **Professor**  
*Department of Electrical Engineering*  
*Qatar University, Qatar*
- July 2015 - Oct 2020**      **Associate Professor**  
*Department of Electrical Engineering*  
*Qatar University, Qatar*
- Feb 2013 - June 2015**      **Assistant Professor**  
*Department of Electrical Engineering*  
*Qatar University, Qatar*
- May 2010 - Aug 2013**      **Senior Lecturer**  
*School of Engineering and Technology*  
*University of Hertfordshire, UK*
- Mar 2008 – Apr 2010**      **Lecturer**  
*School of of Electronic, Communication and Electrical Engineering*  
*University of Hertfordshire, UK*
- May 2006 – Feb 2008**      **Post-Doctoral Research Fellow**  
*School of Electronics, Communication and Electrical Engineering*  
*University of Hertfordshire, UK*
- Mar 2005 – July 2005**      **Part Time Research Assistant**  
*EPSRC funded project*  
*School of Electronics, Electrical Engineering and Computer Science*  
*Queen's University, Belfast, UK*
- Sep 1999 – July 2001**      **Teaching Assistant**  
*School of Computer Science*  
*University of Jijel, Algeria*

## Awards & Recognition

<b>2002</b>	<b>PhD Scholarship:</b> Queen's University, Belfast, United Kingdom
<b>2010 &amp; 2012</b>	<b>Vice-Chancellor's Award Nominee:</b> Tutor of the year category, University of Hertfordshire, United Kingdom
<b>2013</b>	<b>Research Excellence Award</b> (3 <sup>rd</sup> prize) at Qatar Foundation Annual Research Conference
<b>2013</b>	<b>MSc/PhD Forum Best Paper Award</b> (3 <sup>rd</sup> prize) at the International Conference on Electronics, Circuits and Systems (ICECS)
<b>2014</b>	<b>Best PhD paper award</b> at the ACS International Conference on Computer Systems and Applications (AICCSA)- PhD Symposium
<b>2016</b>	<b>1<sup>st</sup> place</b> , Senior Design Project Contest 2016, College of Engineering, Qatar University <b>2<sup>nd</sup> place</b> , Senior Design Project Contest 2016, College of Engineering, Qatar University
<b>2017</b>	<b>Best Oral Presentation Award</b> , ELSO-SWAC conference, 2017. <b>Best Poster Presentation Award</b> , ELSO-SWAC conference, 2017. <b>1<sup>st</sup> place</b> , Senior Design Project Contest 2017, College of Engineering, Qatar University. <b>1<sup>st</sup> place</b> for Best Project in Qatar University Honors Program Project Fair 2017.
<b>2018</b>	<b>3<sup>rd</sup> place</b> , Senior Design Project Contest 2018, College of Engineering, Qatar University.
<b>2019</b>	<b>1<sup>st</sup> place</b> , Annual Undergraduate Research Experience Program Competition, Qatar Foundation, Qatar, April 2019. <b>3<sup>rd</sup> place</b> , Senior Design Project Contest 2019, College of Engineering, Qatar University, May 2019. <b>Excellence</b> in Teaching, College of Engineering, Qatar University, May 2019. <b>Best Oral Presentation Award</b> , 8 <sup>th</sup> Global Conference on Global Warming 2019, April 2019. <b>Best Paper Presentation Award</b> , 17 <sup>th</sup> IEEE Student Conference on Research and Development, October 2019. <b>Best Free Paper Presentation Award</b> , Qatar Critical Care Conference, October 2019.
<b>2020</b>	<b>3<sup>rd</sup> place</b> , Annual Undergraduate Research Experience Program Competition, Qatar Foundation, Qatar, April 2020. <b>Best Student Paper Award</b> , IEEE Global Power, Energy, and Communication Conference, October 2020.
<b>2021</b>	<b>Best Poster Award</b> , 14 <sup>th</sup> International Conference on Biomedical Electronics and Devices (BIODEVICES/BIOSTEC), February 2021.
<b>2022</b>	<b>2<sup>nd</sup> place</b> , Senior Design Project Contest 2022, College of Engineering, Qatar University, May 2022.

## Area of Expertise

- Embedded Systems and High-Performance Computing
  - Custom Computing using Field Programmable Gate Array
  - Image and Vision Systems
  - Connected Health
  - IoT
  - Artificial Intelligence
-

## Professional Activities

### Professional Memberships

<b>2009-Present</b>	Member of the Electronics KTN (Knowledge Transfer Network)
<b>2009-Present</b>	Associate Member of the Higher Education Academy
<b>2003-2006, 2014-2015</b>	IEEE Member
<b>2015-present</b>	IEEE Senior Member

### Training and Workshops Attended (Selected)

- Cybercrime Awareness Training, Cyber Security Center, Ministry of Interior, Qatar, 05 Jan 2022 (Online).
- Workshop on Comparing synchronous and asynchronous online learning during Covid-19- pandemic: a pilot study from Qatar University, Engineering Education and Instruction Technology (EEEITCT'21) Pre-Conference Workshops. 20 Feb 2021.
- Workshop on websites and technological tools to be used during their online teaching, Engineering Education and Instruction Technology (EEEITCT'21) Pre-Conference Workshops. 20 Feb 2021.
- Workshop on Teaching Remotely with Limited Technology, Engineering Education and Instruction Technology (EEEITCT'21) Pre-Conference Workshops. 20 Feb 2021.
- Workshop on Education 4.0 Initiative, college of Engineering, 14 Dec 2020
- REMOTE Connected Faculty Summit, TED Masterclass -A Workshop for Improving Online Presentations, Arizona State University, July 13, 2020.
- One-day Workshop on Intellectual Property & Technology Transfer (IPTT) and Data Management, Qatar National Research Fund, 20 Sep 2017, Qatar Science and Technology Park, Doha, Qatar.
- Three-day workshop on "Empowering Connected Health in Qatar through Intelligent Medical Devices and IoT", Qatar University, Doha, 19-21 April 2016.
- The IEEE Xplore Digital Library Training, 13 Oct 2014, Qatar University, Qatar.
- ScienceDirect, Scopus and Mendeley Training, 23 Sep 2014, Qatar University, Qatar.
- Three-day Workshop on "ABET Advanced Assessment". 8-10 Sep 2014, Qatar University.
- One day Training on "FPGA development with Altium Designer", 3 Apr 2012, Premier EDA Solutions Ltd., Stanstead Abbots, UK.
- Two-day training course on "Using Altera Tools and Boards for Embedded System Design", 7-8 July 2011, Rutherford Appleton Laboratory, Didcot, UK.
- The Continuing Professional Academic Development Programme in Learning and Teaching in Higher Education (CPAD):
- CPAD 1: Foundations for Learning, Teaching and Assessment, 9-11 Sept 2008, University of Hertfordshire, UK.
- CPAD2: Developing Learning, Teaching and Assessment, 8 Oct – 3 Dec 2008, University of Hertfordshire, UK.
- CPAD3: Enhancing the Student Learning Experience, 7 Oct – 2 Dec 2009, University of Hertfordshire, UK.
- One-day research degree supervisor training, 14 Oct 2008, University of Hertfordshire, UK.
- One-day Short Course on "C-Based Design for FPGA", 5 Feb 2008, Rutherford Appleton Laboratory, Didcot, UK.
- One-day KTP (Knowledge Transfer Partnership) supervisor Workshop, 19 Sep 2007, Prospero House, London, UK.
- 4-day Training on "Handel-C using DK", Nov 2002, Celoxica Ltd, Oxford, UK.

**Editorial  
Boards/  
Conference  
TPC**

**(Selected)**

- Guest Editor: Energies (MDPI), Special Issue on Internet of Energy and Artificial Intelligence for Sustainable Cities.
- Guest Editor: Future Generation Computer Systems (Elsevier), Special Issue on Intelligent IoT Systems for Healthcare and Rehabilitation.
- Guest Editor: IEEE Internet of Things Journal, Special Issue on Real-time Data Processing for Internet of Things (RTDPIoT).
- Guest Editor: Journal of Sensor and Actuator Networks, Special Issue on Empowering eHealth with Smart Internet of Things (IoT) Medical Devices.
- Special Session Program Committee member: 24<sup>th</sup> EUROMICRO Conference on Digital System Design, Special Session on Advanced Systems for Health, Wellness and Personal Assistance (ASHWPA), Maspalomas, Gran Canaria, Spain, Aug 31-Sep 2, 2022.
- Member of the TPC: 3<sup>rd</sup> International Conference on Artificial Intelligence and Machine Learning (CAIML 2022), Toronto, Canada, Aug 23-24, 2022
- Member of the program committee: 2022 International Conference on Industrial Electronics and Instrumentation (ICoIEI 2022), Chengdu, China, Oct 15-17, 2022.
- Member of the TPC: The 11<sup>th</sup> International Conference on Intelligent Systems and Applications (INTELLI 2022), Venice, Italy, May 22-26, 2022.
- Member of the TPC: The IEEE International Conference on Big Data Computing Service and Machine Learning Applications (BigDataService 2022), California, USA, Aug 22-25, 2022.
- Track chair: The 17<sup>th</sup> International Conference on Mobility, Sensing and Networking (MSN 2021), Dec 13-15, 2021, Exeter, UK
- Program Chair: The 7<sup>th</sup> IEEE International Conference on Big Data Computing Service and Machine Learning Applications, Aug 23-26, 2021, Online
- Member of the TPC: 2021 International Conference on Computer Communication and Artificial Intelligence (CCAI 2021), Guangzhou, China, May 7-9, 2021.
- Member of the TPC: The 10<sup>th</sup> International Conference on Intelligent Systems and Applications INTELLI 2021, Nice, France, July 18-22, 2021.
- Member of the TPC: 16<sup>th</sup> Annual System of Systems Engineering Conference, Sweden, June 14-18, 2021.
- Special Session Program Committee member: 24<sup>th</sup> EUROMICRO Conference on Digital System Design, Special Session on Advanced Systems for Health, Wellness and Personal Assistance (ASHWPA), Palermo, Italy, Sep 1-3, 2020.
- Session chair: Education, Engineering Education and Instruction Technology Conference (EEEITCT'21), Qatar, Feb 23, 2021
- Member of the TPC: The 17<sup>th</sup> Embedded Vision Workshop in conjunction with Held in conjunction with CVPR 2021 (Virtual), June 19-25, 2021
- Member of the TPC: International Conference on Industrial Electronics and Instrumentation, Prague, Czech Republic, May 14-16, 2021.
- Member of the TPC: 2021 IEEE International Conference on Robotics, Automation and Artificial Intelligence (RAAI 2021), Hong Kong, Apr 21-23, 2021.
- General Chair: 6<sup>th</sup> Int. Symp. on Real-time Data Processing for Cloud Computing In conjunction with the In conjunction with the 13<sup>th</sup> IEEE/ACM International Conference on Utility and Cloud Computing, Leicester, UK, Dec 7-10, 2020.
- Member of the TPC: The International Conference on Cyber-Living, Cyber-Syndrome and Cyber-Health (CyberLife 2020), Online, Dec 10-12, 2020.
- Member of the TPC: The 9<sup>th</sup> International Conference on Intelligent Systems and Applications, Porto, Portugal, Oct 18-22, 2020.
- Member of the TPC: Smart Energy Systems Conference, Rome, Italy, Sep 10-11, 2020.
- Special session TPC member: 23<sup>rd</sup> EUROMICRO Conference on Digital System Design, Special Session on Advanced Systems for Health, Wellness and Personal Assistance, Slovenia, Aug 26-28, 2020.

