



Dr. Shahaboddin Shamshirband

Educational Ins. Address: Faculty of Computer Science & Information Technology, University of Malaya, Kuala Lumpur, Malaysia.

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Educational Background

Sep 2011–Nov 2014 *PhD, Computer Science, University of Malaya, Kuala Lumpur, Malaysia.*

Aug 2004- Jan 2007 *MSc, Computer Science (Artificial Intelligence), Iran.*

Sep 2002 – May 2004 *BSc, Computer Science (Software Engineering), Iran.*

Research Interests

- (1): Big Data Analysis
- (2): Engineering Application of Artificial Intelligence
- (3): Machine Learning
- (4): Soft Computing
- (5): Mathematical Modeling

Honors, Grant and Awards

- (1) UM EXCELLENCE AWARDS (PhD CANDIDATE WITH HIGHEST IMPACT PUBLICATIONS)
- (2) Postdoc Fellowship: The High Impact Research, University of Malaya, Malaysia (Dec 2014- Aug 2015)
- (3) PhD Scholarship: The Bright Sparks Program, University of Malaya, Malaysia (Sep 2011- Dec 2014)
- (4) Ranked 50 among about 550 Researchers in the Field of Reinforcement Learning (2016)
- (5) Selected among the Google Scholar 15 Most Cited Authors within Machine Intelligence (2016)
- (6) Outstanding and Recognized Reviewer by Elsevier (2015-2016)
- (7) Top Young Elites Scientific of Islamic Azad University, Tehran, Iran (2011).
- (8) **local Grant member:** Efficient Detection, Analysis And Prevention Of Flood Wastes (UMRG Programme)- University of Malaya- Subsection 1 (Efficient Detection And Reporting Of Flood Wastes Using Wireless Sensor Network) Subsection 2- (Measurement Of The Flood Waste Volume Based On The Digital Image)- Subsection 3 (Intelligent Estimation And Prediction Of Flood Wastes). 190000 (USD).
- (9) **Local Grant (PI):** An Efficient Android Botnet Detection Framework Using Kernel Extreme Learning Machine, Principal Investigator (PI), (BKP)- University of Malaya. 2000 (USD).

(10) **Local Grant (PI):** Intelligent Systems In Wireless Body Area Networks And Biotechnology, Principal Investigator (PI), Postgraduate Research Grant (PPP)- University of Malaya. 1200 (USD)

(11) **Local Grant with minor revision:** Architecting a Framework to verify the Authenticity of Quranic Text on Social Media Platform, FRGS 2016- University of Malaya. 18000 (USD).

(12) **Local Grant (PI):** Prediction, Simulation and Assessment of Flood Hazards Using Computational Intelligence, Postgraduate Research Grant (PPP)- University of Malaya. 1000 (USD).

(13) **Local Grant (PI):** Flood Hazard Mapping Via Image Processing Techniques, Postgraduate Research Grant (PPP)- University of Malaya. 1000 (USD)

International Collaboration

Collaboration with Department of Computer Science (University of Texas at San Antonio).

Collaboration with Department of Automation and Robotic (University of Tuzla, Bosnia and Herzegovina)

Collaboration with Research Centre Intelligent Systems (University of Arad, Romania)

Collaboration with NRF Join Project by Hanyang University (Korea)

Collaboration with College of Computing Sciences and Engineering (Kuwait University)

Collaboration with Faculty of Agricultural Engineering and Technology University of Tehran, Iran

Collaboration with Amir Kabir University, Iran

Collaboration with Naval Research Grant, USA

Collaboration with School of Medical Sciences, the University of New South Wales (Australia)

Technical Skills

(I) Programming Languages

MATLAB, JAVA, R, Python, C++, C#

(II) Data mining Software

Rapid miner, Weka

(III) Statistical Software

SPSS, SAS

Teaching skills

2015-2017, Senior Lecturer in the University of Malaya, Faculty of Computer Science for:

Intelligent Networks, (BSc courses), Emerging Technologies in Communications (BSc courses).

2007-2015, Full Time Faculty Member (Lecturer) in the Islamic Azad University, Iran, Faculty of Computer Science for: Artificial Intelligence, Data Structure, Algorithm, Advanced Programming (BSc courses).

