DR. BASSAM AL-NAAMI

Associate Professor of Biomedical & Electrical Engineering and Human factors

- *Signal & Image Processing*
- *Medical Electronics and Instrumentation*
- *Virtual Reality Systems and Haptic Devices*

DETAILS:

Engineering Faculty, Hashemite University
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- Researcher ID: O-6492-2017
- orcid.org/0000-0002-1249-009X

QUALIFICATION :

2001-2003 **Visiting Research Fellowship**

Signal & Image processing (Wavelet Domain) at School of Engineering and Information Technology, University of Sussex, Brighton-**United Kingdom**

Team Work: Dr. John Torry, Dr. Mark English, and Prof. Richard Vincent (MD)

1997-2000 **PhD in Medical Electronics and Ergonomics**

Title: Interaction Efficiency Research of Operational Virtual Reality Systems with an Operator.
Biomedical Engineering department and Television and Video Engineering department at the faculty of Radio Engineering and Telecommunications, Saint-Petersburg State Electrotechnical University (LETI), RF.
Supervisor: Professor N.V. Lysenko, Television and Video Engineering department.
Co-Advisor: Professor Popechitelev E.P, Biomedical engineering department.

1992-1997 **Diploma (Five years honour degree) in Biomedical Engineering/ Medical Electronics and Instrumentation**

The Faculty of Electronics and Power Engineering of the Stavropol State Technical University, RF

PROFESSIONAL EXPERIENCE AND CAREER GRAPH:

2016-Present Associate Professor – Biomedical Engineering Department, Hashemite University (**HU**) – Jordan (**ABET accredited**).

2020-2021 Member of IRB committee at Hospital Prince Hamza Ibn Al-Hussain, Jordan

2019-2021 **Associate Professor** *(Sabbatical leave)* - Biomedical Engineering Department, Al-Ahliyya Amman University (**AAU**)-Jordan (**ABET accredited**).

2019-2021 Member of Pharmacological and Diagnostic Research Center**,** Al-Ahliyya Amman University **(AAU)**, Jordan.

Sep 2018 **Accreditation and quality assurance commission for higher education institutions:** member of committee to evaluate the Biomedical Engineering/

Master Program in Jordan University of Science & Technology.

Jun 2018 **Accreditation and quality assurance commission for higher education institutions:** member of committee to evaluate the Biomedical Engineering Program (BSc) in German-Jordan University.

2009-2016 **Assistant Professor** – Biomedical Engineering Department, Hashemite University.

2014-2015 **Vice Dean of student affairs** for Hashemite University (students number 27000)

2010-2012 **Dean Assistant of engineering faculty**, Hashemite University

2003-2009 **PhD full time Lecturer** – Electrical/Bio-medical Engineering Department, HU

2001-2003 **Visiting Researcher**, School of Engineering and Information Technology, University of Sussex, Britain
Responsibilities are research project on Bio-signal processing (Wavelets) and data acquisition, supervision and guidance graduate students.

AWARDS & ACCOLADES

2019 Honored for outstanding contribution in reviewing awarded by Elsevier publisher

2016 Recipient of certificate of appreciation for valuable contribution as a speaker within the 1st International Conference of Al Bashir Hospital under patronage of Dr. Abdullah Al-Nsour, the former prime minister of Jordan.

2013/2014 Honored from the Hashemite University (HU) for Excellence in Scientific Research for 2013-2014 years under the patronage of Faisal Al-Fayez, the former prime minister of Jordan.

2012 Bagged Certificate of appreciation and thanks letter for outstanding participation as an organizing member within the Fifth National technology Parade from Kamal E. Bani-Hani, the president of Hashemite University

2012 Recipient of Certificate of appreciation for outstanding participation as a scientific reviewer within the Fifth National technology Parade from Kamal E. Bani-Hani, the president of Hashemite University

2012 Appreciated for outstanding contribution to the success of the IEEE International Conference on Computer, Information and Telecommunication Systems (CITS-2012) from Prof. Mohammad S. Obaidat, the General Chair and Steering Committee Chair, CITS 2012.

2009 Appreciation and thanks letter for participation in the ABET training seminar performed by Prof. Larry E. David (the Former EAC Team Evaluator Industrial Engineering) in the HU during the period of October 8-14, 2009. Certificate was given by Dean of Engineering Faculty and Prof. Larry David.