- Member of the TPC: The 7<sup>th</sup> International Symposium on Computer vision and the Internet (VisionNet'20), India, Oct 14-17, 2020
- Member of TPC: The 16<sup>th</sup> Embedded Vision Workshop in conjunction with European conference on computer vision (ECCV2020), Glasgow, UK, Aug 23-28, 2020
- Member of TPC: Systems of Systems Engineering Conference, Budapest, Hungary, June 2-4, 2020.
- Member of the TPC: 6<sup>th</sup> IEEE International Conference on Big Data Computing Service and Machine Learning Applications, Oxford, UK, Apr 13-16, 2020.
- Member of the TPC: 12<sup>th</sup> International Conference on Advances in Circuits, Electronics and Micro-electronics, Nice, France, Oct 27-31, 2019.
- Member of the TPC: 8<sup>th</sup> International Conference on Embedded Systems and Applications, Toronto, Canada, July 13-14, 2019.
- General Chair: 5<sup>th</sup> International Symposium on Real-time Data Processing for Cloud Computing In conjunction with the 16<sup>th</sup> IEEE International Conference on Advanced and Trusted Computing, Leister, UK, Aug 19-23, 2019.
- Member of the TPC: The 5<sup>th</sup> International Symposium on Signal Processing Intelligent Recognition Systems (SIRS'19), India, Dec 18-21, 2019.
- Member of the TPC: 3<sup>rd</sup> International Computational Science and Engineering Conference, Qatar, Oct 21-22, 2019.
- Special session TPC member: 22<sup>nd</sup> EUROMICRO Conference on Digital System Design, Special Session on Advanced Systems for Health, Wellness and Personal Assistance, Greece, Aug 28-30, 2019.
- Member of the TPC: The 15<sup>th</sup> IEEE Embedded Vision Workshop, Held in conjunction with IEEE CVPR 2019, California, USA, June 16, 2019.
- Session chair: Electronics & Instrumentation, 10<sup>th</sup> IEEE GCC Conference and Exhibition, Kuwait, 21 April 2019.
- Member of the TPC: The 4<sup>th</sup> International Symposium on Signal Processing Intelligent Recognition Systems (SIRS'17), India, Sept 19-22, 2018.
- General Chair: 4<sup>th</sup> International Symposium on Real-time Data Processing for Cloud Computing In conjunction with the 20<sup>th</sup> IEEE International Conference on High Performance Computing and Communications (HPCC 2018), Exeter, UK, June 28-30, 2018.
- Judge: The Undergraduate Awards, 2017.
- Member of the TPC: 2018 International Conference on Computer Intelligent Systems & Networking, Tunisia, January 3-4, 2018.
- Member of International Advisory and Technical Committee, International Conference on Big Data and Internet of Things, London, UK, Dec 20-22, 2017.
- Member of the TPC: IEEE International Symposium on Signal Processing and Information Technology, Bilbao, Spain, Dec 18-20, 2017.
- General Chair: 3<sup>rd</sup> International Symposium on Real-time Data Processing for Cloud Computing in conjunction with the 10<sup>th</sup> IEEE/ACM International Conference on Utility and Cloud Computing, Austin, Texas, USA, Dec 5-8, 2017.
- Member of the TPC: Euromicro Conference on Digital System Design, Special Session on Advanced Systems for Health, Wellness and Personal Assistance, Vienna, Austria, Aug 30–Sep 1 2017.
- General Chair: 2<sup>nd</sup> International Symposium on Real-time Data Processing for Cloud Computing in conjunction with the 10<sup>th</sup> IEEE International Conference on Cyber, Physical, and Social Computing, Exeter, UK, June 21-23, 2017.
- Member of the TPC: International Workshop on Security and Forensics of IoT to be held in conjunction with the 10<sup>th</sup> IEEE International Conference on Internet of Things, Exeter, UK, June 21-23, 2017.
- Member of the TPC: The 7<sup>th</sup>-13<sup>th</sup> IEEE Workshop on Embedded Computer Vision Held in conjunction with IEEE CVPR, 2011-2018.
- Member of the TPC: The 3<sup>rd</sup> International Symposium on Signal Processing Intelligent Recognition Systems, India, Sept 13-16, 2017.

- General Chair: International Symposium on Real-time Data Processing for Cloud Computing In conjunction with the 9<sup>th</sup> IEEE/ACM International Conference on Utility and Cloud Computing, Shanghai, China, Dec 6-9, 2016.
- Member of the TPC: The 16<sup>th</sup> IEEE International Symposium on Signal Processing and Information Technology, Limassol, Cyprus, Dec 12-14, 2016.
- Member of Organizing Committee and Session Chair: Workshop on “Empowering Connected Health in Qatar through Intelligent Medical Devices and IoT”, Qatar University, Doha, Apr 19-21, 2016.
- Member of the TPC: The International Conference on Signal Processing & Data Mining, Rome, Italy, Nov 5-7, 2015.
- Tutorials Co-Chair: 26<sup>th</sup> International Conference on Microelectronics (ICM 2014), Dec 2014, Qatar.
- Chair for two poster sessions and one regular session (Digital Signal and Data Processing): 26<sup>th</sup> International Conference on Microelectronics (ICM 2014), Dec 14-17, 2014, Qatar.
- Member of TPC: International Symposium on Computer Vision and the Internet, 2014.
- Member of the TPC: Int. Workshop in Computing, Communication & informatics, 2014.
- Session Chair (Electronics and Instrumentation): 7<sup>th</sup> IEEE GCC Conference and Exhibition, Nov 17-20, 2013.
- Member of the TPC: 11<sup>th</sup> International Conference on Information Science, Signal Processing and their Applications, 2012.

## Referee

Regular reviewer for a number of international journals and conferences (e.g. IEEE Transactions on Circuits and Systems for Video Technology, IEEE Sensors Journal, Journal of Real-Time Image Processing- Springer, EURASIP Journal on Image and Video Processing, IET Circuits, Devices & Systems, The Journal of Electronic Imaging, IEEE International Symposium on Circuits and Systems, IEEE Workshop on Embedded Computer Vision, IEEE GCC conference, ACS/IEEE International Conference on Computer Systems and Applications, International Conference on Information Science, Signal Processing and their Applications, IEEE International Conference on Electronics Circuits and Systems).

## Research & Commercial

### Research Grants

<b>1. Title:</b>	E-Tawfeer: A Secure Edge-Based Energy Efficiency Platform Using Artificial Intelligence for Behavioural Change
<b>Source:</b>	Qatar National Research Fund (QNRF)
<b>Role:</b>	Lead Principal Investigator
<b>Funding:</b>	359,920.00 USD
<b>2. Title:</b>	Embedded multi-core systems for multi-critical applications in the Internet of Things Era (EMBIoT)
<b>Source:</b>	Qatar National Research Fund (QNRF)
<b>Role:</b>	Lead Principal Investigator
<b>Funding:</b>	692,760.00 USD
<b>3. Title:</b>	consumer Engagement towards Energy saving behaviour by means of Exploiting Micro Moments and Mobile recommendation systems (EM) <sup>3</sup>
<b>Source:</b>	Qatar National Research Fund (QNRF)
<b>Role:</b>	Lead Principal Investigator
<b>Funding:</b>	599,928.00 USD
<b>4. Title:</b>	Smart system for automatic assessment of bioprosthetic heart valve designs for transcatheter aortic valve replacement therapy
<b>Source:</b>	Qatar National Research Fund (QNRF)
<b>Role:</b>	Principal Investigator
<b>Funding:</b>	509,650.00 USD

<b>5. Title:</b>	Reinventing ECMO Simulation with Comprehensive and Cost-Effective Technology	consum
<b>Source:</b>	MARUBINI	Exploit
<b>Role:</b>	Lead Principal Investigator	Qatar N
<b>Funding:</b>	98,000.00 USD	Faycal
<b>6. Title:</b>	CER2EBRAL - Computer Enabled Radiological Resource for Blood flow Rates in Aneurysms using Lattice-Boltzmann	599,928
<b>Source:</b>	Qatar National Research Fund (QNRF)	
<b>Role:</b>	Principal Investigator	
<b>Funding:</b>	978,552.05 USD	
<b>7. Title:</b>	Revolutionizing ECMO Simulation with Affordable yet High-Fidelity Technology	
<b>Source:</b>	Qatar University	
<b>Role:</b>	Lead Principal Investigator	
<b>Funding:</b>	41,000.00 USD	
<b>8. Title:</b>	Human Circulatory System Simulation for Extracorporeal Membrane Oxygenation Therapy	
<b>Source:</b>	Qatar National Research Fund (QNRF)	
<b>Role:</b>	Primary Research Mentor	
<b>Funding:</b>	18,888.00 USD	
<b>9. Title:</b>	Extracorporeal Membrane Oxygenation Simulator for Patient Management Training at HMC	
<b>Source:</b>	Qatar National Research Fund (QNRF)	
<b>Role:</b>	Primary Research Mentor	
<b>Funding:</b>	15,315.00 USD	
<b>10 Title:</b>	Development of Instrumentation for High-Precision Angular Position and Speed Measurement	
<b>Source:</b>	Qatar National Research Fund (QNRF)	
<b>Role:</b>	Research Mentor	
<b>Funding:</b>	20,000.00 USD	
<b>11 Title:</b>	HD ANPR on Heterogeneous SoC Platform	
<b>Source:</b>	Qatar National Research Fund (QNRF)	
<b>Role:</b>	Primary Research Mentor	
<b>Funding:</b>	39,400.00 USD	
<b>12 Title:</b>	Reconfigurable Smart Wireless Gas Sensor Network	
<b>Source:</b>	Qatar University	
<b>Role:</b>	Principal Investigator	
<b>Funding:</b>	33,000.00 USD	
<b>13 Title:</b>	A Reconfigurable Connected Health Platform	
<b>Source:</b>	Qatar University	
<b>Role:</b>	Lead Principal Investigator	
<b>Funding:</b>	33,000.00 USD	
<b>14 Title:</b>	Acceleration of DSP algorithms on Zync SoC platform	
<b>Source:</b>	Qatar University	
<b>Role:</b>	Lead Principal Investigator	
<b>Funding:</b>	14,000.00 USD	
<b>15 Title:</b>	Human Circulatory System for Extracorporeal Membrane Oxygenation Simulation – Phase II	
<b>Source:</b>	Qatar University	
<b>Role:</b>	Lead Principal Investigator	
<b>Funding:</b>	2,700.00 USD	
<b>16 Title:</b>	Human Circulatory System for Extracorporeal Membrane Oxygenation Simulation – Phase II	
<b>Source:</b>	Qatar University	
<b>Role:</b>	Lead Principal Investigator	
<b>Funding:</b>	2,700.00 USD	
<b>17 Title:</b>	Consumer Engagement Towards Domestic Energy Saving Behavior Through Recommender Systems	
<b>Source:</b>	Qatar University	
<b>Role:</b>	Lead Principal Investigator	
<b>Funding:</b>	2,500.00 USD	



