Prof. Md Saiful Islam

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Biography

Saiful Islam is a professor in the Computer Engineering Department, TED University, Türkiye. He received his Ph.D. in computer engineering from Nanyang Technological University (NTU), Singapore in 2007. He worked as a research fellow in NTU and an assistant professor in DUET, Bangladesh. His current research interests include Machine Learning for Healthcare, Biometrics, Information Security.

Education Information

Doctorate, Nanyang Technological University, Computer Engineerng, Singapore 2002 - 2007

Research Areas

Computer Sciences, Biomedical Engineering

Academic Titles / Tasks

Professor, TED University, Faculty of Engineering, Department of Computer Engineering, 2022 - Continues
Associate Professor, King Saud University, College of Computer and Information Sciences, Computer Science, 2017 - Continues
Assistant Professor, King Saud University, College of Computer and Information Sciences, Computer Science, 2010 - 2017

Courses

Concepts of Programming Languages, Undergraduate
Relational Databases, Undergraduate
Database Systems, Undergraduate
Computer Organization, Undergraduate, 2022 - 2023
Computer Organization, Undergraduate, 2022 - 2023

Published journal articles indexed by SCI, SSCI, and AHCI

I. **Deep Contrastive Learning-Based Model for ECG Biometrics**
Ammour N., Jomaa R. M., Islam M. S., Bazi Y., Alhichri H., Alajlan N.
Applied Sciences (Switzerland), vol.13, no.5, 2023 (SCI-Expanded)

II. **Multiscale Encoding of Electrocardiogram Signals with a Residual Network for the Detection of Atrial Fibrillation**
Alsaleem M. N., Islam M. S., Al-Ahmadi S., Soudani A.
Bioengineering, vol.9, no.9, 2022 (SCI-Expanded)

III. **Using ECG signal as an entropy source for efficient generation of long random bit sequences**
Islam M. S.
Journal of King Saud University - Computer and Information Sciences, vol.34, no.8, pp.5144-5155, 2022 (SCI-Expanded)

IV. **A multilayer system to boost the robustness of fingerprint authentication against presentation attacks by fusion with heart-signal**
Jomaa R. M., Islam M. S., Mathkour H., Al-Ahmadi S.
JOURNAL OF KING SAUD UNIVERSITY-COMPUTER AND INFORMATION SCIENCES, vol.34, no.8, pp.5132-5143, 2022 (SCI-Expanded)

V. **HGSORF: Henry Gas Solubility Optimization-based Random Forest for C-Section prediction and XAI-based cause analysis**
Islam M. S., Awal M. A., Laboni J. N., Pinki F. T., Karmokar S., Mumenin K. M., Al-Ahmadi S., Rahman M. A., Hossain M. S., Mirjalili S.
Computers in Biology and Medicine, vol.147, 2022 (SCI-Expanded)

VI. **An Improved Machine-Learning Approach for COVID-19 Prediction Using Harris Hawks Optimization and Feature Analysis Using SHAP**
Debjit K., Islam M. S., Rahman M. A., Pinki F. T., Nath R. D., Al-Ahmadi S., Hossain M. S., Mumenin K. M., Awal M. A.
Diagnostics, vol.12, no.5, 2022 (SCI-Expanded)

VII. **Diagnostic Features and Potential Applications of PPG Signal in Healthcare: A Systematic Review**
Almarshad M. A., Islam M. S., Al-Ahmadi S., Bahammam A. S.
Healthcare (Switzerland), vol.10, no.3, 2022 (SCI-Expanded)

VIII. **Encryption based image watermarking algorithm in 2DWT-DCT domains**
Hasan N., Islam M. S., Chen W., Kabir M. A., Al-Ahmadi S.
Sensors, vol.21, no.16, 2021 (SCI-Expanded)

IX. **Using convolutional neural network and a single heartbeat for ecg biometric recognition**
Alduwaile D. A., Islam M. S.
Entropy, vol.23, no.6, 2021 (SCI-Expanded)

X. **Retinal blood vessel segmentation from fundus image using an efficient multiscale directional representation technique Bendlets**
Kushol R., Hasanul Kabir M., Abdullah-Al-Wadud M., Islam M. S.
Mathematical Biosciences and Engineering, vol.17, no.6, pp.7751-7771, 2020 (SCI-Expanded)

XI. **Bengali Stop Word and Phrase Detection Mechanism**
Haque R. U., Mridha M., Hamid M. A., Abdullah-Al-Wadud M., Islam M. S.
Arabian Journal for Science and Engineering, vol.45, no.4, pp.3355-3368, 2020 (SCI-Expanded)

XII. **End-to-end deep learning fusion of fingerprint and electrocardiogram signals for presentation attack detection**
Jomaa R. M., Mathkour H., Bazi Y., Islam M. S.
Sensors (Switzerland), vol.20, no.7, 2020 (SCI-Expanded)

XIII. **Multiomics analysis reveals that GLS and GLS2 differentially modulate the clinical outcomes of cancer**
Saha S. K., Riazul Islam S., Abdullah-Al-Wadud M., Islam S., Ali F., Park K. S.
Journal of Clinical Medicine, vol.8, no.3, 2019 (SCI-Expanded)