2008 Winner of Certificate of appreciation and thanks letter for outstanding participation within the Scientific Day of Engineering Faculty at HU (As an advisor of the best student final year project) from Dr. HasanTantawi, the Dean of Engineering Faculty

2004 Winner of Certificate of appreciation and thanks letter for outstanding participation within the Scientific Week of Engineering Faculty at HU from Prof. Ayman Al-Momani, the Dean of Engineering Faculty

1997 Secured PhD Scholarship from the Ministry of High Education, Jordan

1999 Bagged “Best project” award at the exhibition of scientific and technical achievements within the framework of the university festival "SETU-LETI Days" (St.Petersburg, 1999).

PROFESSIONAL AFFILIATIONS:

- Member, Jordanian Engineering Association, JEA
- Member, Institute of Electrical and Electronics Engineers, IEEE (USA):
  - IEEE Engineering in Medicine and Biology Society, 1998-Present
  - IEEE Signal Processing Society, 2002
  - IEEE Pervasive Computing, 2002
  - IET Society, 2002 ,UK

TEACHING EXPERIENCE

Diverse teaching experience gained in Biomedical, Electrical and Industrial engineering courses. Since 2003, I started with my colleagues developing the BME department curriculum (141-160) credited hours. The department of BME was promoted by ABET accreditation in 2018. Served as coordinator for several taught courses. I was permanently an academic adviser where all department students consulting me in vary life learning issues.

Undergraduate taught courses:

- Laboratory Instrumentation and Medical Laser (Year 4, **AAU**)
- Biomedical Instrumentation II (year 4, **HU**)
- Digital Image Processing (year 4, **HU**)
- Medical Technology Management (year 4, **AAU**)
- Medical Imaging Modalities (Instrumentation and Physics, year 4, **HU**)
- Biomedical Instrumentation I (year 3, **HU**)
- Principles of Measurement Systems (Transducers & Interfacing, Year 3, **HU**)
- Engineering Applied Mathematics (year 2, **HU**)
- Engineering Statistics (year 2, **AAU**)
- Electrical Circuits I (year 2, **HU**)
- Introduction to Electrical Circuits (year2, **HU**)
- Engineering Ethics and communication skills (2-4 years, **HU**)
- Engineering Statistics (year 2, **HU**)
- Electrical Circuits - 1 (Lab, **HU**)
- Introduction to Electrical Circuits (Lab, **HU**)
- Medical Imaging (Lab, **HU**)
- Biomedical Instrumentation 1 (Lab, **HU**)
- Biomedical Instrumentation 2 (Lab, **HU**)
- Biomedical Transducers (Lab, **HU**)
- Biomedical Simulation (Lab, **AAU**)
- Technical writing (2-4 years, **HU**).
- Adviser for more than 60 final year projects, some of them shared with Electrical, Mechanical Engineering, and Physical therapy department.

Ability to teach other courses:

- Digital Image processing (Electrical & Computer Engineering dept.)
- Advanced signal Processing (Electrical & Computer Engineering dept.)
- Electronics (Electrical & Computer Engineering dept.)

- Matlab
- Ergonomics/Human Factors (Industrial Engineering)
- Modeling and simulation (Biomedical Engineering)
- Medical Imaging Modalities (instrumentation and physics)
- Artificial Intelligence
- Applications of Embedded systems (FPGA and Arduino)

Postgraduate courses:

2013/2014 Industrial Radiography (Master course in Nondestructive Testing -NDT), HU.

Supervision Of Graduate Students

2009 **Member** on Examining Committee of Master degree: Implementation of Six-Sigma on Corrective Maintenance at The Directorate of Biomedical Engineering in the Jordanian Health Ministry. Industrial Engineering Department, **HU**.

2002/2003 **Co-adviser** of Master degree: Heart Sound Representation. Division of Biomedical Engineering at Sussex University, UK.

Supervision Of Undergraduate Student Projects

2003- Present Supervision and guidance of about 60 final year projects distributed in different scientific spectrum of biomedical engineering areas include but not limited to:

- Medical Electronics and Instrumentation
- Bio-Signal & Image Processing
- Medical Systems toward assisting in rehabilitation and physiotherapeutic issues
- Medical Systems toward assisting in Bio-mechanical issues
- Ergonomics/Human factors toward studying the effect of using virtual reality-augmented systems and haptic devices to increase the efficiency of operators in different training missions (Medicine, Manufacturing …).

Some of these projects were accomplished with cooperation of electrical, Industrial, and mechanical engineering departments. Colleagues from Physiotherapeutic, medical imaging departments of Applied Health Faculty and medical faculty were also involved. We also have powerful partnerships with our medical colleagues from both private and public Jordanian hospitals. Some successful projects get published in prestigious journals such Medical Devices-Transaction of ASME, IEEE, Medical Systems-Springer and Jordan Journal of Mechanical& Industrial Engineering.