<b>18 Title:</b>	IoT based Fall and ECG Monitoring System
<b>Source:</b>	Qatar University
<b>Role:</b>	Lead Principal Investigator
<b>Funding:</b>	2,200.00 USD
<b>19 Title:</b>	Vital Signs Monitoring System using IoT Devices
<b>Source:</b>	Qatar University
<b>Role:</b>	Lead Principal Investigator
<b>Funding:</b>	2,200.00 USD
<b>20 Title:</b>	IoT-based Class Attendance Management System using Fingerprint
<b>Source:</b>	Qatar University
<b>Role:</b>	Lead Principal Investigator
<b>Funding:</b>	2,000.00 USD
<b>21 Title:</b>	3D Face Recognition for Border Control
<b>Source:</b>	University of Hertfordshire
<b>Role:</b>	Principle Investigator
<b>Funding:</b>	7,500.00 USD

## Publications

- Refereed Journals**
1. A. Sayed, Y. Himeur, A. Alsalemi, F. Bensaali and A. Amira, "Intelligent Edge-Based Recommender System for Internet of Energy Applications," IEEE Systems Journal, doi: 10.1109/JSYST.2021.3124793. *in press*
  2. A. N. Sayed, Y. Himeur, and F. Bensaali, "Deep and Transfer Learning for Building Occupancy Detection: A Review and Comparative Analysis," Engineering Applications of Artificial Intelligence, vol. 115, p. 105254, 2022.
  3. A. Al-Kababji, A. Alsalemi, Y. Himeur, R. Fernandez, F. Bensaali, A. Amira, and N. Fetais, "Interactive Visual Study for Residential Energy Consumption Data," Journal of Cleaner Production, vol. 366, p. 132841, 2022.
  4. Y. Himeur, M. Elnour, F. Fadli, N. Meskin, I. Petri, Y. Rezgui, F. Bensaali, and A. Amira, "Next-generation Energy Systems for Sustainable Smart Cities: Roles of Transfer Learning," Sustainable Cities and Society, vol. 85, p. 104059, 2022.
  5. I. Varlamis, C. Sardianos, C. Chronis, G. Dimitrakopoulos, Y. Himeur, A. Alsalemi, F. Bensaali, and A. Amira, "Using big data and Federated Learning for Generating Energy Efficiency Recommendations," International Journal of Data Science and Analytics, 2022.
  6. A. Sayed, Y. Alhomsy, A. Alsalemi, F. Bensaali, N. Meskin, and A. A. Hssain, "IoT-based mock oxygenator for Extracorporeal Membrane Oxygenation simulator," Artificial Organs, 2022.
  7. Y. Himeur, S. S. Sohail, F. Bensaali, A. Amira, and M. Alazab, "Latest trends of security and privacy in Recommender Systems: A comprehensive review and future perspectives," Computers & Security, vol. 118, p. 102746, 2022.
  8. A. Alsalemi, Y. Himeur, F. Bensaali, and A. Amira, "An innovative edge-based internet of energy solution for promoting energy saving in buildings," Sustainable Cities and Society, vol. 78, p. 103571, 2022.
  9. Y. Himeur, A. Sayed, A. Alsalemi, F. Bensaali, A. Amira, I. Varlamis, M. Eirinaki, C. Sardianos, and G. Dimitrakopoulos, "Blockchain-based recommender systems: Applications, challenges and future opportunities," Computer Science Review, vol. 43, p. 100439, 2022.
  10. Y. Himeur, A. Alsalemi, F. Bensaali, A. Amira, and A. Al-Kababji, "Recent trends of smart nonintrusive load monitoring in buildings: A review, open challenges, and Future Directions," International Journal of Intelligent Systems, 2022.
  11. Y. Himeur, A. Alsalemi, F. Bensaali, A. Amira, I. Varlamis, G. Bravos, C. Sardianos, and G. Dimitrakopoulos, "Techno-Economic Assessment of Building Energy Efficiency Systems Using Behavioral Change: A case study of an edge-based micro-moments solution," Journal of Cleaner Production, vol. 331, p. 129786, 2022.
  12. I. Varlamis, C. Sardianos, C. Chronis, G. Dimitrakopoulos, Y. Himeur, A. Alsalemi, F. Bensaali, and A. Amira, "Smart fusion of sensor data and human feedback for personalized energy-saving recommendations," Applied Energy, vol. 305, p. 117775, 2022.
  13. A. Alsalemi, Y. Alhomsy, F. Bensaali, G. Alinier, and A. Hssain, "Assessing learning outcomes in extracorporeal membrane oxygenation simulations with a novel simulator and Instructor Application," IEEE Transactions on Learning Technologies, vol. 14, no. 5, pp. 568–575, 2021.
  14. A. Mahmoud, A. Alsalemi, F. Bensaali, A. A. Hssain, and I. Hassan, "A review of Human Circulatory System Simulation: Bridging the gap between Engineering and Medicine," Membranes, vol. 11, no. 10, p. 744, 2021.



15. A. Alsalemi, Y. Himeur, F. Bensaali, and A. Amira, "Smart Sensing and end-users' behavioral change in residential buildings: An edge-based internet of energy perspective," *IEEE Sensors Journal*, vol. 21, no. 24, pp. 27623–27631, 2021.
16. H. Ali, U. U. Tariq, J. Hardy, X. Zhai, L. Lu, Y. Zheng, F. Bensaali, A. Amira, K. Fatema, and N. Antonopoulos, "A survey on system level energy optimisation for MPSoCs in IoT and Consumer Electronics," *Computer Science Review*, vol. 41, p. 100416, 2021.
17. M. Noorizadeh, A. Alsalemi, Y. Alhomsy, A. N. Sayed, F. Bensaali, N. Meskin, and A. A. Hssain, "Advanced thermochromic ink system for medical blood simulation," *Membranes*, vol. 11, no. 7, p. 520, 2021.
18. Y. Alhomsy, A. Alsalemi, M. Noorizadeh, F. Bensaali, N. Meskin, and A. A. Hssain, "A modular approach for a patient unit for Extracorporeal Membrane Oxygenation simulator," *Membranes*, vol. 11, no. 6, p. 424, 2021.
19. Y. Himeur, A. Alsalemi, F. Bensaali, A. Amira, "Smart power consumption abnormality detection in buildings using micro-moments and improved k-nearest neighbors," *International Journal of Intelligent Systems*, vol. 36, pp. 2865-2894, 2021.
20. Y. Himeur, A. Alsalemi, F. Bensaali, A. Amira, "Smart non-intrusive appliance identification using a novel descriptor based on the extraction of 2D local power histograms, Sustainable Cities and Society, vol. 67, pp. 102764, 2021.
21. Y. Himeur, K. Ghanem, A. Alsalemi, F. Bensaali, A. Amira, "Artificial intelligence based anomaly detection of energy consumption in buildings: A review, current trends and new perspectives," *Applied Energy*, vol. 287, pp. 116601, 2021.
22. Y. Himeur, A. Alsalemi, A. Al-Kababji, F. Bensaali, A. Amira, C. Sardianos, G. Dimitrakopoulos, I. Varlamis, "A survey of recommender systems for energy efficiency in buildings: Principles, challenges and prospects," *Information Fusion*, vol. 72, pp. 1-21, 2021.
23. A. Alsalemi, Y. Himeur, F. Bensaali, A. Amira, C. Sardinos, C. Chronis, I. Varlamis, and G. Dimitrakopoulos, "Achieving Domestic Energy Efficiency using Micro-Moments and Intelligent Recommendations", *IEEE Systems Journal*, vol. 15, no. 1, pp. 1256--1263, 2021.
24. Y. Himeur, A. Alsalemi, F. Bensaali and A. Amira, "An intelligent non-intrusive load monitoring scheme based on 2D phase encoding of power signals", *International Journal of Intelligent Systems*, vol. 36, pp. 72-93, 2021.
25. C. Sardianos, I. Varlamis, C. Chronis, G. Dimitrakopoulos, A. Alsalemi, Y. Himeur, F. Bensaali, A. Amira, "The emergence of Explainability of Intelligent Systems: Delivering Explainable and Personalised Recommendations for Energy Efficiency", *International Journal of Intelligent Systems*, vol. 36, pp. 656-680, 2021.
26. A. Alsalemi, Y. Alhomsy, F. Bensaali, A. Ait Hssain, "A High-Realism and Cost-Effective Training Simulator for Extracorporeal Membrane Oxygenation", *IEEE Access*, vol. 8, pp. 15047-15055, 2021.
27. A. Al-Kababji, A. Amira, F. Bensaali, A. Jarouf, L. Shidqi, H. Djelouat, "An IoT-based framework for remote fall monitoring", *Biomedical Signal Processing and Control*, vol. 67, pp. 102532, 2021.
28. M. Nikolaidou, C. Kotronis, I. Routis, E. Politi, G. Dimitrakopoulos, D. Anagnostopoulos, H. Djelouat, A. Amira, F. Bensaali, "Incorporating patient concerns into design requirements for IoMT-based systems: The fall detection case study", *Health informatics journal*, vol. 77, pp. 1-15, 2021.
29. Y. Himeur, A. Alsalemi, F. Bensaali and A. Amira, "Building power consumption datasets: Survey, taxonomy and future directions", *Energy and Buildings*, vol. 227, November 2020.
30. Y. Himeur, A. Alsalemi, F. Bensaali and A. Amira, "A novel approach for detecting anomalous energy consumption based on micro-moments and deep neural network", *Cognitive Computation*, vol. 12, pp. 1381-1401, September 2020.
31. Y. Himeur, A. Alsalemi, A. Al-Kababji, F. Bensaali, A. Amira, "Data fusion strategies for energy efficiency in buildings: Overview, challenges and novel orientations", *Information Fusion*, vol. 64, pp. 99-120, December 2020.
32. A. Alsalemi, Y. Himeur, F. Bensaali, A. Amira, C. Sardinos, I. Varlamis, and G. Dimitrakopoulos, "Achieving Domestic Energy Efficiency using Micro-Moments and Intelligent Recommendations", *IEEE Access*, vol. 8, pp. 15047-15055, December 2020.
33. C. Sardinos, I. Varlamis, G. Dimitrakopoulos, D. Anagnostopoulos, A. Alsalemi, F. Bensaali, Y. Himeur and A. Amira, "REHAB-C: Recommendations for Energy HABits Change", *Future Generation Computer Systems*, vol. 112, pp. 394-407, November 2020.
34. I. Boukhenoufa, A. Amira, F. Bensaali and S. Esfahani, "A novel gateway-based solution for remote elderly monitoring", *Journal of Biomedical Informatics*, vol. 109, pp. 1-11, September 2020.
35. Y. Himeur, A. Alsalemi, F. Bensaali, A. Amira, "Robust event-based non-intrusive appliance recognition using multi-scale wavelet packet tree and ensemble bagging tree", *Applied Energy*, vol. 267, pp. 1-16, June 2020.