2005-2010, Adjunct Lecturer and Head of Department, Adib University, Mazandaran, Sari, Iran, Faculty of Computer Science for : Algorithm, Operating System, Data Structure, Web programming.

2008-2010, Visiting Senior Lecturer, Payame Noor University, Iran, Faculty of computer science for Artificial Intelligence, Data Structure, Algorithm

2006-2008, Head of Department, Islamic Azad University, Gorgan, Iran, For Data structure, C# programming, Programming Language, C++.

Research experience

2011-till now, Head of Big Data Analysis, Shahab Pardaz Mazand Lab (SPM-LAB)
2012-2015, Security Research Group, University of Malaya-UM.
2013- 2016- Centre for Mobile Cloud Computing Research (C4MCCR)- UM.
2014- 2015, Secure framework for Electronic Medical Records (High-Impact Research Grant by the Ministry of Higher Education). University of Malaya. Malaysia.
2014- 2016, Renewable Energy & Green Technology, University of Malaya.

Scientific Memberships

Member of IEEE SMC (System, Man and Cybernetic Society)
IEEE Professional Member (Iran and Malaysia Section)
Young Research Club (Iran)
Iranian Fuzzy Systems Society (IRAN)
Machine Intelligence Research Lab (USA)
Security research group (Malaysia)
Society of Intelligent Systems (UK)
Kaspersky Academy Member (Russia)
Young Elites Scientific Member(Iran)
The Scientific Community of Computer and Communication Networks
Engineering & Information Technology Iranian Students in South pacific Asia (CCCNIT) (Malaysia)
SERSC (International Journal of Advanced Science and Technology)
International Journal of Computer & Communication Engineering Research (IJCCER)
Scientific Members of Advanced Institute of Convergence Information Technology
Editorial Board @ International Journal of Advanced Intelligence Paradigms (indersiecnce- Scopus).
Guest editorial @ Advances in Meteorology, Special Issue on Hydrological Hazards in a Changing Environment-Early Warning, Forecasting, and Impact Assessment.
Guest Editorial @ Applied Computational Intelligence and Soft Computing, Special Issue Computational Intelligence for Real-World Optimization Problems with Multiple Components (WoS).

Academic Reviewer

IEEE Transaction on Fuzzy Systems	IEEE, 2015
IEEE Transaction on Cloud Computing •	IEEE, 2016
IEEE Transactions on Systems, Man and Cybernetics: Part A: Systems and Humans	IEEE, 2016
IEEE Transactions on Industrial Informatics	IEEE, 2015
IEEE Transactions on Neural Networks and Learning Systems	Elsevier, 2015
Applied Soft Computing	Elsevier, 2016
Neurocomputing	

Engineering Applications of Artificial Intelligence	Elsevier, 2015
Journal of Biomedical Informatics	Elsevier, 2015
Energy Conversation and Management	Elsevier, 2015
Energy	Elsevier, 2015
Renewal Energy	Elsevier, 2014
Measurement	Elsevier, 2016
ISA Transaction	Elsevier, 2016
Journal of Infection and Public Health	Elsevier, 2016
Process Biochemistry	Elsevier, 2015
Journal of Cleaner Production	Elsevier, 2015
Journal Applied Thermal Engineering	Elsevier, 2015
Computers and Operations Research	Springer, 2015
Journal of Grid Computing	Springer, 2016
Medical & Biological Eng & Computing	Springer, 2015
Stochastic Environmental Research and Risk Assessment	Springer, 2016
Information System Frontier Journal	Springer, 2014
Annals of Operations Research	Springer, 2015
International Journal of Distributed Sensor Networks (IJDSN)	SAGE, 2016
Security and Communication Networks	Hindawi, 2014
International Journal of Information Technology & Decision Making	Wiley, 2015
Journal of Experimental & Theoretical Artificial Intelligence	World Scientific, 2015
Concurrent Engineering: Research and Application	Taylor, 2014
KSII Transactions on Internet and Information Systems	Wiley, 2015