PROFESSIONAL DEVELOPMENT AND WORKSHOPS

2017/2018 &2009 American Board of Engineering and Technology (ABET) accreditation.
Organizer: Hashemite University, Jordan

2018 Attending a symposium on the Challenges and Opportunities in Diagnosing, Monitoring and Treating Peripheral Arterial Disease and Diabetic Foot Syndrome.
Organizer: Columbia University (USA) and Jordan University of Science and Technology, in collaboration with the King Abdullah University Hospital and the Columbia Global Center in Amman on December 5th at the Columbia Global Centre Amman

2017 Attending The Higher Council for Science and Technology and JoSTA Network Workshop "What is Research Telling us About Wavelet Based Applications in this 21th Century?"
Speakers: Dr Cajetan Akujuobi and Dr Musa Sarhan from Prairie View A&M

	University. Organizer: The Higher Council for Science and Technology on Aug 17, 2017 Jordan
2012	Attending the JoRIEW Training Sessions for Participation in Competitive European Programmes. Organizer: Hashemite University on September 26-27, 2012, Zarqa, Jordan
2008	Attending a workshop about participation in Tempus –FP7 program which was held in Princess Sumaya University For Technology, 2008, Amman Jordan Organizer: The Higher Council for Science and Technology
2008	Learning Management System, Virtual Classroom Capturing Tools, and Authoring Tools at E-learning center, Hashemite University 2008, Jordan Organizer: Hashemite University, Jordan
2003	Under graduate Tutors Teaching Learning Program at HU, 2003. Organizer: Hashemite University, Jordan
2003	Post Graduate Tutors Teaching Learning Program - Spring Term 2003. Organizer: University of Sussex, UK
2002	National Instrument-UK : workshop on Labview 2002 Organizer: University of Sussex, UK

RESEARCH EXPERIENCE

Research Topics & Interests

Signal and Image processing :

Include analysis and computer aided detection-**CAD** for some challenging clinical issues within medical applications such as:

- Field programable gate arrays FPGA for medical applications
- Computing in Cardiology: ECG, Cardiac Ischemia and Heart Sounds, Cardiac Arrhythmias
- Neurology: Cancer (CT/MRIs), Alzheimer (CT/MRIs), Multiple sclerosis (CT/MRIs), EEG signals
- Ophthalmology: Diabetic Retinopathy and Glaucoma-OCT images
- Pulmonary Embolism (CTPA), and Kidney Ston's detection (CT images)

Biomedical Instrumentation measurement and rehabilitation Devices:

Design and control:

- Optical Iron Deficiency Measurement
- Respiratory Rate Meaurmenet utilizing fiber optics and strain gauges
- ECG and Phonocardiography recording systems
- Lung sound measurement system
- Automated system for wound healing purposes
- Infant weight – Incubator based Temperature Control system
- Automated Measurement system for monitoring the patients' physiotherapeutic treatment progress after the brain Post stroke

Ergonomics / Human factors:

- Virtual Reality Systems (VR) and Haptic Devices in order to increase the effeciency of operator's training skills in Medicine, and manufactuing applications including experimental design and Layout. Furthermore, the effect of VRs on the trainees/ professional personales such that visual and muscle fatigue were addressed.
- The impact of vibration exposure on human body.

  Tools that have been used in this section: VFX1, VFX3, and Microsoft Hololens Head mounted Displays. Omni Phantom. IR Cameras for human motion measurement. ECG, EEG, EOG, and EMG medical Instruments. PZT sensors, Laser Doppler Vibrometer (LDV), variable source of vibration and other facilities in the human factor lab.

Artificial Intelligence: I have been used in my research vary **AI** tools such: ANN, SVMs, ANFIS and Deep learning**.**

FUNDED RESEARCH PROJECTS

Duration	Title	Budget	Sponsor	Role
2021-2023	Non-Invasive Measurement of Blood Iron Deficiency	100,000.00 US$	SRF-Jordan	PI
2004-2008	Implementation of a medical monitoring system based on the use of field programmable gate arrays (FPGA)	11,286.80 US$	Scientific Research Deanship at Hashemite University **(HU)**	PI
2001-2003	Signal processing based algorithm for heart sound analysis using wavelet techniques. University of Sussex with the collaboration of the Cardiology Department at Brighton and Sussex University Hospital in England.	1,977.43 US$	University of Sussex and Brighton and Sussex University Hospital in **UK**	Co-PI