36. X. Zhai, M. Chen, S. Esfahani, A. Amira, F. Bensaali, J. Abi-Nahed, S. Dakua R. Richardson and P. Coveney, "Heterogeneous System-on-Chip based Lattice-Boltzmann Visual Simulation System", *IEEE Systems Journal*, vol. 14, Issue 2, pp. 110-116, June 2020.
37. S. Esfahani, X. Zhai, M. Chen, A. Amira, F. Bensaali, J. Abi-Nahed, S. Dakua, G. Younes, A. Baobeid, R. Richardson and P. Coveney, "Lattice-Boltzmann Interactive Blood Flow Simulation Pipeline", *International Journal of Computer Assisted Radiology and Surgery*, vol. 15, Issue 4, pp. 629-639, April 2020.
38. A. Alsalemi, L. Tanaka, M. Ogino, M. Al Disi, Y. Alhomsy, F. Bensaali, A. Amira and G. Alinier, "A Skills Acquisition Study on ECMOjo: a Screen-based Simulator for Extracorporeal Membrane Oxygenation", *Perfusion*, vol. 35, Issue 2, pp. 110-116, March 2020.
39. H. Djelouat, A. Amira, F. Bensaali, C. Kotronis, E. Politi, M. Nikolaidou and G. Dimitrakopoulos, "Real-time ECG Monitoring using Compressive sensing on a Heterogeneous Multicore Edge-Device", *Microprocessors and Microsystems*, vol. 72, pp. 1-10, February 2020.
40. H. Djelouat, A. Amira, F. Bensaali and I. Boukhenoufa, "Secure Compressive Sensing for ECG Monitoring", *Computers & Security*, vol. 88, pp. 1-8, January 2020.
41. A. Al-Zawqari, O. Hommos, A. Al-Qahtani, A. Farhat, F. Bensaali, X. Zhai and A. Amira, "HD number plate localization and character segmentation on the Zynq heterogeneous SoC", *Journal of Real-Time Image Processing*, vol. 16, Issue 6, pp. 2351-2365, December 2019.
42. S. P. Dakua, J. Abinahed, A. Zakaria, S. Balakrishnan G. Younes, N. Navkar, A. Al-Ansari, X. Zhai, F. Bensaali, A. Amira, "Moving Object Tracking in Clinical Scenarios: Application to Cardiac Surgery and Cerebral Aneurysm Clipping", *International Journal of Computer Assisted Radiology and Surgery*, vol. 14, Issue 12, pp. 2165-2176, December 2019.
43. C. Kotronis, I. Routis, E. Politi, M. Nikolaidou, G. Dimitrakopoulos, D. Anagnostopoulos, A. Amira, F. Bensaali and I. Boukhenoufa, "Evaluating Internet of Medical Things (IoMT)-Based Systems from a Human-Centric Perspective", *Internet of Things*, Elsevier, vol. 8, pp. 1-17, December 2019.
44. A. Alsalemi, M. Ramadan, F. Bensaali, A. Amira, C. Sardinis, I. Varlamis, and G. Dimitrakopoulos, "Endorsing domestic energy saving behavior using micro-moment classification", *Applied Energy*, vol. 250, pp. 1302-1311, Sep 2019.
45. A. Alsalemi, C. Sardinis, F. Bensaali, I. Varlamis, A. Amira and G. Dimitrakopoulos, "The Role of Micro-Moments: A Survey of Habitual Behavior Change and Recommender Systems for Energy Saving", *IEEE Systems Journal*, vol. 13, Issue 3, pp. 1-10, September 2019.
46. X. Zhai, A. Amira, F. Bensaali, A. Al-Shibani, A. Al-Nassr, A. El-Sayed, M. Eslami, S. Dakua and J. Abi-Nahed, "Zynq SoC based Acceleration of the Lattice Boltzmann Method", *Concurrency and Computation: Practice and Experience*, Wiley, vol. 32, Issue 17, pp. 3376-3387, September 2019.
47. M. Al Disi, A. Alsalemi, Y. Alhomsy, F. Bensaali, A. Amira and G. Alinier, "Extracorporeal Membrane Oxygenation Simulation-based Training: Methods, Drawbacks and a Novel Solution", *Perfusion*, vol. 34, Issue 3, pp. 183-194, April 2019.
48. M. Al Disi, A. Alsalemi, Y. Alhomsy, F. Bensaali, A. Amira and G. Alinier, "Using Thermochromism to Simulate Blood Oxygenation in Extracorporeal Membrane Oxygenation", *Perfusion*, vol. 34, Issue 2, pp. 106-115, March 2019.
49. H. Djelouat, X. Zhai, A. Amira and F. Bensaali, "System-on-Chip Solution for Patients Biometric: A Compressive Sensing-Based Approach", *IEEE Sensors Journal*, vol. 18, Issue 23, pp. 9629-9639, December 2018.
50. M. Al Disi, H. Djelouat, C. Kotronis, E. Politis, A. Amira, F. Bensaali G. Dimitrakopoulos and G. Alinier, "ECG Signal Reconstruction on the IoT-Gateway and Efficacy of Compressive Sensing under Real-time Constraints", *IEEE Access*, Special Section on Wearable and Implantable Devices and Systems, vol. 6, Issue 1, pp. 69130-69140, December 2018.
51. U. Khurshid, A. Mahmoud, A. Abducarim, S. Mahmud, O. Abdallah, E. Mohamed, F. Bensaali, A. Amira, A. Alsalemi, A. Ait Hssain, G. Alinier, I. Hassan, "Towards the design and implementation of a human circulatory system for Extracorporeal Membrane Oxygenation simulation", *The Egyptian Journal of Critical Care Medicine*, vol. 6, Issue 3, pp. 87-89, December 2018.
52. H. Djelouat, A. Amira and F. Bensaali, "Compressive Sensing-Based IoT Applications: A Review", *Journal of Sensor and Actuator Networks*, Special Issue on Empowering eHealth with Smart Internet of Things (IoT) Medical Devices, vol. 7, Issue 4, October 2018.
53. A. Alsalemi, M. Al Disi, Y. Alhomsy, F. Bensaali, A. Amira and G. Alinier, "Enhancing Clinical Learning Through an Innovative Instructor Application for ECMO Patient Simulators", *Simulation and Gaming*, SAGE Journals, vol. 49, Issue 5, pp. 497-514, October 2018.
54. A. Farhat, O. Hommos, A. Al-Zawqari, A. Al-Qahtani, F. Bensaali, X. Zhai and A. Amira, "Optical Character Recognition on Heterogeneous SoC for HD Automatic Number Plate Recognition System", *EURASIP Journal on Image and Video Processing*, Springer, vol. 58, pp. 1-17, December 2018.

55. G. Alinier, H. Ibrahim, A. Alsalemi, M. Al Disi, A. Ait Hssain, A. Labib, Y. Alhoms, F. Bensaali, A. Amira and I. Ibrahim, "Addressing the challenges of ECMO simulation", *Perfusion*, vol. 33, pp. 568-576, October 2018.
56. M. Al Disi, A. Alsalemi, Y. Alhoms, F. Bensaali, A. Amira and G. Alinier, "Revolutionizing ECMO Simulation with Affordable yet High-Fidelity Technology", *The American Journal of Emergency Medicine*, Elsevier, vol. 36, pp. 1310-1312, July 2018.
57. H. Djelouat, A. Ait Si Ali, A. Amira and F. Bensaali, "An interactive software tool for gas identification", *Journal of Natural Gas Science and Engineering*, Elsevier, vol. 55, pp. 612-624, July 2018.
58. X. Zhai, M. Eslami, E. Husseinb, M. Filali, S. Shalaby, A. Amira, F. Bensaali, S. Dakua, J. Abi-Nahed, A. Al-Ansari and A. Z. Ahmed, "Real-Time Automated Segmentation Technique for Cerebral Aneurysm on Reconfigurable System on Chip", *Journal of Computational Science*, vol. 27, pp. 35-45, July 2018.
59. A. Ait Si Ali, A. Farhat, M. Saqib, A. Amira, F. Bensaali, M. Benammar and A. Bermak, "Embedded Platform for Gas Applications Using Hardware/Software Co-Design and RFID", *IEEE Sensors Journal*, vol. 18, No. 11, pp. 4633-4642, June 2018.
60. H. Baali, H. Djelouat, A. Amira and F. Bensaali, "Empowering Technology Enabled Care Using IoT and Smart Devices: A Review", *IEEE Sensors Journal*, vol. 18, Issue 5, pp. 5169-5179, March 2018.
61. H. Baali, X. Zhai, H. Djelouat, A. Amira and F. Bensaali, "Inequality Indexes as Sparsity Measures Applied to Ventricular Ectopic Beats Detection and its Efficient Hardware Implementation", *IEEE Access*, vol. 6, pp. 9464-9472, March 2018.
62. H. Djelouat, H. Baali, A. Amira and F. Bensaali, "An Adaptive Joint Sparsity Recovery for Compressive Sensing Based EEG System", *Wireless Communications and Mobile Computing*, Wiley/Hindawi, vol. 2017, Article ID 9823684, 10 pages, 2017. doi:10.1155/2017/9823684.
63. A. Ait Si Ali, H. Djelouat, A. Amira, F. Bensaali, M. Benammar and A. Bermak, "Electronic nose system on the Zynq SoC platform", *Microprocessors and Microsystems*, Elsevier, vol. 53, pp. 145-156, August 2017.
64. M. Benammar, A. Khattab, S. Saleh, F. Bensaali and F. Touati, "A Sinusoidal Encoder-to-Digital Converter Based on an Improved Tangent Method", *IEEE Sensors Journal*, vol. 17, Issue 16, pp. 5169-5179, August 2017.
65. X. Zhai, A. Ait Si Ali, A. Amira and F. Bensaali, "ECG Encryption and Identification based Security Solution on the Zynq SoC for Connected Health Systems", *Journal of Parallel and Distributed Computing*, vol. 106, pp. 143-152, August 2017.
66. H. Ali, F. Bensaali and F. Jaber, "Novel Approach to Non-Invasive Blood Glucose Monitoring based on Transmittance and Refraction of Visible Laser Light", *IEEE Access*, vol. 5, pp. 9163-9174, May 2017.
67. H. Djelouat, A. Ait Si Ali, A. Amira and F. Bensaali, "Compressive sensing based electronic nose platform", *Journal Digital Signal Processing*, vol. 60, pp. 350-359, January 2017.
68. A. Alsalemi, M. Al Disi, Y. Alhoms, I. Ahmed, F. Bensaali, G. Alinier and A. Amira, "Using thermochromic ink for medical simulations", *Qatar Medical Journal: 4th Annual ELSO-SWAC Conference Proceedings*, vol. 2017, 63, pp. 1-2. DOI: <https://doi.org/10.5339/qmj.2017.swacelso.63>
69. M. Al Disi, A. Alsalemi, Y. Alhoms, I. Ahmed, F. Bensaali, G. Alinier and A. Amira, "Design and Implementation of a Modular ECMO Simulator", *Qatar Medical Journal: 4th Annual ELSO-SWAC Conference Proceedings*, vol. 2017, 62, pp. 1-2. DOI: <http://dx.doi.org/10.5339/qmj.2017.swacelso.62>
70. X. Zhai, A. Ait Si Ali, A. Amira and F. Bensaali, "MLP Neural Network Based Gas Classification System on Zynq SoC", *IEEE Access*, Special Session on Cooperative and Intelligent Sensing, vol. 4. Issue 1, pp. 8138-8146, Dec 2016.
71. M. A. Akbar, A. Ait Si Ali, A. Amira, F. Bensaali, M. Benammar, M. Hassan, and A. Bermak, "An Empirical Study for PCA and LDA Based Feature Reduction for Gas Identification", *IEEE Sensors Journal*, vol. 16, Issue 14, pp. 5734 - 5746, July 2016.
72. S. Alshorman, F. Bensaali, F. Jaber, "A wireless oxygen saturation and heart rate monitoring and alarming system based on the Qatar Early Warning Scoring system", *Journal of Emergency Medicine, Trauma & Acute Care*, October 2016. <http://dx.doi.org/10.5339/jemtac.2016.icepq.155>
73. M. A. Akbar, M. Zgaren, A. Ait Si Ali, A. Amira, M. Benammar, F. Bensaali, M. Sawan and A. Bermak, "Gas Identification Using Passive UHF RFID Sensor Platform", *Sensors and Transducers Journal*, vol. 194. Issue 11, pp. 42-53, November 2015.
74. A. Ait Si Ali, A. Amira, F. Bensaali, M. Benammar and M. A. Akbar, "Design and Implementation of a Gas Identification on the Zynq SoC Platform," *The ARPN Journal of Engineering and Applied Sciences*, vol. 10, No. 20, pp. 9758-9764, November 2015.
75. X. Zhai, F. Jaber, F. Bensaali and A. Mishra, "Hardware Acceleration of a Dielectrophoresis System for Achieving a Single-Neuron-Per-Electrode Arrangement in Microelectrode Arrays",

The International Journal of Simulation, Systems, Science and Technology, vol. 16. Issue 3, pp. 4.1-4.7, June 2015.