ACCOMPLISHMENTS

Selected Journal Publications in Networking and security

- Shahaboddin Shamshirband, Amineh Amini, Nor Badrul Anuar, Miss Laiha Mat Kiah, Ying Wah Teh, Steven Furnell, D-FICCA: A density-based fuzzy imperialist competitive clustering algorithm for intrusion detection in wireless sensor networks, *Measurement*, Volume 55, September 2014, Pages 212-226.
- Shahaboddin Shamshirband, Nor Badrul Anuar, Miss Laiha Mat Kiah, Vala Ali Rohani, Dalibor Petković, Sanjay Misra, Abdul Nasir Khan, Co-FAIS: Cooperative fuzzy artificial immune system for detecting intrusion in wireless sensor networks, *Journal of Network and Computer Applications*, Volume 42, June 2014, Pages 102-117.
- Shahaboddin Shamshirband, Ahmed Patel, Nor Badrul Anuar, Miss Laiha Mat Kiah, Ajith Abraham, Cooperative game theoretic approach using fuzzy Q-learning for detecting and preventing intrusions in wireless sensor networks, *Engineering Applications of Artificial Intelligence*, Volume 32, June 2014, Pages 228-241.
- Shahaboddin Shamshirband, Nor Badrul Anuar, Miss Laiha Mat Kiah, Ahmed Patel, An appraisal and design of a multi-agent system based cooperative wireless intrusion detection computational intelligence technique, *Engineering Applications of Artificial Intelligence*, Volume 26, Issue 9, October 2013, Pages 2105-2127.
- Gani, A., Siddiq, A., Shamshirband, S., & Hanum, F. (2016). A survey on indexing techniques for big data: taxonomy and performance evaluation. *Knowledge and Information Systems*, 46(2), 241-284.
- Khan, A. N., Kiah, M. M., Madani, S. A., Ali, M., & Shamshirband, S. (2014). Incremental proxy re-encryption scheme for mobile cloud computing environment. *The Journal of Supercomputing*, 68(2), 624-651.
- Nor Bakiah Abd Warif, Ainuddin Wahid Abdul Wahab, Mohd Yamani Idna Idris, Roziana Ramli, Rosli Salleh, Shahaboddin Shamshirband, Kim-Kwang Raymond Choo, Copy-move forgery detection: Survey, challenges and future directions, *Journal of Network and Computer Applications*, Volume 75, November 2016, Pages 259-278.
- Afifi F, Anuar NB, Shamshirband S, Choo K-KR (2016) DyHAP: Dynamic Hybrid ANFIS-PSO Approach for Predicting Mobile Malware. *PLoS ONE* 11(9): e0162627. doi:10.1371/journal.pone.0162627
- Qureshi MA, Noor RM, Shamim A, Shamshirband S, Raymond Choo K-K (2016) A Lightweight Radio Propagation Model for Vehicular Communication in Road Tunnels. *PLoS ONE* 11(3): e0152727. doi:10.1371/journal.pone.0152727
- Noor Hayani Abd Rahim , Suraya Hamid , Miss Laiha Mat Kiah , Shahaboddin Shamshirband , Steven Furnell , (2015) "A systematic review of approaches to assessing cybersecurity awareness", *Kybernetes*, Vol. 44 Iss: 4, pp.606 – 622.
- Khan, A. N., Kiah, M. M., Ali, M., & Shamshirband, S. (2015). A Cloud-Manager-Based Re-Encryption Scheme for Mobile Users in Cloud Environment: a Hybrid Approach. *Journal of Grid Computing*, 13(4), 651-675.
- Shamshirband, S., Daghighi, B., Anuar, N. B., Kiah, M. L. M., Patel, A., & Abraham, A. (2015). Co-FQL: Anomaly detection using cooperative fuzzy Q-learning in network. *Journal of Intelligent & Fuzzy Systems*, 28(3), 1345-1357.
- Qureshi, M. A., Noor, R. M., Shamshirband, S., Parveen, S., Shiraz, M., & Gani, A. (2015). A survey on obstacle modeling patterns in radio propagation models for vehicular ad hoc networks. *Arabian Journal for Science and Engineering*, 40(5), 1385-1407.
- Junaid Shuja, Abdullah Gani, Shahaboddin Shamshirband, Raja Wasim Ahmad, Kashif Bilal,