SUPPORTED RESEARCH PROJECTS BY SCIENTIFIC RESEARCH DEANSHIP AT HASHEMITE UNIVERSITY & OTHER PARTNERS

Duration	Title	Location
2016- Present	Toward Detection the Type of Kidney Stones Using Image Analysis Approach Combined with Artificial Intelligence.	Hashemite University and Jordan University Hospital.
2018-2019	Measurement of Visual and Muscle Fatigue Caused By Technology of Augmented Reality: Case study on Microsoft HoloLens	Hashemite University
2016-2018	An improved automated hand dexterity monitoring ultrasonic based- system to measure the progress of physiotherapeutic treatment for post stroke patients.	Hashemite University
2017-2018	A Framework for Enhancing the Classification Accuracy of Heart Sound Signals Using a Novel Feature Extraction Method.	Hashemite University
2015-2016	Comparative analysis for cardiac arrhythmias conditions using iterative filter and high order spectrum techniques: case study on MIT-BIH Arrhythmia Database.	Hashemite University
2016-2017	New automated system to improve the wound healing process for lower and upper Extremities: case study on diabetic foot wound care.	Hashemite University

2016-2018	Novel quantitative approach to detect the Glaucoma disease utilizing OCT images.	Hashemite University and Specialty Hospital-Amman Jordan
2016-2017	Computer aided detection of pulmonary embolism on computed tomography pulmonary angiography views.	Hashemite University
2014-2015	Identifying the influence of social media devices on the biomechanics of users' nick based quantitative parameters approach combined with X-ray image analysis.	Hashemite University and Arab Medical Centre – Amman Jordan.
2012-2013	Automated Intelligent Diagnostic of Alzheimer Disease Based on Neuro-Fuzzy System and Discrete Wavelet Transform.	Hashemite University
2014	Automated detection brain cancer types using vary ANN and ANFIS.	Hashemite University
2009-2010	Toward incorporating the infant weight into Incubator's Automatic Temperature Control.	Hashemite University
2008	Detection of Aortic stenosis from the second heart sound using continuous wavelet transform and Support Vector Machine.	Hashemite University and Sussex University, UK
2007-2008	Brain Cancer detection using MRIs –based statistical approach.	Hashemite University and the Royal Medical Services.
1997-2000	Studying the efficiency of using virtual reality systems (2D/3D visualization) and haptic devices as a training system for operator (e.g. medical personal). Other Physiological parameters relevant to eye/visual and muscle fatigue were measured.	Saint-Petersburg Electrotechnical University, RF

MAJOR PUBLICATIONS

Published Journals

- Bassam Al-Naami. Dual Measurement Approach for Hand Dexterity with Impaired Hand Function Utilizing the Improved Pegboard Test and Ultrasound Based Systems. **Submitted**.
- **B. Al-Naami**, H. Fraihat, N. Y. Gharaibeh and A. -R. M. Al-Hinnawi, "A Framework Classification of Heart Sound Signals in PhysioNet Challenge 2016 Using High Order Statistics and Adaptive Neuro-Fuzzy Inference System," in **IEEE Access**, vol. 8, pp. 224852-224859, **2020**.
- **B. Al-Naami**, H. Owida and H. Fraihat, "Quantitative analysis signal-based approach using the dual tree complex wavelet transform for studying heart sound conditions," **2020 IEEE** 5th Middle East and Africa Conference on Biomedical Engineering (MECBME), Amman, Jordan, 2020, pp. 1-4, doi: 10.1109/MECBME47393.2020.9265121.
- Abdel-Razzak M. Al-hinnawi, Arqam M. Alqasem, **Bassam Al-Naami**. Three-Dimensional Surface Presentation of Optic Nerve Head from SPECTRALIS OCT images: Observing Glaucoma Patients. International Ophthalmology - **Springer**. Vol. 39 (9), 2019.
- Naser Y. Gharaibeh, Obaida M. Al-hazaimeh, **Bassam Al-Naami**, Khalid M.O. Nahar. An Effective Image Processing Methods for Detection of Diabetic Retinopathy Diseases from Retinal Fundus

Images. International Journal of Signal and Imaging Systems Engineering-**Inderscience**. Vol.11 (4), **2018**.