76. M. A. Akbar, A. Ait Si Ali, A. Amira, F. Bensaali, M. Benammar, M. Hassan and A. Bermak, "Impact of feature reduction and operating temperature on gas identification," ARPN Journal of Engineering and Applied Sciences, vol. 10, No. 19, pp. 8783-8790, October 2015.
77. X. Zhai and F. Bensaali, "Improved Number Plate Character Segmentation Algorithm and Its Efficient FPGA Implementation", Journal of Real-time Image Processing, Springer, vol.10, issue 1, pp. 91-103, Mar 2015.
78. X. Zhai, F. Bensaali and R. Sotudeh, "Real-Time Optical Character Recognition on Field Programmable Gate Array for Automatic Number Plate Recognition System", IET Circuits, Devices & Systems, vol.7, Issue 6, pp. 337-344, Nov 2013.
79. X. Zhai, F. Bensaali and S. Ramalingam, "Improved Number Plate Localisation Algorithm and its Efficient Field Programmable Gate Arrays Implementation", IET Circuits, Devices & Systems, vol. 7, issue 2, pp. 93-103, Mar 2013.
80. X. Zhai, F. Bensaali and R. Sotudeh, "FPGA-based Number Plate Binarisation and Adjustment for ANPR Systems", SPIE Journal of Electronic Imaging, vol. 22, issue 1, pp. 1-11, Jan 2013.
81. Z. Musoromy, S. Ramalingam, F. Bensaali and G. Pissanidis, "Real-time DSP-based Edge Detection Techniques for License Plate Detection: A Comparative Study", Journal of Information Assurance and Security, pp. 294-301, ISSN 1554-1010, vol. 6, 2011.
82. F. Bensaali, A. Amira and R. Sotudeh, "A General Framework for efficient FPGA Implementation of Matrix Product", The Mediterranean Journal of Computers and Networks, pp 124-131, vol. 3, No. 3, July 2007.
83. R. Sotudeh, Z. Ahmad and F. Bensaali, "Intelligent Co-operative Processor-In-Memory Architectures", The Mediterranean Journal of Electronics and Communications, vol. 3, No. 2, pp 52-65, April 2007.
84. F. Bensaali and A. Amira, "Field Programmable Gate Array Based Parallel Matrix Multiplier for 3D Affine Transformations", the IEE Proceedings on Vision, Image and Signal Processing - Special Issue on Rapid Prototyping of Signal Processing Algorithms, vol. 153, Issue 6, pp 739-746, December 2006.
85. F. Bensaali and A. Amira, "Accelerating Color Space Conversion on Reconfigurable Hardware", Image and Vision Computing, Elsevier, vol. 23, Issue 11, pp 935-942, October 2005.
86. F. Bensaali, A. Amira and A. Bouridane, "Accelerating Matrix Product on Reconfigurable Hardware for Image Processing Applications", IEE Proceedings on Circuits, Devices and Systems, vol. 152, Issue 3, pp 236-246, June 2005.
87. F. Bensaali and A. Amira, "Design and Implementation of Efficient Architectures for Color Space Conversion", The International Journal on Graphics, Vision and Image Processing, vol. 5, Issue 1, pp 37-47, December 2004.

## Book Chapters

1. S. Boughorbel, Y. Himeur, H. E. Salman, F. Bensaali, F. Farooq, and H. C. Yalcin, "Applications of machine learning for predicting heart failure," Predicting Heart Failure, pp. 171–188, 2022. <https://doi.org/10.1002/9781119813040.ch8>
2. A. Al-Kababji, F. Bensaali, S. P. Dakua, Scheduling Techniques for Liver Segmentation: ReduceLRonPlateau vs OneCycleLR," In: Bennour, A., Ensari, T., Kessentini, Y., Eom, S. (eds) Intelligent Systems and Pattern Recognition. ISPR 2022. Communications in Computer and Information Science, vol 1589. Springer, Cham, 2022. [https://doi.org/10.1007/978-3-031-08277-1\\_17](https://doi.org/10.1007/978-3-031-08277-1_17)
3. Y. Himeur, A. Alsalemi, F. Bensaali, A. Amira, "Detection of Appliance-Level Abnormal Energy Consumption in Buildings Using Autoencoders and Micro-moments," In: Lazaar, M., Duvallat, C., Touhafi, A., Al Achhab, M. (eds) Proceedings of the 5<sup>th</sup> International Conference on Big Data and Internet of Things. BDIoT 2021. Lecture Notes in Networks and Systems, vol 489. Springer, Cham, 2022. [https://doi.org/10.1007/978-3-031-07969-6\\_14](https://doi.org/10.1007/978-3-031-07969-6_14)
4. A. Sayed, A. Alsalemi, Y. Himeur, F. Bensaali, A. Amira, "Endorsing Energy Efficiency Through Accurate Appliance-Level Power Monitoring, Automation and Data Visualization. In: Ben Ahmed, M., Teodorescu, H.N.L., Mazri, T., Subashini, P., Boudhir, A.A. (eds) Networking, Intelligent Systems and Security. Smart Innovation, Systems and Technologies, vol 237. Springer, 2022. [https://doi.org/10.1007/978-981-16-3637-0\\_43](https://doi.org/10.1007/978-981-16-3637-0_43)
5. Y. Himeur, A. Alsalemi, F. Bensaali, A. Amira, "The Emergence of Hybrid Edge-Cloud Computing for Energy Efficiency in Buildings," In: Arai, K. (eds) Intelligent Systems and Applications. IntelliSys 2021. Lecture Notes in Networks and Systems, vol 295. Springer, Cham, 2022. [https://doi.org/10.1007/978-3-030-82196-8\\_6](https://doi.org/10.1007/978-3-030-82196-8_6)
6. A. Alsalemi, Y. Himeur, F. Bensaali, A. Amira, "Appliance-Level Monitoring with Micro-Moment Smart Plugs". In: Ben Ahmed M., Rakıp Kara I., Santos D., Sergeyeva O., Boudhir

- A.A. (eds) Innovations in Smart Cities Applications Volume 4. SCA 2020. Lecture Notes in Networks and Systems, vol 183, pp. 942-953, Springer, 2021.
7. C. Sardianos, I. Varlamis, C. Chronis, G. Dimitrakopoulos, A. Alsalemi, Y. Himeur, F. Bensaali, A. Amira, "Reshaping consumption habits by exploiting energy-related micro-moment recommendations: A case study," In: M. Helfert, C. Klein, B. Donnellan, O. Gusikhin (Eds.), Smart Cities, Green Technologies and Intelligent Transport Systems, Springer International Publishing, pp. 65–84, 2021.
  8. Y. Himeur, A. Alsalemi, F. Bensaali and A. Amira, "Improving in-home appliance identification using fuzzy-neighbors-preserving analysis based QR-decomposition," The 5<sup>th</sup> International Congress on Information and Communication Technology, London, UK, February 2020.
  9. Y. Himeur, A. Alsalemi, F. Bensaali, A. Amira, I. Varlamis, C. Sardianos and G. Dimitrakopoulos, "On the applicability of 2D local binary patterns for identifying electrical appliances in non-intrusive load monitoring," Intelligent Systems and Applications. IntelliSys 2020. Advances in Intelligent Systems and Computing, Springer, Cham, vol. 1252, pp. 188-205, Springer, Cham, January 2021.
  10. A. Alsalemi, F. Bensaali, A. Amira, N. Fetais, C. Sardianos, I. Varlamis "Smart Energy Usage and Visualization Based on Micro-Moments", Intelligent Systems and Applications. IntelliSys 2019. Advances in Intelligent Systems and Computing, vol. 1038, pp. 557-566, Springer, Cham, January 2020.
  11. S. Dakua, J. Abinahed, A. Al-Ansari, P. Bermejo, A. Zakaria, A. Amira and F. Bensaali, "A Method Towards Cerebral Aneurysm Detection in Clinical Settings," Processing and Analysis of Biomedical Information, Lecture Notes in Computer Science, vol. 11379, Springer, Cham, 2019.
  12. H. Djelouat, M. Al Disi, X. Zhai, A. Amira and F. Bensaali, "Compressive Sensing based ECG Biometric System", Intelligent Systems and Applications. IntelliSys 2018. Advances in Intelligent Systems and Computing, vol. 869, pp. 126-137, Springer, Cham, January 2019.
  13. M. Al Disi, H. Baali, H. Djelouat, A. Amira, F. Bensaali, G. Dimitrakopoulos and G. Alinier, "An Efficient Compressive Sensing Method for Connected Health Applications", Intelligent Systems and Applications. IntelliSys 2018. Advances in Intelligent Systems and Computing, vol. 869, pp. 365-373, Springer, Cham, January 2019.
  14. C. Kotronis, A. Tsadimas, M. Nikolaidou, D. Anagnostopoulos, G. Dimitrakopoulos, A. Amira and F. Bensaali "Leveraging Quality of Service and Cost in Cyber-Physical Systems Design", Economics of Grids, Clouds, Systems, and Services. GECON 2019. Lecture Notes in Computer Science, vol 11819. pp. 208-217, Springer, Cham, 2019.
  15. D. Abunahia, H. Abou Al Ola, T. Ismail, A. Amira, A. Ait Si Ali, F. Bensaali, "Generalised and Versatile Connected Health Solution on the Zynq SoC", Intelligent Systems and Applications. IntelliSys 2016. Studies in Computational Intelligence, vol. 751, pp 454-474, Springer, Cham, January 2018.
  16. M. A. Akbar, H. Djelouat, A. Ait Si Ali, A. Amira, F. Bensaali, M. Benammar, A. Bermak, "Design and Performance Evaluation of a Committee Machine for Gas Identification," Proceedings of the SAI Intelligent Systems Conference (IntelliSys), Lecture Notes in Networks and Systems, vol. 16, pp. 936-945, Springer, August 2017.
  17. D. G. Abunahia, H. R. Abou Al Ola, T. A. Ismail, A. Amira, A. Ait Si Ali, F. Bensaali, "A Reconfigurable Connected Health Platform Using ZYNQ System on Chip," Proceedings of the SAI Intelligent Systems Conference (IntelliSys), Lecture Notes in Networks and Systems, vol. 16, pp. 857-867, Springer, August 2017.
  18. A. Ait Si Ali, X. Zhai, A. Amira, F. Bensaali and N. Ramzan, "Enhanced Biometric Security and Privacy using ECG on the Zynq SoC", Biometric Security and Privacy – Opportunities & Challenges in The Big Data Era, Springer, pp 179-202, 2017.
  19. A. Ait Si Ali, A. Amira, F. Bensaali, M. Benammar, M. Hassan and A. Bermak, "Versatile Gas Monitoring System on the Heterogeneous Zynq SoC Platform", Proceedings of the 4<sup>th</sup> International Gas Processing Symposium, Elsevier, ISBN: 9780444634610, June 2015.
  20. F. Bensaali and A. Amira, "Design and Efficient FPGA Implementation of an RGB to YCrCb Color Space Converter Using Distributed Arithmetic", Proceedings of the International Conference on Field Programmable Logic (FPL), Lecture Notes in Computer Science, vol. 3203, pp. 991-995, Springer Verlag, August 2004.
  21. A. Amira, A. Bouridane, P. Milligan and F. Bensaali, "Custom Coprocessor based Matrix Algorithms for Image and Signal Processing", Proceedings of the International Conference on Field Programmable Logic (FPL), Lecture Notes in Computer Science, pp. 730-739, Springer Verlag, September 2002.