- Sustainable Cloud Data Centers: A survey of enabling techniques and technologies, *Renewable and Sustainable Energy Reviews*, Volume 62, September 2016, Pages 195-214.
- Babak Daghighi, Miss Laiha Mat Kiah, Shahabuddin Shamshirband, Muhammad Habib Ur Rehman, Toward secure group communication in wireless mobile environments: Issues, solutions, and challenges, *Journal of Network and Computer Applications*, Volume 50, April 2015, Pages 1-14.
- Aisha Siddiq, Ibrahim Abaker Targio Hashem, Ibrar Yaqoob, Mohsen Marjani, Shahabuddin Shamshirband, Abdullah Gani, Fariza Nasaruddin, A survey of big data management: Taxonomy and state-of-the-art, *Journal of Network and Computer Applications*, Volume 71, August 2016, Pages 151-166
- Liyana Shuib, Shahabuddin Shamshirband, Mohammad Hafiz Ismail, A review of mobile pervasive learning: Applications and issues, *Computers in Human Behavior*, Volume 46, May 2015, Pages 239-244, ISSN 0747-5632.
- Khan, A. N., Kiah, M. M., Ali, M., Madani, S. A., & Shamshirband, S. (2014). BSS: block-based sharing scheme for secure data storage services in mobile cloud environment. *The Journal of Supercomputing*, 70(2), 946-976.
- Shojafar, M., Kardgar, M., Hosseinabadi, A. A. R., Shamshirband, S., & Abraham, A. (2016). TETS: A Genetic-Based Scheduler in Cloud Computing to Decrease Energy and Makespan. In *Hybrid Intelligent Systems* (pp. 103-115). Springer International Publishing.
- Moosavi, S. A., Jalali, M., Misaghian, N., Shamshirband, S., & Anisi, M. H. (2016). Community detection in social networks using user frequent pattern mining. *Knowledge and Information Systems*, 1-28.
- Shamshirband, S., Banjanovic-Mehmedovic, L., Bosankic, I., Kasapovic, S., & Wahab, A. W. B. A. (2016). Adaptive Neuro-Fuzzy Determination of the Effect of Experimental Parameters on Vehicle Agent Speed Relative to Vehicle Intruder. *PLoS one*, 11(5), e0155697.

Selected Journal Publications in Soft Computing

- Akib, S., Rahman, S., Shamshirband, S., & Petkovic, D. (2015). Soft computing methodologies for estimation of bridge girder forces with perforations under tsunami wave loading. *Bulletin of Earthquake Engineering*, 13(3), 935-952. doi:10.1007/s10518-014-9656-3
- Basser, H., Karami, H., Shamshirband, S., Akib, S., Amirmojahedi, M., Ahmad, R., . . . Javidnia, H. (2015). Hybrid ANFIS-PSO approach for predicting optimum parameters of a protective spur dike. *Applied Soft Computing*, 30, 642-649. doi:10.1016/j.asoc.2015.02.011
- Basser, H., Karami, H., Shamshirband, S., Jahangirzadeh, A., Akib, S., & Saboohi, H. (2014). Predicting optimum parameters of a protective spur dike using soft computing methodologies - A comparative study. *Computers & Fluids*, 97, 168-176. doi:10.1016/j.compfluid.2014.04.013
- Gocic, M., Motamedi, S., Shamshirband, S., Petkovic, D., Sudheer, C., Hashim, R., & Arif, M. (2015). Soft computing approaches for forecasting reference evapotranspiration. *Computers and Electronics in Agriculture*, 113, 164-173. doi:10.1016/j.compag.2015.02.010
- Hamedani, S. R., Liaqat, M., Shamshirband, S., Al-Razgan, O. S., Al-Shammari, E. T., & Petkovic, D. (2015). Comparative Study of Soft Computing Methodologies for Energy Input-Output Analysis to Predict Potato Production. *American Journal of Potato Research*, 92(3), 426-434. doi:10.1007/s12230-015-9453-9
- Kariminia, S., Motamedi, S., Shamshirband, S., Piri, J., Mohammadi, K., Hashim, R., . . . Bonakdari, H. (2016). Modelling thermal comfort of visitors at urban squares in hot and arid climate using NN-ARX soft computing method. *Theoretical and Applied Climatology*, 124(3-4), 991-1004. doi:10.1007/s00704-015-1462-6
- Kariminia, S., Shamshirband, S., Hashim, R., Saberi, A., Petkovic, D., Roy, C., & Motamedi, S. (2016). A simulation model for visitors' thermal comfort at urban public squares using non-