- Al-Hinnawi, AR.M., **Al-Naami, B.O**.& Al-azzam, H. Collaboration between interactive three-dimensional visualization and computer aided detection of pulmonary embolism on computed tomography pulmonary angiography views. Radiological Physics and Technology- **Springer**, **2018**, Vol. 11(1), pp 61–72. (ISI & Scopus).
- Natchanon Promprasit, Weerasak Ussawawongaraya, Chissanuthat Bunluechokchai, **Bassam Al-Naami**, Pattaraweerin Woraratsoontorn .Effects of obesity on heart rate variability in continuous ambulatory peritoneal dialysis patients. International Journal of Applied Biomedical Engineering. Vol. 11(1), **2018**.
- Abdel-Razzak M. Al-hinnawi, **Bassam Al-Naami**, Motasem M. Al-Latayfeh. Optic Nerve Head Slope-Based Quantitative Parameters for Identifying Open-Angle Glaucoma on SPECTRALIS OCT Images. International Ophthalmology - **Springer**. Vol. 37, No. 4, **2017**.
- **Bassam Al-Naami**, Abdel-Razzak Al-Hinnawi, Ahmad Al-Kiswani, Ala'a Dahabreh, Faris Al-Assaf, Mohd Kullab. Toward incorporating the infant weight into Incubator's Automatic Temperature Control. Journal of Medical Devices. **Transaction of ASME.** 10(1), **2016**.
- **Bassam Al-Naami**, Mohammad Abumallouh, and Eman Abdel Hafez. Performance Comparison of Adaptive Neural Networks and Adaptive Neuro-Fuzzy Inference System in Brain Cancer Classification. Jordan Journal of Mechanical and Industrial engineering. Vol. 8, No. 5, **2014** (ISI&Scopus).
- **Bassam Al-Naami**, Mohammad Abumallouh, and Abed-AlRazzaq Kheshman. Automated Intelligent Diagnostic of Alzheimer Disease Based on Neuro-Fuzzy System and Discrete Wavelet Transform. International Journal of Biomedical Engineering: Applications, Basis and Communications- **World Scientific**. Vol. 26, No. 3 (**2014**) 1450035 (10 pages).
- **Bassam Al-Naami**, Nasr Gharaibeh, Thaier Hayajneh, Bassam J Mohd, Abed-AlRazzaq Kheshman, "Classification of Ischemic Optic Neuropathy Using Custom Image Processing Algorithm-Statistical Based Analysis", JDCTA: International Journal of Digital Content Technology and its Applications, Vol. 7, No. 10, pp. 95 - 106, **2013**; doi : 10.4156/jdcta.vol7.issue10.10 (Scopus).
- Bassam Jamil Mohd, Saed Abed, **Bassam Na'ami**, Thaier Hayajneh. Hierarchical Steganography Using Novel Optimum Quantization Technique. Journal of Signal, Image and Video Processing-**Springer**. Vol. 7 (6):1029-1040, **2013**. (ISI & Scopus).
- **Bassam Al-Naami**, Adnan Bashir, Hani Amasha, Jamal Al-Nabulsi and Abdul-Majeed R. Almalty. Statistical Approach for Brain Cancer Classification Using a Region Growing Threshold. Journal of Medical systems-**Springer**, Vol. 35(4): 463–471, **2011**. (ISI & Scopus).
- Amasha, Hani M., Al-Nabulsi, Jamal I., Aloquili, O M. and **Al-Naami**, **Bassam O**., A Multi-Bundle Concentric Coil Wirelessly Transferring Power to In Vivo Implantable Devices. Journal of Medical Engineering and technology**- Taylor & Francis**, Vol. 35(1): 47–53, **2011**. (ISI & Scopus).
- **Bassam Al-Naami**, Jamal Al-Nabulsi, Hani Amasha, John Torry. Utilizing Wavelet Transform and Support Vector Machine for Detection of the Paradoxical Splitting in the Second Heart Sound. Journal of Medical & Biological Engineering & Computing-**Springer**, Vol.48 (2): 177-184, **2010**. (ISI & Scopus).
- Adnan Al-Bashir and **Bassam Al-Naami**. A Fusion Technique Based on Image - Statistical Analysis for Detection of Throat Cancer Types. Jordan Journal of Mechanical and Industrial engineering, Vol. 4(6): 677 – 684, **2010**. (ISI &Scopus).
- Abdul-Majeed R. Almalty, Jerrold Scott Petrofsky, **Bassam Al-Naami**, J Al-Nabulsi, An Effective

Method for Skin Blood Flow Measurement Effected by Local Heat Combined With Electrical Stimulation. Journal of Medical Engineering and technology. **Taylor & Francis**, Vol. 33(8): 663–669, **2009**. (ISI & Scopus).

- **Bassam Al-Naami,** Adnan Al-Bashir, Moh'd Al-Ashhab. 'Statistical Modeling for Perception of Images in Stereoscopic Displays'. Jordan Journal of Mechanical and Industrial Engineering, Vol.3 (1): 31-36, **2009**. (Scopus).
- J Al-Nabulsi, H Amasha, B Altrabsheh, **B. Al-Naami**. 'Automatic Control of Electrodes in Lithotripsy Machine'. Jordan Journal of Mechanical and Industrial Engineering.Vol.3 (3): 182 – 189, **2009**. (Scopus).