**Refereed  
Conference  
Papers**

1. Y. Himeur, A. Alsalemi, F. Bensaali, A. Amira, "Appliance identification using a histogram post-processing of 2D local binary patterns for smart grid applications", in Proc. 25th International Conference on Pattern Recognition (ICPR), 2021, Milan, Italy.
2. M. Noorzadeh, A. Alsalemi, Y. Alhoms, F. Bensaali, and N. Meskin, "A thermochromic ink heater-cooler color change system for medical blood simulation," Proceedings of the 14th International Joint Conference on Biomedical Engineering Systems and Technologies, 2021.
3. C. Sardinios, C. Chronis, I. Varlamis, G. Dimitrakopoulos, Y. Himeur, A. Alsalemi, F. Bensaali, A. Amira, "Real-time personalised energy saving recommendations", IEEE Conference on Smart Data (SmartData), pp. 366–371, 2020.
4. Y. Himeur, A. Alsalemi, F. Bensaali and A. Amira, "Efficient multi-descriptor fusion for non-intrusive appliance recognition", The IEEE International Symposium on Circuits and Systems, Seville, Spain, May 2020.
5. A. Al-Kababji, A. Alsalemi, Y. Himeur, R. Fernandez, F. Bensaali, A. Amira and N. Fetais, "Energy Data Visualizations on Smartphones for Triggering Behavioral Change: Novel vs. Conventional", 2<sup>nd</sup> Global Power, Energy and Communication Conference (GPECOM), October 2020.
6. C. Sardinios, I. Varlamis, C. Chronis, G. Dimitrakopoulos, Y. Himeur, A. Alsalemi, F. Bensaali and A. Amira, "Data Analytics, Automations, and Micro-Moment Based Recommendations for Energy Efficiency", 6<sup>th</sup> IEEE International Conference on Big Data Computing Service and Applications, pp. 96-103, Oxford, UK, February 2020.
7. C. Sardinios, I. Varlamis, C. Chronis, G. Dimitrakopoulos, A. Alsalemi, Y. Himeur, F. Bensaali and A. Amira, "A model for predicting room occupancy based on motion sensor data", IEEE International Conference on Informatics, IoT, and Enabling Technologies, Qatar, Feb 2020.
8. A. Mahmoud, U. Khurshid, A. Abducarim, S. Mahmud, O. Abdallah, E. Mohamed, A. Alsalemi, F. Bensaali, A. Amira, A. Ait Hssain, G. Alinier, I. Hassan, "Preliminary Implementation of the Next Generation Cannulation Simulator", 17<sup>th</sup> IEEE Student Conference on Research and Development, pp. 243-247, Malaysia, October 2019.
9. A. Alsalemi, M. Ramadan, F. Bensaali, A. Amira, C. Sardinios, I. Varlamis, and G. Dimitrakopoulos, "Boosting Domestic Energy Efficiency Through Accurate Consumption Data Collection", IEEE Smart World Congress, Leicester, UK, August 2019.
10. I. Boukhenoufa, A. Amira, F. Bensaali, D. Anagnostopoulos, M. Nikolaidou, C. Kotronis, E. Politis, G. Dimitrakopoulos, "An IoT-based Framework for Elderly Remote Monitoring", Euromicro Digital System Design, Athens, Greece, August 2019.
11. A. Al-Kababji, L. Shidqi, I. Boukhenoufa, A. Amira, F. Bensaali, M. Sadok Gastli, A. Jarouf, W. Aboueata, A., Abdalla, "IoT-Based Fall and ECG Monitoring System: Wireless Communication System Based on Firebase Real-time Database", IEEE Smart World Congress, Leicester, UK, August 2019.
12. S. S. Esfahani, X. Zhai, M. Chen, A. Amira and F. Bensaali, J. Abinahed, S. Dakua, G. Younes, R. Richardson, P. V. Coveney, "HemelB Acceleration and Visualization for Cerebral Aneurysm," IEEE International Conference on Image Processing, Taiwan, September 2019.
13. A. Alsalemi, M. Ramadan, F. Bensaali, A. Amira, C. Sardinios, I. Varlamis, and G. Dimitrakopoulos, "Simulating Appliance-Based Power Consumption Records for Energy Efficiency Awareness", The 11<sup>th</sup> International Conference on Applied Energy, Sweden, August 2019.
14. C. Sardinios, I. Varlamis G. Dimitrakopoulos, A. Alsalemi, F. Bensaali, A. Amira, "'I want to .... change' Micro-moment based Recommendations Can Change Users' Energy Habits", 8<sup>th</sup> International Conference on Smart Cities and Green ICT Systems (SMARTGREENS 2019), pp.30-39, Crete, Greece, May 2019.
15. A. Alsalemi, C. Sardinios, F. Bensaali, I. Varlamis A. Amira, G. Dimitrakopoulos, "Towards Domestic Energy Efficiency: Using Micro-Moments for Personalized Behavior Change Recommendations", 8<sup>th</sup> Global Conference on Global Warming, Doha, Qatar, April 2019.
16. A. Mahmoud, A. Abducarim, U. Khurshid, S. Mahmoud, O. Abdallah, E. Mohamed, F. Bensaali, A. Alsalemi, A. Amira, A. Ait Hssain, G. Alinier, I. Hassan, "Human Circulatory System for Extracorporeal Membrane Oxygenation Simulation", 10<sup>th</sup> IEEE GCC Conference and Exhibition, Kuwait, April 2019.
17. X. Zhai, M. Chen, S. Soheilian, A. Amira, F. Bensaali, J. Abinahed, S. Dakua, A. AlAnsari, A. Zakaria, "Zynq SoC based LatticeBoltzmann Simulation Environment", 10<sup>th</sup> IEEE GCC Conference and Exhibition, Kuwait, April 2019.
18. M. Al Disi, H. Djelouat, A. Amira, F. Bensaali, "The Accuracy and Efficacy of Real-time Compressed ECG Signal Reconstruction on a Heterogeneous Multicore Edge-Device", 21<sup>st</sup> EUROMICRO Conference on Digital System Design, Prague, Czech Republic, pp. 458-463, August 2018.
19. C. Kotronis, M. Nikolaidou, G. Dimitrakopoulos, D. Anagnostopoulos, A. Amira and F. Bensaali, "A Model-based Approach for Managing Criticality Requirements in e-Health IoT



- Systems”, The IEEE 13<sup>th</sup> System of Systems Engineering Conference, pp. 60-67, Paris, France, June 2018.
20. H. Djelouat, M. Al Disi, A. Amira and F. Bensaali, “Compressive Sensing Based Remote Monitoring Systems for IoT applications”, Qatar Foundation Annual Research Conference Proceedings 2018, 3, ICTPP1046, Qatar, March 2018.
  21. M. Eslami, X. Zhai, A. El-Sayed, A. Al-Shibani, A. Al-Nassr, A. Amira F. Bensaali, S. Dakua, J. Abi Nahed and P. Coveney, “Evaluation of Hardware Accelerators for Lattice Boltzmann based Aneurysm Blood Flow Measurement”, Qatar Foundation Annual Research Conference Proceedings 2018, 3, ICTPD1049, Qatar, March 2018.
  22. H. Djelouat, H. Baali, A. Amira, F. Bensaali; “CS-Based Fall Detection Platform for Connected Health Applications”, 4<sup>th</sup> International Conference on Advances in Biomedical Engineering, Lebanon, October 2017.
  23. H. Baali, X. Zhai, H. Djelouat, A. Amira and F. Bensaali, “Design and Acceleration of Scaryfying Matrices for Compressed Sensing of EEG Signal”, 2<sup>nd</sup> International Computational Science and Engineering Conference, Doha, Qatar, October 2017.
  24. A. Alsalemi, M. Al Disi, I. Ahmed, Y. Alhomsy, F. Bensaali, A. Amira and G. Alinier, “Developing Cost-Effective Simulators for Patient Management: A Modular Approach”, 4<sup>th</sup> International Conference on Advances in Biomedical Engineering, Lebanon, October 2017.
  25. A. El-Sayed, A. Al-Shibani, A. Al-Nassr, N. Al-Maadeed, S. Balakrishnan, G. Anderson, R. Richardson, D. Groen, P. Coveney, A. Zakaria, P. Bermejo, A. Al-Ansari, J. Abinahed, S. Dakua, F. Bensaali and A. Amira, “Data Processing on Zynq System on Chip for Blood Flow Simulation”, 2<sup>nd</sup> International Computational Science and Engineering Conference, Doha, Qatar, Oct 2017.
  26. E. Hussein, M. Filali, S. Shalaby, S. Balakrishnan, G. Anderson, R. Richardson, D. Groen, P. Coveney, A. Zakaria, P. Bermejo, A. Al-Ansari, J. Abinahed, S. Dakua, F. Bensaali and A. Amira, “Aneurysm Treatment Planning on Reconfigurable System on Chip”, 2<sup>nd</sup> International Computational Science and Engineering Conference, Doha, Qatar, October 2017.
  27. H. Djelouat, H. Baali, A. Amira, F. Bensaali; “Joint Sparsity Recovery for Compressive Sensing Based EEG”, 17<sup>th</sup> IEEE International Conference on Ubiquitous Wireless Broadband, Spain, September 2017.
  28. H. Baali, X. Zhai, H. Djelouat, A. Amira and F. Bensaali, “Efficient Hardware Implementation of the  $\ell_1$ -Regularized Least Squares for IoT Edge Computing”, 17<sup>th</sup> IEEE International Conference on Ubiquitous Wireless Broadband, Spain, September 2017.
  29. C. Kotronis, G. Minou, G. Dimitrakopoulos, M. Nikolaidou, D. Anagnostopoulos, A. Amira, F. Bensaali, H. Djelouat and H. Baali, “Managing Criticalities of e-Health IoT Systems”, 17<sup>th</sup> IEEE International Conference on Ubiquitous Wireless Broadband, Spain, September 2017.
  30. Y. Alhomsy, A. Alsalemi, M. Al Disi, F. Bensaali, A. Amira and G. Alinier, “CouchDB Based Real-Time Wireless Communication System for Clinical Simulation”, 4<sup>th</sup> International Symposium on Real-time Data Processing for Cloud Computing In conjunction with the 20<sup>th</sup> IEEE International Conference on High Performance Computing and Communications, pp. 1094-1098, UK, June 2017.
  31. H. Djelouat, H. Baali, A. Amira, F. Bensaali, “IoT Based Compressive Sensing for ECG Monitoring”, 2<sup>nd</sup> International Symposium on Real-time Data Processing for Cloud Computing. In conjunction with the 10<sup>th</sup> IEEE International Conference on Cyber, Physical, and Social Computing, pp. 183-189, Exeter, UK, June 2017.
  32. H. Baali, H. Djelouat, A. Amira, F. Bensaali, “QRS Complexes Classification using Dictionary Learning and Pietra Index,” 2<sup>nd</sup> International Symposium on Real-time Data Processing for Cloud Computing. In conjunction with the 10<sup>th</sup> IEEE International Conference on Cyber, Physical, and Social Computing, pp. 203-207, Exeter, UK, June 2017.
  33. A. Alsalemi, Y. Alhomsy, M. Al Disi, I. Ahmed, F. Bensaali, A. Amira and G. Alinier, “Real-Time Communication Network using Firebase Cloud IoT Platform for ECMO Simulation”, 2<sup>nd</sup> International Symposium on Real-time Data Processing for Cloud Computing. In conjunction with the 10<sup>th</sup> IEEE International Conference on Cyber, Physical, and Social Computing, pp. 178-182. Exeter, UK, June 2017.
  34. A. Farhat, A. Al-Zawqari, A. Al-Qahtani, O. Hommos, F. Bensaali, A. Amira and X. Zhai, “OCR-based Hardware Implementation for Qatari Number Plate on the Zynq SoC,” 9<sup>th</sup> IEEE GCC Conference and Exhibition, Bahrain, May 2017.
  35. H. Ali, F. Bensaali, A. Amira and F. Jaber, “Sea Water Salinity Detection Using Circular Fringes Formation Based on Diffraction of Laser Light,” 9<sup>th</sup> IEEE GCC Conference and Exhibition, Bahrain, May 2017.
  36. A. Al-Zawqari, O. Hommos, A. Al-Qahtani, A. Farhat, F. Bensaali, A. Amira and X. Zhai, “HD Number Plate Localization on the Zynq Heterogeneous SoC,” The IEEE International Conference on Imaging Systems and Techniques, Greece, October 2016.
  37. A. Khattab, M. Benammar and F. Bensaali, “A Novel Method for Online Correction of Amplitude and Phase Imbalances in Sinusoidal Encoders Signals,” 17<sup>th</sup> IEEE International Conference on Power Electronics and Motion Control, pp. 784-789, Bulgaria, Sep 2016.