- probabilistic binary-linear classifier through soft-computing methodologies. *Energy*, 101, 568-580. doi:10.1016/j.energy.2016.02.021
- Mohammadi, K., Shamshirband, S., Danesh, A. S., Abdullah, M. S., & Zamani, M. (2016). Temperature-based estimation of global solar radiation using soft computing methodologies. *Theoretical and Applied Climatology*, 125(1-2), 101-112. doi:10.1007/s00704-015-1487-x
- Motamedi, S., Shamshirband, S., Hashim, R., Petkovic, D., & Roy, C. (2015). Estimating unconfined compressive strength of cockle shell-cement-sand mixtures using soft computing methodologies. *Engineering Structures*, 98, 49-58. doi:10.1016/j.engstruct.2015.03.070
- Naji, S., Shamshirband, S., Bassar, H., Alengaram, U. J., Jumaat, M. Z., & Amirmojahedi, M. (2016). Soft computing methodologies for estimation of energy consumption in buildings with different envelope parameters. *Energy Efficiency*, 9(2), 435-453. doi:10.1007/s12053-015-9373-z
- Petkovic, D., Arif, M., Shamshirband, S., Bani-Hani, E. H., & Kiakojoori, D. (2015). Sensorless Estimation of Wind Speed by Soft Computing Methodologies: A Comparative Study. *Informatica*, 26(3), 493-508.
- Petkovic, D., Shamshirband, S., Anuar, N. B., Saboohi, H., Wahab, A. W. A., Protic, M., . . . Mirhashemi, S. M. A. (2014). An appraisal of wind speed distribution prediction by soft computing methodologies: A comparative study. *Energy Conversion and Management*, 84, 133-139. doi:10.1016/j.enconman.2014.04.010
- Petkovic, D., Shamshirband, S., Iqbal, J., Anuar, N. B., Pavlovic, N. D., & Kiah, L. M. (2014). Adaptive neuro-fuzzy prediction of grasping object weight for passively compliant gripper. *Applied Soft Computing*, 22, 424-431. doi:10.1016/j.asoc.2014.04.037
- Protic, M., Shamshirband, S., Anisi, M. H., Petkovic, D., Mitic, D., Raos, M., . . . Alam, K. A. (2015). Appraisal of soft computing methods for short term consumers' heat load prediction in district heating systems. *Energy*, 82, 697-704. doi:10.1016/j.energy.2015.01.079
- Roy, C., Motamedi, S., Hashim, R., Shamshirband, S., & Petkovic, D. (2016). A comparative study for estimation of wave height using traditional and hybrid soft-computing methods. *Environmental Earth Sciences*, 75(7). doi:10.1007/s12665-015-5221-x
- Saberi, A., Motamedi, S., Shamshirband, S., Kausel, C. L., Petkovic, D., Endut, E., . . . Roy, C. (2016). Evaluating the legibility of decorative arabic scripts for Sultan Alauddin mosque using an enhanced soft-computing hybrid algorithm. *Computers in Human Behavior*, 55, 127-144. doi:10.1016/j.chb.2015.08.055
- Saybani, M. R., Teh, Y. W., Aghabozorgi, S. R., Shamshirband, S., Kiah, M. L. M., & Balas, V. E. (2016). Diagnosing breast cancer with an improved artificial immune recognition system. *Soft Computing*, 20(10), 4069-4084. doi:10.1007/s00500-015-1742-1
- Shamshirband, S., Gocic, M., Petkovic, D., Saboohi, H., Herawan, T., Kiah, M. L. M., & Akib, S. (2015). Soft-Computing Methodologies for Precipitation Estimation: A Case Study. *Ieee Journal of Selected Topics in Applied Earth Observations and Remote Sensing*, 8(3), 1353-1358. doi:10.1109/jstars.2014.2364075
- Shamshirband, S., Petkovic, D., Saboohi, H., Anuar, N. B., Inayat, I., Akib, S., . . . Gani, A. (2014). Wind turbine power coefficient estimation by soft computing methodologies: Comparative study. *Energy Conversion and Management*, 81, 520-526. doi:10.1016/j.enconman.2014.02.055
- Shamshirband, S. S., Shirgahi, H., & Setayeshi, S. (2010). Designing of Rescue Multi Agent System Based on Soft Computing Techniques. *Advances in Electrical and Computer Engineering*, 10(1), 79-83. doi:10.4316/aece.2010.01014
- Zakaria, R., Noh, S. M. C., Petkovic, D., Shamshirband, S., & Penny, R. (2014). Investigation of plasmonic studies on morphology of deposited silver thin films having different thicknesses by soft computing methodologies-A comparative study. *Physica E-Low-Dimensional Systems & Nanostructures*, 63, 317-323. doi:10.1016/j.physe.2014.06.003
- Zakaria, R., Sheng, O. Y., Wern, K., Shamshirband, S., Wahab, A. W. A., Petkovic, D., & Saboohi, H.