Refereed International Periodicals and Proceedings

- **B. Al-Naami**, N. Gharaibeh, and Abed AlRazzaq Kheshman. "Automated Detection of Alzheimer Disease Using Region Growing technique and Artificial Neural Network". ICBCBBE 2013: International Conference on Bioinformatics, Computational Biology and Biomedical Engineering. World Academy of Science, Engineering and Technology 77, 13-17, **2013**, Lucerne, Switzerland. (Peer reviewed).
- B. Mohd, S. Abed, **B. Al-Naami** and S. Alouneh. "Image Steganography Optimization Technique", Lecture Notes of the Institute for Computer Sciences, Social Informatics and Telecommunications Engineering, Volume 62, International Joint Conference on Advances in Signal Processing and Information Technology, Part 1, Pages 205-209, **2011**, Amsterdam, Netherland. (Peer reviewed).
- **B. Al-Naami**, J Chebil, B Trabsheh, H Mgdob. 'Developing Custom Signal Processing Algorithm with LabView FPGA and Compact RIO to Detect the Aortic Stenosis Disease'. The Proceedings of IEEE Computers in Cardiology **2006**, Volume 33; 193-196, Valencia, Spain. (Peer reviewed).
- Adnan Al-Bashir, **Bassam Al-Naami**. ' Statistical modeling for perception of images in stereoscopic displays utilizing virtual reality environment systems' The Proceedings of the Int. Conf. on Computer and Communication Engineering, **IEEE** - **ICCCE'2006**, Volume II; 1108-1112. Kuala Lumpur- Malaysia. (Peer reviewed).
- **B Al-Naami**, J. Chebil and J.N. Torry. 'Identification of Aortic Stenosis Disease Using Discrete Wavelet Transform'. The Proceedings of IEEE Computers in Cardiology **2005**, Volume 32; 667-670, Lyon-France (Peer reviewed).
- H. Mgdob, J. Torry, R. Vincent, **B. Al-Naami**. 'The application of Morlet Transform Wavelet in the detection of Paradoxical Splitting of S2'. The Proceedings of IEEE Computers in Cardiology **2003**, Volume 30; 323-326, Thessaloniki – Greece. (Peer reviewed).
- **Bassam Al-Naami**, Panayiotis Diamantopoulos. 'Evaluation of new techniques of biomedical modeling for training of an operator in surgery by means of Virtual Reality Systems.' The Proceeding of the Ninth International Conference: Modern Training Technologies. Saint-Petersburg, **2003**.
- **Al**-**Naami Bassam**. 'Training in virtual reality'. The Proceeding of the Sixth International Conference: Modern Training Technologies. Saint-Petersburg, 2000.
- **Al**-**Naami Bassam**, Kasatkin E.A., Nikolay V. Lysenkoet al. 'Peculiarities of using operational systems of virtual reality in modern training technologies' Proceeding of the Sixth International Conference. Modern Training Technologies": Saint-Petersburg, 2000.
- **Al-Naami Bassam**, Nikolay V. Lysenko. 'Virtual reality influence on work intensity of trainees with three-dimensional images'. Proceeding of the Fifth International Conference: Modern Training Technologies. Saint-Petersburg, 1999.
- Lysenko Nikolay V., **Al-Naami Bassam**. 'Peculiarities of operator interaction with operational

systems of virtual reality'. The First Scientific and Technical Conference the Newest achievements in the Field of Television, Audio and Video Engineering: Report. 1999.

- Lysenko Nikolay V., **Al-Naami Bassam**. 'Peculiarities of trainees work with three-dimensional images'. Proceedings of the International Conference: Modern training technologies. Saint-Petersburg, 1998.

COMMUNITY SERVICE

Journal's Editorial Board Membership:

2017-Present	**Associate Editor:** BMC Research Notes, BiomedCentral-SPRINGER NATURE,**UK**
2019-2020	**Associate Editor:** The Open Biomedical Engineering Journal. BENTHAM OPEN, **UAE**
2018-Present	**Member of Editorial Team:** Lupine Publishers, Journal of Biomedical Engineering and it's Applications **USA**
2017-Present	**Member of Editorial Team:** International Journal of Bio analysis & Biomedicine, SciRes Literature LLC **USA**
2017-Present	**Member of Editorial Team:** American Journal of Anesthesia & Clinical Research, SciRes Literature LLC **USA**
2017-Present	**Member of Editorial Team:** Qingres | Med One, medical journal founded by Qingres Ltd in the **UK**
Lucerne, Switzerland 2013	**Chair Session** during International Conference on Bioinformatics, Computational Biology and Biomedical Engineering. World Academy of Science, Engineering and Technology 77. 5-7 may, 2013
2017	Member of Technical program committee in 2017 IEEE Jordan Conference on Applied Electrical Engineering and Computing Technologies (AEECT).
2016	Member of Technical Reviewers in 2016 IEEE-EMBS Conferences on Biomedical Engineering and Sciences,4-8 December 2016, Kuala Lumpur
2015	Member of Technical program committee in 2015 IEEE Jordan Conference on Applied Electrical Engineering and Computing Technologies (AEECT), Nov 03-05, 2015. The University of Jordan, Amman-Jordan
2013	Member of Technical program committee in 2013 IEEE Jordan Conference on Applied Electrical Engineering and Computing Technologies (AEECT), Dec 3-5, 2013.
2012	Member of Local Arrangement Committee within the IEEE International Conference on Computer, Information and Telecommunication Systems (CITS-2012),Amman, Jordan, May 14-16, 2012.