38. A. Ait Si Ali, A. Amira, F. Bensaali, M. Benammar and A. Bermak, "HW/SW Co-Design Based Implementation of Gas Discrimination," The 27th Annual IEEE Int Conference on Application-specific Systems, Architectures and Processors, pp. 237-238, London, UK, July 2016.
39. A. Khattab, S. Saleh, M. Benammar and F. Bensaali, "A Precise Converter for Resolvers and Sinusoidal Encoders Based on a Novel Ratiometric Technique," IEEE Sensors Applications Symposium, pp. 1-6, Italy, April 2016.
40. A. Ait Si Ali, X. Zhai, A. Amira, F. Bensaali, N. Ramzan, "Heterogeneous Implementation of ECG Encryption and Identification on the Zynq SoC," The 24th IEEE International Symposium on Field-Programmable Custom Computing Machines (FCCM), pp. 139-139, Washington DC, USA, May 2016.
41. A. Ait Si Ali, A. Amira, F. Bensaali, M. Benammar, M. Hassan and A. Bermak, "High Level Synthesis Based E-Nose System for Gas Applications," The 24th IEEE International Symposium on Field-Programmable Custom Computing Machines (FCCM), pp. 202-203, Washington DC, USA, May 2016.
42. A. Ait Si Ali, A. Amira, F. Bensaali and N. Ramzan, "Custom IP Cores for Robust Data Analysis and Pattern Recognition," 12th UWS Annual Research Conference, Scotland, UK, April 2016.
43. O. Hommos, A. Al-Qahtani, A. Farhat, A. Al-Zawqari, F. Bensaali, A. Amira and X. Zhai, "HD Qatari ANPR system," The IEEE conference on industrial informatics and Computer Systems, UAE, March 2016.
44. A. Farhat, A. Al-Zawqari, A. Al-Qahtani, O. Hommos, F. Bensaali, A. Amira and X. Zhai, "OCR Based Feature Extraction and Template Matching Algorithms for Qatari Number Plate," IEEE conference on industrial informatics and Computer Systems, UAE, March 2016.
45. A. Ait Si Ali, M. A. Akbar, A. Amira, F. Bensaali, M. Benammar, M. Hassan and A. Bermak, "Fast Prototyping of KNN Based Gas Discrimination System on the Zynq SoC," Qatar Foundation Annual Research Conference (QF-ARC), Doha, Qatar, vol. 2016, ICTOP1832, March 2016.
46. S. Alshorman, F. Jaber and F. Bensaali, "A Remote Oxygen Saturation and Heart Rate Monitoring System," The International Conference in Emergency Medicine and Public Health, Qatar, January 2016.
47. S. Alshorman, F. Jaber and F. Bensaali, "A Wireless Oxygen Saturation and Heart Rate Monitoring and Alarming System Based on the Qatar Early Warning Scoring System," The International Conference on Computational Science and Computational Intelligence, pp. 787-790, USA, December 2015.
48. F. Bensaali, A. Amira, X. Zhai and T. Huang, "A Stand-Alone Application for Automatic Bulk Returning of Students' Reports," The 4th International Conference on E-Learning and E-Technologies in Education, pp. 9-15, Indonesia, September 2015.
49. X. Zhai, A. Amira and F. Bensaali, "ECG Security Identification System on the Zynq SoC Platform", the 14th IEEE International Conference on Ubiquitous Computing and Communications, pp. 1164-1169, UK, October 2015.
50. M. A. Akbar, A. Ait Si Ali, A. Amira, F. Bensaali, M. Benammar, S. Mohamad and A. Bermak, "Receiver Design of Passive UHF RFID Sensor Platform for Gas Applications," The 6th International Conference on Sensor Device Technologies and Applications, pp. 164-169, Italy, 23-28 August 2015.
51. X. Zhai, F. Jaber, F. Bensaali and A. Mishra, "Hardware Acceleration of an Image Processing System for Dielectrophoretic Loading of Single Neurons Inside Micro-Wells of Microelectrode Arrays," IEEE UKSim-AMSS 17th International Conference on Modelling and Simulation, pp. 571-576, Cambridge University, UK, March 2015.
52. M. A. Akbar, A. Ait Si Ali, A. Amira, M. Benammar, F. Bensaali, S. Mohamad, F. Tang, A. Bermak, M. Zgaren and M. Sawan, "A Multi-Sensing Reconfigurable Platform for Gas Applications," 26th International Conference on Microelectronics, Qatar, pp. 148-151, December 2014.
53. A. Ait Si Ali, M. Siupik, A. Amira, F. Bensaali and P. Casaseca, "HLS Based Hardware Acceleration on the Zynq SoC: a Case Study for Fall Detection System," The 11th ACS/IEEE International Conference on Computer Systems and Applications, Qatar, pp. 685-690, November 2014.
54. A. Ait Si Ali, A. Amira, F. Bensaali, M. Benammar, M. Hassan, A. Bermak, "Software-Hardware Co-Design Approach for gas Identification," Qatar Foundation Annual Research Conference, vol. 2014, ITPP1115, Qatar, November 2014.
55. A. Ait Si Ali, A. Amira and F. Bensaali, "Custom IP Cores for Robust Data Analysis and Pattern Recognition Algorithms Used in Gas Applications", ACS International Conference on Computer Systems and Applications (AICCSA)- PhD Symposium, pp 68-69, Qatar, November 2014.
56. M. A. Akbar, A. Ait Si Ali, A. Amira, M. Benammar, F. Bensaali, S. Mohamad, F. Tang, A. Bermak, M. Zgaren, M. Sawan, "A Low Power Reconfigurable Multi-Sensing Platform for Gas Application," Qatar Foundation Annual Research Conference, Qatar, November 2014.

57. A. Ait Si Ali, A. Amira, F. Bensaali and M. Benammar, "PCA IP-Core for Gas Applications on the Heterogenous Zynq Platform", 25<sup>th</sup> International Conference on Microelectronics, pp. 1-4, Beirut, Lebanon, December 2013.
58. X. Zhai, F. Bensaali and K. McDonald-Maier, "Automatic Number Plate Recognition on FPGA", IEEE International Conference on Electronics, Circuits, and Systems, pp. 325-328, Abu Dhabi, UAE, December 2013.
59. A. Ait Si Ali, A. Amira and F. Bensaali and M. Benammar, "Hardware PCA for Gas Identification Systems Using High Level Synthesis on the Zynq SoC", IEEE International Conference on Electronics, Circuits, and Systems, pp. 707-710, Abu Dhabi, UAE, Dec 2013.
60. A. Ait Si Ali, A. Amira and F. Bensaali, "Custom IP Cores for Robust Data Analysis and Pattern Recognition Algorithms Used in Gas Applications", IEEE International Conference on Electronics, Circuits, and Systems (PhD Forum), pp. 68-69, Abu Dhabi, UAE, December 2013.
61. A. Ait Si Ali, A. Amira, F. Bensaali and M. Benammar, "Hardware Implementation of Principal Component Analysis for Gas Identification Systems on the Zynq SoC Platform", Qatar Foundation Annual Research Conference, vol. 2013, ICTP017, Doha, Qatar, November 2013. Research Excellence Award Winner.
62. X. Zhai and F. Bensaali, "Standard Definition ANPR System on FPGA and an Approach to Extend it to HD", The 7<sup>th</sup> IEEE GCC Conference and Exhibition, pp. 214-219, Doha, Qatar, November 2013.
63. Z. Jeffrey, X. Zhai, F. Bensaali, R. Sotudeh and A. Ariyaeinia, "Automatic Number Plate Recognition System on an ARM-DSP and FPGA Heterogeneous SoC Platforms", Hot Chips: A Symposium on High Performance Chips, California, USA, August 2013.
64. X. Zhai, F. Bensaali and R. Sotudeh, "OCR-Based Neural Network for ANPR", in the proceedings of the 2012 IEEE international Conference on Imaging Systems and Techniques, pp. 393-397, Manchester, UK, July 2012.
65. X. Zhai, F. Bensaali and S. Ramalingam, "Real-Time License Plate Localisation on FPGA", The 7<sup>th</sup> IEEE Workshop on Embedded Computer Vision, pp. 14-19, Colorado Springs, CO, USA, June 2011.
66. X. Zhai, F. Bensaali and S. Ramalingam, "License Plate Localisation based on Morphological Operations", The 11<sup>th</sup> International Conference on Control, Automation, Robotics and Vision, pp 1128-1132, Singapore, December 2010.
67. Z. Musoromy, F. Bensaali, S. Ramalingam and G. Pissanidis, "Comparison of real-time DSP-Based Edge Detection Techniques for License Plate Detection", Sixth international Conference on Information Assurance and Security (IAS), pp 323-328, Atlanta, USA, August 2010.
68. M. Milosavljevic, F. Bensaali, and P. Kourtessis, "xDSL Network Upgrade Employing FPGAs", The IEEE International Symposium on Electronic, Test and Applications (DELTA 2008), pp 158-162, Hong Kong, January 2008.
69. X. Wen, F. Bensaali, and R. Sotudeh, "Dynamic Co-operative Intelligent Memory", The IEEE International Symposium on Electronic, Test and Applications (DELTA 2008), pp 184-189, Hong Kong, January 2008.
70. A. Amira, F. Bensaali and S. Chandrasekaran, "A General Framework for Efficient FPGA Implementation and Power Modelling of Image Processing Cores", The 4<sup>th</sup> Visual Information Engineering Conference, London, UK, July 2007.
71. F. Bensaali, A. Amira and R. Sotudeh, "Floating-Point Matrix Product on FPGA", The ACS/IEEE International Conference on Computer Systems and Applications (AICCSA 2007), pp 466-473, Amman, Jordan, May 2007.
72. F. Bensaali, A. Amira and S. Chandrasekaran, "Power Modeling and Efficient FPGA Implementation of Color Space Conversion", The 13<sup>th</sup> IEEE International Conference on Electronics, Circuits and Systems (ICECS 2006), pp 164-167, Nice, France, December 2006.
73. A. Amira, F. Bensaali, I. S. Uzun and A. Ahmedsaid, "Matrix Algorithm Cores Generator on Reconfigurable Hardware for Image Processing", The Military and Aerospace Applications of Programmable Logic Devices and Technologies International Conference, USA, September 2006.
74. S. Chandrasekaran, A. Amira and F. Bensaali, "FPGA Implementation of Reduced Bit Plane Motion Estimation", The Military and Aerospace Applications of Programmable Logic Devices and Technologies International Conference (MAPLD 2005), Washington, D.C. USA, September 2005.
75. F. Bensaali and A. Amira, "An FPGA Based Color Space Converter Using Distributed Arithmetic" Proceedings of the Irish Signals and Systems Conference, Queen's University Belfast, 30 June-2 July 2004.
76. F. Bensaali, A. Amira and A. Bouridane, "An Efficient Architecture for Color Space Conversion Using Distributed Arithmetic", IEEE International Symposium on Circuits and Systems (ISCAS 2004), vol. 2, pp. 265-268, Vancouver, Canada, May 2004.

