

Roger R. Achkar, Ph.D.

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BIOGRAPHICAL SKETCH

Dr. Roger Achkar is the Dean of the Faculty of Engineering at the American University of Science and Technology and an Associate Professor in Electrical Engineering. Dr. Achkar received a Ph.D. degree in Energetic System and Information from the University of Technology of Compiègne, France, in 2008. A Master degree in Research (DEA) from the Lebanese University, Faculty of Engineering, in 2004, and a B.E degree in Electrical Engineering from the Lebanese University, Faculty of Engineering, Branch II, Roumieh, Lebanon, in 2002.

Dr. Achkar has been a member of the Order of Engineers and Architects in Lebanon since 2005, and Treasurer of the IEEE Lebanon Section. His Research interests are in Electrical, Communications and Mechanical Engineering Education. He developed and applied, on an active magnetic bearing (AMB), an artificial neural network able to control non-linear systems. Currently, he is leading several research projects in the area of Artificial Intelligence, Machine Learning, IOT, Communications, Vision and Control.



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LIST OF RECENT PUBLICATIONS

1. E. Kfoury, J. Saab, P. Younes and **R. Achkar**. "A Self Organizing Map Intrusion Detection System for RPL Protocol Attacks". International Journal of Interdisciplinary Telecommunications & Networking (IJITN), Volume 11, Issue 1, January 2019, DOI: 10.4018/IJITN.2019010103, pp. 30-43.
2. **R. Achkar**, I. Mansour, M. Owayjan and K. Hitti. "Prediction of football matches' results using Neural Networks". Proceedings of the International Conference on Advanced Intelligent Systems and Informatics 2018. AISI 2018. Advances in Intelligent Systems and Computing, Vol. 845. Springer, Cham. https://doi.org/10.1007/978-3-319-99010-1_15, pp 169-179.
3. M. Habash, H. Al Haj Hassan, and **R. Achkar**. "Analysis of Using Drone-Base Stations on the Performance of Heterogeneous Cellular Network". 2018 IEEE International Multidisciplinary Conference on Engineering Technology (IMCET), Nov 14-16, 2018, pp. 18-22.
4. **R. Achkar**, F. Elias-Sleiman, H. Ezzidine and N. Haidar. "Comparison of BPA-MLP and LSTM-RNN for Stocks Prediction". 6th International Symposium on Computational and Business Intelligence (ISCBI), Basel, Switzerland, August 27-29, 2018.
5. **R. Achkar**, J. Narcis, W. Abou Awad and K. Hitti. "Smart X-Ray Scanners using Artificial Neural Networks". IEEE, 20th International Conference on Modelling and Simulation, UKSim 2018, Cambridge University, United Kingdom, 27-29 March 2018, pp. 6-8.
6. G. Abou Kassm and **R. Achkar**. "LPR CNN Cascade and Adaptive Deskewing". Complex Adaptive Systems, Procedia Computer Science, Elsevier, Volume 114, November 2017, pp 296-303. DOI: 10.1016/j.procs.2017.09.043, www.sciencedirect.com/science/journal/18770509/114.
7. **R. Achkar**, M. El-Halabi, E. Bassil, R. Fakhro and M. Khalil. "Voice Identity Finder Using the Back-Propagation Algorithm of an Artificial Neural Network". Complex Adaptive Systems, Procedia Computer Science, Elsevier, Volume 95, November 2016, pp 245-252. DOI: 10.1016/j.procs.2016.09.322, www.sciencedirect.com/science/article/pii/S1877050916324954.
8. G. Abou Haidar, **R. Achkar** and H. Dourgham. "A Comparative Simulation Study of the Real Effect of PCM & DPCM Systems on Audio and Image Modulation". IEEE International Multidisciplinary Conference on Engineering Technology (IMCET 2016), Beirut, Lebanon, 2-4 November 2016, pp 144-149.
9. **R. Achkar**, R. Geagea and H. Mehio. "Smart-Coach Personal Gym Trainer an Adaptive Modified Back-Propagation Approach". IEEE International Multidisciplinary Conference on Engineering Technology (IMCET 2016), Beirut, Lebanon, 2-4 November 2016, pp 218-223.