(2014). Examination of tapered plastic multimode fiber-based sensor performance with silver coating for different concentrations of calcium hypochlorite by soft computing methodologies-a comparative study. *Journal of the Optical Society of America a-Optics Image Science and Vision*, 31(5), 1023-1030. doi:10.1364/josaa.31.001023

Selected Journal Publications in Machine Learning

- Aghbashlo, M., Shamshirband, S., Tabatabaei, M., Yee, P. L., & Larimi, Y. N. (2016). The use of ELM-WT (extreme learning machine with wavelet transform algorithm) to predict exergetic performance of a DI diesel engine running on diesel/biodiesel blends containing polymer waste. *Energy*, 94, 443-456. doi:10.1016/j.energy.2015.11.008
- Cojbasic, Z., Petkovic, D., Shamshirband, S., Tong, C. W., Ch, S., Jankovic, P., . . . Baralic, J. (2016). Surface roughness prediction by extreme learning machine constructed with abrasive water jet. *Precision Engineering-Journal of the International Societies for Precision Engineering and Nanotechnology*, 43, 86-92. doi:10.1016/j.precisioneng.2015.06.013
- Ebtehaj, I., Bonakdari, H., & Shamshirband, S. (2016). Extreme learning machine assessment for estimating sediment transport in open channels. *Engineering with Computers*, 32(4), 691-704. doi:10.1007/s00366-016-0446-1
- Feizollah, A., Anuar, N. B., Salleh, R., Amalina, F., Ma'arof, R. R., & Shamshirband, S. (2013). A STUDY OF MACHINE LEARNING CLASSIFIERS FOR ANOMALY-BASED MOBILE BOTNET DETECTION. *Malaysian Journal of Computer Science*, 26(4), 251-265.
- Gocic, M., Petkovic, D., Shamshirband, S., & Kamsin, A. (2016). Comparative analysis of reference evapotranspiration equations modelling by extreme learning machine. *Computers and Electronics in Agriculture*, 127, 56-63. doi:10.1016/j.compag.2016.05.017
- Kariminia, S., Shamshirband, S., Motamedi, S., Hashim, R., & Roy, C. (2016). A systematic extreme learning machine approach to analyze visitors' thermal comfort at a public urban space. *Renewable & Sustainable Energy Reviews*, 58, 751-760. doi:10.1016/j.rser.2015.12.321
- Mansourvar, M., Shamshirband, S., Raj, R. G., Gunalan, R., & Mazinani, I. (2015). An Automated System for Skeletal Maturity Assessment by Extreme Learning Machines. *Plos One*, 10(9). doi:10.1371/journal.pone.0138493
- Mazinani, I., Ismail, Z. B., Shamshirband, S., Hashim, A. M., Mansourvar, M., & Zalnezhad, E. (2016). Estimation of Tsunami Bore Forces on a Coastal Bridge Using an Extreme Learning Machine. *Entropy*, 18(5). doi:10.3390/e18050167
- Mohammadi, K., Shamshirband, S., Motamedi, S., Petkovic, D., Hashim, R., & Gocic, M. (2015). Extreme learning machine based prediction of daily dew point temperature. *Computers and Electronics in Agriculture*, 117, 214-225. doi:10.1016/j.compag.2015.08.008
- Mohammadi, K., Shamshirband, S., Yee, P. L., Petkovic, D., Zamani, M., & Ch, S. (2015). Predicting the wind power density based upon extreme learning machine. *Energy*, 86, 232-239. doi:10.1016/j.energy.2015.03.111
- Mohammadian, E., Motamedi, S., Shamshirband, S., Hashim, R., Junin, R., Roy, C., & Azdarpour, A. (2016). Application of extreme learning machine for prediction of aqueous solubility of carbon dioxide. *Environmental Earth Sciences*, 75(3). doi:10.1007/s12665-015-4798-4
- Nahvi, B., Habibi, J., Mohammadi, K., Shamshirband, S., & Al Razgan, O. S. (2016). Using self-adaptive evolutionary algorithm to improve the performance of an extreme learning machine for estimating soil temperature. *Computers and Electronics in Agriculture*, 124, 150-160. doi:10.1016/j.compag.2016.03.025
- Naji, S., Keivani, A., Shamshirband, S., Alengaram, U. J., Jumaat, M. Z., Mansor, Z., & Lee, M. (2016). Estimating building energy consumption using extreme learning machine method. *Energy*, 97, 506-516. doi:10.1016/j.energy.2015.11.037