PARTICIPATION IN COMMITTEES

National Level

2020	**Member of Scientific committee and tracking chair on** 2020 IEEE 5th Middle East and Africa Conference on Biomedical Engineering (MECBME)
May 7-8, 2012	**Member** of the Local Organizing Committee within the Fifth National Technology Parade that held at Hashemite University
2003-2005	**Member** of Inventions evaluating Committee. Responsible for studying the

submitted applications to the ministry of Industry and Trade to receive patent approval in the field of biomedical engineering.

University Level

2016-2017	**Technical Member** of the Ministry of Education Committee formed by the Hashemite University. Responsible for arbitration, supervision and guidance on the writing of schools' technical books.
2014-2015 & 2011-2012	**Member** of University Student Academic Problems Committee
2014-2015	**Member** of the Dean's Council
2014-2015	**General Coordinator** of the graduation ceremony of university students in the Deanship of Student Affairs
2014-2015	**Chairman** of Student Council Election Committee in Engineering Faculty
2015-2016	**General Coordinator** for the Reception Committee of all new students. Responsible for supervision and guidance on new-students registration procedure
2014-2015	**Chairman** of Students Reprimand Committee
2010-2012& 2003-2004	**Member** of student affairs deanship council

Engineering Faculty Level

2018-2019	**Member** of Scientific Research Committee
2018-2019	**Member** of the Promotion committee. Responsible for eligibility for promotion to associate professor of civil engineering
2017-2018 2015-2016 2010-2012 2008-2009 2005-2006	**Member** of the Council of the Engineering Faculty as a department representative
2017-2018 & 2010-2012	**Chairman** of Students Reprimand Committee in Engineering Faculty. Responsible for solving student academic and social problems inside the university's community
2017-2018	**Chairman** of the Promotion committee. Responsible for eligibility for promotion transfer into assistant professor (A- grade) of mechanical engineering.
2016-2017	**Member** of Committee for Higher Technical Diploma. Responsible for supervision and guidance on providing short technical program (less than 2 years) within engineering faculty.
2016-2017	**Chairman** of the Academic Programs Marketing Committee. Responsible for supervision and guidance on marketing the faculty engineering programs on the national and international levels.
2016-2017	**Member** of the Library and References Committee
2005-2017	**Member** of Students Reprimand Committee in Engineering Faculty
2018, 2012, 2011 and 2004	**Member** of Organizing Committee within the Annual Engineering Scientific Day
2010-2012	**Member** of Supporting Graduation Projects Committee. Responsible for studying the proposals of student final year projects and provide them with appropriate fund
13th Feb 2011	**Member** of Technical Committee for Ceremony Opening the Schools of Medical

	Sciences under the patronage of his Majesty King Abdullah II
2010-2012	**General Coordinator** of student-practical training affairs at engineering faculty in addition to duties as assistant dean
2010-2012	**Chairman** of Diploma Equivalence Committee. Responsible for approval of some selected diploma courses to be transferred to BSc engineering program.
2010/2011	**Member** of Website Development Committee of the engineering faculty