XIV. **Robust Detection of Atrial Fibrillation Using Classification of a Linearly-Transformed Window of R-R**

Intervals Tachogram
Islam M. S., Ben Ismail M. M., Bchir O., Zakariah M., Alotaibi Y. A.
IEEE Access, vol.7, pp.110012-110022, 2019 (SCI-Expanded)

XV. **Self-Adaptive Scheduling of Base Transceiver Stations in Green 5G Networks**
Dutta U. K., Razzaque M. A., Abdullah Al-Wadud M., Islam M. S., Shamim Hossain M., Gupta B.
IEEE Access, vol.6, pp.7958-7969, 2018 (SCI-Expanded)

XVI. **Ontology for attack detection: Semantic-based approach for genomic data security**
Noor S., Ahmed M., Saqib M. N., Abdullah-Al-Wadud M., Islam M. S., Fazal-E-Amin F.
Journal of Medical Imaging and Health Informatics, vol.7, no.6, pp.1309-1323, 2017 (SCI-Expanded)

XVII. **Biometric template extraction from a heartbeat signal captured from fingers**
Islam M. S., Alajlan N.
Multimedia Tools and Applications, vol.76, no.10, pp.12709-12733, 2017 (SCI-Expanded)

XVIII. **Selection of heart-biometric templates for fusion**
Islam S., Ammour N., Alajlan N., Abdullah-Al-Wadud M.
IEEE Access, vol.5, pp.1753-1761, 2017 (SCI-Expanded)

XIX. **Rhythm-based heartbeat duration normalization for atrial fibrillation detection**
Islam M. S., Ammour N., Alajlan N., Aboalsamh H.
Computers in Biology and Medicine, vol.72, pp.160-169, 2016 (SCI-Expanded)

XX. **Heartbeat biometrics for remote authentication using sensor embedded computing devices**
Islam M. S.
International Journal of Distributed Sensor Networks, vol.2015, 2015 (SCI-Expanded)

XXI. **Model-based Alignment of Heartbeat Morphology for Enhancing Human Recognition Capability**
Islam M. S., Alajlan N.
Computer Journal, vol.58, no.10, pp.2622-2635, 2014 (SCI-Expanded)

XXII. **A morphology alignment method for resampled heartbeat signals**
Islam M. S., Alajlan N.
Biomedical Signal Processing and Control, vol.8, no.3, pp.315-324, 2013 (SCI-Expanded)

XXIII. **HBS: A novel biometric feature based on heartbeat morphology**
Islam M. S., Alajlan N., Bazi Y., Hichri H. S.
IEEE Transactions on Information Technology in Biomedicine, vol.16, no.3, pp.445-453, 2012 (SCI-Expanded)

XXIV. **"Improved morphology alignment of resampled heartbeats could be useful in many applications of cardiovascular engineering and ECG-based biometrics"**
Islam M. S.
ELECTRONICS LETTERS, vol.48, no.8, pp.414, 2012 (SCI-Expanded)

XXV. **Resampling of ECG signal for improved morphology alignment**
Islam M. S., Alajlan N., Malek S.
Electronics Letters, vol.48, no.8, pp.427-429, 2012 (SCI-Expanded)

XXVI. **Relative scale method to locate an object in cluttered environment**
Islam M. S., Sluzek A.
Image and Vision Computing, vol.26, no.2, pp.259-274, 2008 (SCI-Expanded)

Articles Published in Other Journals

I. **Heartprint: A Dataset of Multisession ECG Signal with Long Interval Captured from Fingers for Biometric Recognition**
Islam M. S., Alhichri H., Bazi Y., Ammour N., Alajlan N., Jomaa R. M.
Data, vol.7, no.10, 2022 (ESCI)

II. **Hierarchical object categorization with automatic feature selection**
Islam M. S., Sluzek A.
Proceedings of the International Multiconference on Computer Science and Information Technology, IMCSIT 2010,

vol.5, pp.45-51, 2010 (Scopus)

III. **A method for identification of objects in cluttered scenes using local operators and range gating**
Sluzek A., Islam M. S., Seong T. C.
WSEAS Transactions on Systems, vol.5, no.6, pp.1369-1375, 2006 (Scopus)

IV. **Detecting and matching interest points in relative scale**
Islam M. S., Sluzek A., Zhu L.
Machine Graphics and Vision, vol.14, no.3, pp.259-283, 2005 (Scopus)

V. **A wireless sensor network for visual detection and classification of intrusions**
Sluzek A., Annamalai P., Islam M. S.
WSEAS Transactions on Circuits and Systems, vol.4, no.12, pp.1855-1860, 2005 (Scopus)

Refereed Congress / Symposium Publications in Proceedings

I. **Automatic Labeling of Twitter Data for Developing COVID-19 Sentiment Dataset**
Azharul Hasan K., Shovon S. D., Joy N. H., Islam M. S.
5th International Conference on Electrical Information and Communication Technology, EICT 2021, Khulna, Bangladesh, 17 - 19 December 2021