10. M. Owayjan, **R. Achkar**, and M. Iskandar. "Face Detection with Expression Recognition using Artificial Neural Networks". 3rd Middle East Conference on Biomedical Engineering (MECBME), Beirut, Lebanon, 6-7 October 2016, pp. 116-120.
11. N. El Halabi, **R. Achkar**, R. Abi Zeid Daou, A. Hayek and J. Boercsoek. "Design and Testing Tool for a Safe Monitoring System for Neurodegenerative Disorder Patients". 3rd International Conference on Advances in Computational Tools for Engineering Applications (ACTEA 2016), Zouk Mosbeh, Lebanon, 13-15 July 2016, pp 172-177.
12. **R. Achkar**, J. Farhat, E. Bassil and Z. Barakat. "3D Replica Conferencing System". 15th IEEE International Conference on Wireless Telecommunications (WTS 2016), London, UK, 18-20 April 2016.
13. G. Abou Haidar, **R. Achkar** and R. Maalouf. "Smart Walker Using Android Application". International Journal of Computing and Digital Systems ISSN (2210-142X). Int. J. Com. Dig. Sys. 4, No.3 (July-2015). <http://dx.doi.org/10.12785/ijcnds/040304>
14. C. Saide, R. Lengelle, P. Honein, C. Richard, and **R. Achkar**. "Nonlinear Adaptive Filtering using Kernel-based Algorithms with Dictionary Adaptation". International Journal of Adaptive Control and Signal Processing, March 2015. Published online in Wiley InterScience (www.interscience.wiley.com). DOI: 10.1002/acs.2548.
15. M. El-Halabi and **R. Achkar**. "Physical-Layer Security for Multi-Antenna Wiretap Channel in the Wideband Regime". 11th IEEE International Conference on Wireless and Mobile Computing, Networking and communications (WiMob), Abu Dhabi, UAE, 19-21 October 2015, pp. 517-521.
16. **R. Achkar**, G. Abou Haidar, H. Dourgham, D. Semaan, and H. Araji. "Mobile Controlled Wheelchair". 9th IEEE European Modelling Symposium on Mathematical Modelling and Computer Simulation, EMS 2015, Madrid, Spain, 6-8 October, 2015, pp. 429-434.
17. **R. Achkar**, G. Abou Haidar, T. Azzam, and A. Bou Hamdan. "Data Collection Kits for Vehicles-Blue Box System". 2015 World Symposium on Computer Applications & Research - Int. Conf. on Signal Processing and Remote Sensing (ICSPRS' 2015), 21-23 March 2015, Rome, Italy.
18. A. Harmouch, M. Ziadé, H. Haddad, **R. Achkar**, H. Baytieh, W. Kamali, A. Elrafhi, and R. Barake. "On the Miniaturization of Cylindrical Omnidirectional Slotted Waveguide Antennas for Wireless Applications". The Third International Conference on Digital Information, Networking, and Wireless Communications (DINWC2015), 3-5 February 2015, Moscow, Russia, pp. 44-48.
19. **R. Achkar**, G. Abou Kasam, and H. Khoury. "3D Simulator using Zorb Ball". 8th IEEE European Modeling Symposium EMS 2014, 21-22 October 2014, Pisa, Italy, pp. 344-347.
20. **R. Achkar**, G. Abou Haidar, R. Abou Dayya, A. Salloum, and K. Daoud. "Remote Generator Control using Android Applications". 8th IEEE International Conference on Mathematical

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21. G. Abu Haidar, **R. Achkar**, R. Maalouf, B. Mcheik, H. Allam, and M. Abdul Rahim, "Smart Walker". 11th IEEE International Conference on Mobile Web Information Systems (MobiWIS 2014), 27-29 August 2014, Barcelona, Spain, pp. 415-419.
22. N. Halabi, **R. Achkar**, and G. Abu Haidar. "The Effect of Cell Phone Antenna's Radiations on the Life Cycle of Honeybees". 17th IEEE Mediterranean Electrotechnical Conference - Information & Communication Systems, Beirut, Lebanon, April 2014, pp. 408-414.
23. M. Owayjan, G. Freiha, **R. Achkar**, E. Abdo, and S. Mallah. "Firoxio: Forest Fire Detection and Alerting System". 17th IEEE Mediterranean Electrotechnical Conference - Information & Communication Systems, Beirut, Lebanon, April 2014, pp. 177-181.