Department Level

2018/2019	**Chairman** of the Appointment and Promotion committee. Responsible for eligibility of 3 promotions transferred to assistant/associate professor (A grade) of Biomedical Engineering department.
2015-2019	**Member** of Scientific Research Committee
4th April 2017	**Founder** and Organizer the WORLD ARDUINO DAY in BME department. I acted as an Instructor/supervisor for the Interfacing and Transducers course and Arduino projects with different applications
2015-2018	**Member** of Studies and Consultations committee
2015-2018	**Member** of the Appointment and Promotion committee
2011/2012 2015/2016	**Member** of the Labs Equipment Committee
2011/2012	**Member** of the Promotion committee. Responsible for eligibility of promotion to associate professor of Biomedical Engineering Department
2009-2010	**Member** of Diploma Equivalence Committee. Responsible for approval of some selected diploma courses to be transferred to BSc in BME
2005-2009	**Member** of Student Practical Training Committee and communication with industry
Frequently	**Member** of the Library and References Committee
Frequently	**Chairman** of Exams Committee
Frequently	**Member** of Examining Committee for many under graduated projects
2009 & 2017/2018	**Member** of ABET Committee
2006-2008	**Member** of Student Election Committee
2004-2008	**Member** of Committee of department Postgraduate Student Affairs (PhD candidates abroad).
2009/2010	**Member** of Instrumentation and Signal processing Committee. Responsible for providing the description for Bio-Transducers, Medical Imaging, and Digital imaging processing courses
2009-2011	**Member** of department course curriculum (154 Credited Hours).

JOURNAL REVIEWS

I have reviewed for 30 journals/130 reviews and identified by Publons - Clarivate Analytics. Some of them are selected:

- Journal of **IEEE** access, 2020 & 2021
- MDPI Information, 2021
- Journal of Computerized Medical Imaging and Graphics, **Elsevier**-UK, 2019,2020

- Journal of the International Measurement Confederation (IMEKO) **Elsevier**-UK, 2019,2020
- Measurement Science and Technology, **IOP**, UK-2018.
- Applied Ergonomics, Human Factors in Technology and Society, **Elsevier**-UK, 2018
- Journal of Applied Optics, The Optical Society of America (**OSA**), USA, 2017
- Journal of optics express, The Optical Society of America (**OSA**), USA, 2014.
- Journal of Soft Computing, **Springer**, 2019.
- Journal of Medical & Biological Engineering & Computing. **Springer** Publisher, 2012, 2013, 2014, 2015, 2016, 2017, and 2018.
- Journal of Biomedical Signal Processing & Control, **Elsevier** Publisher, 2015, 2017,2018 & 2019
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- Journal of Digital Imaging, **Springer** Publisher- USA, 2012, 2017 & 2018..
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- Journal of BiomedizinischeTechnik - Biomedical Engineering, **German Society of Biomedical** Engineering, Germany 2011& 2012.
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- Journal of Computer Science and System Biology. OMICS International, USA-2017.
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- Jordan Journal of Biological Sciences, 2016.
- Journal of Advances in Bioinformatics, Hindawi 2012

CONFERENCES & PROCEEDING REVIEWS

- **2020 IEEE** 5th Middle East and Africa Conference on Biomedical Engineering (MECBME), Jordan. TPC member
- **2019 IEEE Jordan** International Joint Conference on Electrical Engineering and Information Technology (JEEIT 2019).
- **2018 IEEE EMBS** conference on biomedical engineering and sciences (IECBES 2018). Kuching Sarawak, Malaysia. December 2018.
- The International Conference on Computational Materials Science and Thermodynamic Systems (CMST 2018), Wolfson College, University of Cambridge, UK, 2018
- IEEE Jordan Conference on Applied Electrical Engineering and Computing Technologies (AEECT), 2017
- IEEE-EMBS Conference on Biomedical Engineering and Sciences. The Pullman Bangsar, Kuala Lumpur, Malaysia, 2016
- IEEE Jordan Conference on Applied Electrical Engineering and Computing Technologies (AEECT), 2015
- IEEE EMBS International Conference on Biomedical Engineering & Sciences (IECBES 2013), University of Malaya, Malaysia, 2013
- IEEE Jordan Conference on Applied Electrical Engineering and Computing Technologies (AEECT), 2013
- IEEE 9th International Symposium on Mechatronics and its Applications (ISMA'13), Amman – Jordan, 2013
- IEEE The 9th International Workshop on Systems, Signal Processing and their Applications (WOSSPA 2013) Algeria.
- IEEE EMBS International Conference on Biomedical Engineering & Sciences (IECBES 2012),

Langkawi, Malaysia 2012

- IEEE EMBS International Conference on Biomedical Engineering & Sciences (IECBES 2010), University of Malaya, Malaysia 2010
- Proceeding of the first Middle East Conference on Biomedical Engineering (MECBME'11), Sharjah, UAE, Feb. 22-25, 2011.
- The biomedical signal processing section at the "1st International Conference on Computer, Communication and Signal Processing CCSP'05. Kuala Lumpur, Malaysia 12-16 November 2005.

LANGUAGES KNOWN:

English, Arabic and Russian

IT FORTE:

- Image and Signal Processing toolkit-Matlab
- Vision toolkit- Labview
- FPGA- Labview based
- Arduino
- Excell
- Image-J