II. **Single Heartbeat ECG Biometric Recognition using Convolutional Neural Network**
Alduwaile D., Islam M. S.
3rd International Conference on Advanced Science and Engineering, ICOASE 2020, Duhok, Iraq, 24 - 25 January 2021, pp.145-150

III. **POSTER: Atrial Fibrillation Detection Using a Double-Layer Bi-Directional LSTM Neural Networks**
Alsaleem M., Islam M. S.
1st International Conference of Smart Systems and Emerging Technologies, SMART-TECH 2020, Riyadh, Saudi Arabia, 3 - 05 November 2020, pp.266-267

IV. **Time-Invariant Cryptographic Key Generation from Cardiac Signals**
Alharbi S., Islam M. S., Alahmadi S.
4th Future Technologies Conference, FTC 2019, California, United States Of America, 24 - 25 October 2019, vol.1070, pp.338-352

V. **Improved sequential fusion of heart-signal and fingerprint for anti-spoofing**
Jomaa R. M., Islam M. S., Mathkour H.
4th IEEE International Conference on Identity, Security, and Behavior Analysis, ISBA 2018, Singapore, Singapore, 11 - 12 January 2018, vol.2018-January, pp.1-7

VI. **Novel remote authentication protocol using heart-signals with chaos cryptography**
Hamad N., Rahman S. M. M., Islam M. S.
2017 International Conference on Informatics, Health and Technology, ICIHT 2017, Riyadh, Saudi Arabia, 21 - 23 February 2017

VII. **Atrial fibrillation detection with multiparametric RR interval feature and machine learning technique**
Islam S., Ammour N., Alajlan N.
2017 International Conference on Informatics, Health and Technology, ICIHT 2017, Riyadh, Saudi Arabia, 21 - 23 February 2017

VIII. **Enhancing the information content of fingerprint biometrics with heartbeat signal**
Jomaa R. M., Islam M. S., Mathkour H.
World Symposium on Computer Networks and Information Security, WSCNIS 2015, Hammamet, Tunisia, 19 - 21 September 2015

IX. **Augmented-hilbert transform for detecting peaks of a finger-ECG signal**
Islam M. S., Alajlan N.
3rd IEEE Conference on Biomedical Engineering and Sciences, IECBES 2014, Kuala-Lumpur, Malaysia, 8 - 10 December 2014, pp.864-867

X. **An efficient QRS detection method for ECG signal captured from fingers**

Islam M. S., Alajlan N.
2013 IEEE International Conference on Multimedia and Expo Workshops, ICMEW 2013, San Jose, CA, United States Of America, 15 - 19 July 2013

XI. **Fusion of fingerprint and heartbeat biometrics using fuzzy adaptive genetic algorithm**
Alajlan N., Islam M. S., Ammour N.
2013 World Congress on Internet Security, WorldCIS 2013, London, England, 9 - 12 December 2013, pp.76-81

XII. **An evaluation of local image features for object class recognition**
Islam S., Sluzek A.
5th International Conference on Computer Vision Theory and Applications, VISAPP 2010, Angers, France, 17 - 21 May 2010, vol.2, pp.519-523

XIII. **3D object localization using local shape features**
Islam M. S., Sluzek A.
9th International Conference on Control, Automation, Robotics and Vision, 2006, ICARCV '06, Singapore, Singapore, 5 - 08 December 2006

XIV. **Using interest points for robust visual detection and identification of objects in complex scenes**
Sluzek A., Islam M. S., Annamalai P.
2006 IEEE/RSJ International Conference on Intelligent Robots and Systems, IROS 2006, Beijing, China, 9 - 15 October 2006, pp.5321-5326

XV. **Visual target detection in unstructured environments - A novel technique for robotic navigation**
Sluzek A., Islam M. S.
ROMANSY 16: ROBOT DESIGN, DYNAMICS , AND CONTROL, vol.487

XVI. **An adaptive edge preserving variational method for color image regularization**
Lin Z., Sluzek A., Islam M. S.
Visual Communications and Image Processing 2005, Beijing, China, 12 - 15 July 2005, vol.5960, pp.2034-2045

XVII. **Matching interest points of an object**
Islam M. S., Lin Z.
IEEE International Conference on Image Processing 2005, ICIP 2005, Genoa, Italy, 11 - 14 September 2005, vol.1, pp.373-376

XVIII. **Towards invariant interest point detection of an object**
Islam M. S., Sluzek A., Lin Z.
13th International Conference in Central Europe on Computer Graphics, Visualization and Computer Vision 2005, WSCG'2005 - In Co-operation with EUROGRAPHICS, Plzen, Czech Republic, 31 January - 04 February 2005, pp.101-104

XIX. **An adaptive edge-preserving variational framework for color image regularization**
Lin Z., Islam M. S.
IEEE International Conference on Image Processing 2005, ICIP 2005, Genoa, Italy, 11 - 14 September 2005, vol.1, pp.101-104

Activities in Scientific Journals

JOURNAL OF KING SAUD UNIVERSITY - COMPUTER AND INFORMATION SCIENCES, Assistant Editor/Section Editor, 2019 - Continues