- Nikolic, V., Motamedi, S., Shamshirband, S., Petkovic, D., Ch, S., & Arif, M. (2016). Extreme learning machine approach for sensorless wind speed estimation. *Mechatronics*, 34, 78-83. doi:10.1016/j.mechatronics.2015.04.007
- Petkovic, D., Danesh, A. S., Dadkhah, M., Misaghian, N., Shamshirband, S., Zalnezhad, E., & Pavlovic, N. D. (2016). Adaptive control algorithm of flexible robotic gripper by extreme learning machine. *Robotics and Computer-Integrated Manufacturing*, 37, 170-178. doi:10.1016/j.rcim.2015.09.006
- Sajjadi, S., Shamshirband, S., Alizamir, M., Yee, P. L., Mansor, Z., Manaf, A. A., . . . Mostafaeipour, A. (2016). Extreme learning machine for prediction of heat load in district heating systems. *Energy and Buildings*, 122, 222-227. doi:10.1016/j.enbuild.2016.04.021
- Shamshirband, S., Mohammadi, K., Chen, H. L., Samy, G. N., Petkovic, D., & Ma, C. (2015). Daily global solar radiation prediction from air temperatures using kernel extreme learning machine: A case study for Iran. *Journal of Atmospheric and Solar-Terrestrial Physics*, 134, 109-117. doi:10.1016/j.jastp.2015.09.014
- Shamshirband, S., Mohammadi, K., Tong, C. W., Petkovic, D., Porcu, E., Mostafaeipour, A., . . . Sedaghat, A. (2016). Application of extreme learning machine for estimation of wind speed distribution. *Climate Dynamics*, 46(5-6), 1893-1907. doi:10.1007/s00382-015-2682-2
- Shamshirband, S., Mohammadi, K., Tong, C. W., Petkovic, D., Porcu, E., Mostafaeipour, A., . . . Sedaghat, A. (2016). Application of extreme learning machine for estimation of wind speed distribution (vol 46, pg 1893, 2016). *Climate Dynamics*, 46(5-6), 2025-2025. doi:10.1007/s00382-015-2730-y
- Shamshirband, S., Mohammadi, K., Yee, P. L., Petkovic, D., & Mostafaeipour, A. (2015). A comparative evaluation for identifying the suitability of extreme learning machine to predict horizontal global solar radiation. *Renewable & Sustainable Energy Reviews*, 52, 1031-1042. doi:10.1016/j.rser.2015.07.173

Conference Publications

- 1 Shamshirband, S., Shojafar, M., Hosseinabadi, A. A. R., & Abraham, A. (2015). OVRP_ICA: An Imperialist-Based Optimization Algorithm for the Open Vehicle Routing Problem. In E. Onieva, I. Santos, E. Osaba, H. Quintian, & E. Corchado (Eds.), *Hybrid Artificial Intelligent Systems* (Vol. 9121, pp. 221-233).
- 2 Shamshirband, S., Shojafar, M., Hosseinabadi, A. A. R., Abraham, A., & Ieee. (2014). A Solution for Multi-objective Commodity Vehicle Routing Problem by NSGA-II. *2014 14th International Conference on Hybrid Intelligent Systems (His)*, 12-17.
- 3 Shojafar, M., Kardgar, M., Hosseinabadi, A. A. R., Shamshirband, S., & Abraham, A. (2016). TETS: A Genetic-Based Scheduler in Cloud Computing to Decrease Energy and Makespan. In A. Abraham, S. Y. Han, S. A. AlSharhan, & H. Liu (Eds.), *Hybrid Intelligent Systems, His 2015* (Vol. 420, pp. 103-115).