77. F. Bensaali and A. Amira, "Design and Hardware Implementation of an Efficient Architecture for Color Space Conversion" Proceedings of the EPSRC PREP04 Conference, pp 64-65, 5-7, UK April 2004.
78. F. Bensaali, A. Amira, I. S. Uzun and A. Ahmedsaid, "An FPGA Implementation of 3D Affine Transformation", The 10th IEEE International Conference on Electronics, Circuits and Systems (ICECS 2003), vol. 2, p. 715-718, Sharjah, United Arab Emirates, December 2003.
79. I.S. Uzun, A. Amira and F. Bensaali, "A Reconfigurable Coprocessor for High-Resolution Image Filtering in Real Time" Proceedings of The 10th IEEE International Conference on Electronics, Circuits and Systems (ICECS 2003), pp 192-195, Sharjah, United Arab Emirates, December 2003.
80. F. Bensaali, A. Amira and A. Bouridane, "An FPGA Based Coprocessor for Large Matrix Product Implementation", IEEE International Conference on Field-Programmable Technology, pp 292-295, Tokyo, December 2003.
81. F. Bensaali, A. Amira and A. Bouridane, "An FPGA Based Coprocessor for 3D Affine Transformations" Proceedings of the IEEE International Conference on Field-Programmable Technology, pp 288-291, Japan, December 2003.
82. I. S. Uzun, A. Amira, F. Bensaali and A. Ahmedsaid, "An FPGA Based Parametrisable System for Processing Large 2-D FFTs", The Irish Machine Vision & Image Processing Conference, Coleraine, Northern Ireland, September 2003.
83. F. Bensaali, A. Amira, A. Ahmedsaid and I. S. Uzun, "Efficient Implementation of Large Parallel Matrix Product for DOTs", The International Conference on Computer, Communication and Control Technologies (CCCT 2003), Orlando, Florida, USA, July 2003.
84. I. S. Uzun, A. Amira and F. Bensaali, "An FPGA Based Parametrisable System for Parallel 2-D FFT Implementation", The International Conference on Computer, Communication and Control Technologies (CCCT 2003), Orlando, Florida, USA, July 2003.
85. A. Amira, I. S. Uzun and F. Bensaali, "An FPGA Implementation of Discrete Hartley Transforms for Signal Processing", The International Conference on Computer, Communication and Control Technologies (CCCT 2003), Orlando, Florida, USA, July 2003.
86. I. S. Uzun, A. Amira, A. Ahmedsaid and F. Bensaali, "Towards A General Framework for an FPGA-based FFT Coprocessor", The Seventh IEEE International Symposium on Signal Processing and its Application (ISSPA 2003), Paris, France, July 2003.
87. A. Amira and F. Bensaali, "An FPGA based Parametrisable System for Matrix Product Implementation", The IEEE Workshop on Signal Processing Systems, VLSI Signal Processing Architectures, San Diego, California, USA, Oct 2002.
88. A. Amira and F. Bensaali, "An FPGA based Coprocessor for Matrix Algorithms Implementation", SPIE's Opto-Ireland 2002, Galway, Ireland, September 2002.

#### **News-Letters**

1. M. Al Disi, H. Djelouat, A. Amira, F. Bensaali, G. Dimitrakopoulos, A. Dimosthenis, M. Nikolaidou, G. Alinier and A. Bermak, "Embedded Multicore Systems for Mixed-Critical Internet of Things based Applications", e-Health Technical Committee NewsLetter, IEEE Communications Society, pp. 1-5, 2018.

#### **Technical Reports**

1. F. Bensaali, J. Siau and G. Pissanidis, "Automatic Number Plate Recognition Using DaVinci Chipset", Consultancy report for CitySync Ltd., February 2010.

#### **Patents**

1. A. Alsalemi, M. Al Disi, Y. Alhomsy, F. Bensaali, A. Amira and G. Alinier "Using thermochromic ink for blood simulation in medical training," U.S. Patent US 11,308,823 B2, Apr. 19, 2022.

## Supervision

### PhD/MPhil

#### Main Supervisor

1. Wen Xiayong (MPhil) (2007-2009)  
University of Hertfordshire  
*Project title:* "Advanced Co-operative Intelligent Memory"  
*Source of funding:* Self-funded
2. Xiaojun Zhai (PhD) (2009-2013)  
University of Hertfordshire  
*Project title:* "Automatic Number Plate Recognition on FPGA"  
*Source of funding:* Self-funded

#### Co-supervisor

1. Abdullah Alsalemi (PhD) (2021-present)  
De Montfort University  
*Project title:* "High Definition Automatic Number Plate Recognition"  
*Source of funding:* De Montfort University
2. Amine Ait Si Ali (PhD) (2013-2017)  
University of West Scotland  
*Project title:* "Custom IP Cores for Robust Data Analysis and Pattern Recognition Algorithms Used in Gas Applications."  
*Source of funding:* Self-funded
3. Robert Gurney (EngD) (2011-2013)  
University of Hertfordshire  
*Project title:* "Towards Effective ANPR Performance in Real-World Applications Through Data Acquisition Enhancement"  
*Source of funding:* Hertfordshire Constabulary and Home Office.
4. Mike Rhead (EngD) (2011-2013)  
University of Hertfordshire  
*Project title:* "Towards Effective ANPR performance in Real-World Applications: Investigations into the Effects of Physical-Based Distortions"  
*Source of funding:* Hertfordshire Constabulary and Home Office.
5. Ashok Sharma (PhD-PT) (2008-2013)  
University of Hertfordshire  
*Project title:* "Design and Implementation of DDS based Reconfigurable Arbitrary Function Generators"  
*Source of funding:* Self-funded
6. Zuwena Musoromy (PhD) (2008-2013)  
University of Hertfordshire  
*Project title:* "High Definition Automatic Number Plate Recognition"  
*Source of funding:* iCASE award  
*Project partner:* CitySync Ltd.

### KTP Associates

#### Main Supervisor

1. Ashok Sharma (2008-2010)  
*Partner:* Thurlby Thunder Instrument Ltd.

#### Co-supervisor

1. Shiv Mahadevappa (2008-2010)  
*Partner:* Thurlby Thunder Instrument Ltd.
-

## Teaching

### Courses Taught

Code	Title	Level	Class size	Semester
ELEC261	Digital Systems Design	UG	20-40	Fall 2013-2022
ELEC262	Digital Systems Design Lab	UG	20	Fall 2013
ELEC366	Embedded Systems	UG	20-45	Spring 2013-2022
ELEC367	Embedded Systems Lab	UG	20	Spring 2013, 2014
4ELE0050	Digital Electronics and Computer Organisation	UG	45-50	A(11/12, 12/13)
7ENT1003	Advanced Reconfigurable Systems and Applications	PG	45-50	A(11/12, 12/13)
6ELE0068	Microelectronics & VLSI	UG	65-80	A (2008-2013)
6ELE0084	Computer Architecture	UG	5-10	B (2007-2011)
5ELE0060	Real-Time Systems & Programming	UG	45-50	B (2007-2013)
5ELE0060	Digital Design & Embedded Systems	UG	45-50	A 2007-2013)
5ELE0065	Mini-Project (Digital Systems)	UG	5-10	B (2008-2011)
5ELE0072	Mini-Project (CTN)	UG	18-20	B (2008-2012)
3AAD0003	Engineering Initial Year Project	UG	55-60	B (2009-2012)

### Undergraduate Final-Year/ MSc Project Supervision

	N° of supervised MSc/UG groups of students
<b>BEng/BSc</b>	42
<b>MSc</b>	18

## University Service

<b>2018-present</b>	Graduate Program Coordinator (Qatar University)
<b>2018-present</b>	Chair of Graduate Study and Research committee (Qatar University)
<b>2018-present</b>	Member of CEng Graduate Committee (Qatar University)
<b>2017-2018</b>	Member of the Electrical Engineering Department Student Experience and Industry Engagement Committee (Qatar University)
<b>2015-2018</b>	Senior Design Project Coordinator (Qatar University)
<b>2015-2018</b>	Chair of the Student Projects Committee (Qatar University)
<b>2016-2017</b>	Chair of the Electrical Engineering Department Strategic Planning Committee (Qatar University)
<b>2017-2018</b>	Member of the Electrical Engineering Department Student Support Workgroup (Qatar University)
<b>2014-2018</b>	Member of the Electrical Engineering Department Recruitment Committee (Qatar University)
<b>2013-2018</b>	Member of the College Strategic Planning Committee (Qatar University)
<b>2013-2018</b>	Member of the Electrical Engineering Department Curriculum Committee (Qatar University)
<b>2011-2013</b>	MSc Project Tutor (University of Hertfordshire)
<b>2009-2013</b>	MSc Deputy Programme Tutor (University of Hertfordshire)
<b>2009-present</b>	MSc/PhD/MPhil examinations
<b>2008-2013</b>	Visiting tutor for students in industrial placement (University of Hertfordshire)
<b>2010-2013</b>	Visiting Lecturer – Changzhou Institute of Technology, China (University of Hertfordshire)
<b>2009-2013</b>	Member of the Programme Management Group (University of Hertfordshire)