

CURRICULUM VITAE

DR. WEI LEE WOON

Associate Professor, Computer Science,
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PERSONAL DETAILS

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Citizenship: Malaysian

EDUCATION

- 2002 Aston University, UK; Ph.D Neural Computing (NCRG, School of Engineering and Applied Science).
Thesis: *Analysis of Magnetoencephalographic Data as a Nonlinear Dynamical System*;
Supervisor: Prof. David Lowe.
- 1997 The University of Manchester, UK; B.Eng Electrical Engineering, Hons (1st Class).
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WORK EXPERIENCE

- 2012-present Associate Professor, Masdar Institute of Science and Technology, Abu Dhabi, UAE
- 2010-2011 Research Affiliate, Massachusetts Institute of Technology, USA
- 2007-2011 Assistant Professor, Masdar Institute of Science and Technology, UAE
- 2007-2008 Visiting Scholar, Massachusetts Institute of Technology, USA
- 2006 (Summer) Visiting Researcher, Advanced Brain Signal Processing Group, RIKEN BSI, Japan
- 2002-2007 Assistant Professor, Malaysia University of Science and Technology, Malaysia
- 2000-2001 System administrator, NCRG, Aston University. Jointly responsible for the upkeep of a heterogeneous network including Linux, SunOS, IRIX and Windows 2000 machines.
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FUNDED RESEARCH PROJECTS (LAST 3 YEARS)

- 2017 *“Predictive Shimming” (phase 2)*
Role: Principal Investigator
Source: Industrial
Amount: USD180,000

- 2017 “Masdar Institute IoT Campus: Application to Public Health and City Occupancy”
Role: Co-Investigator
Source: Co-funded (Industrial/MI)
Amount: USD2,200,000
- 2015 “Predictive Shimming”
Role: Co-Investigator
Source: Industrial
Amount: USD200,000
- 2015 “Economic Impact of Technology and Automation”
Role: Co-Investigator
Source: MI/MIT Collaborative Research Grant
Amount: USD184,537
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PUBLICATIONS (LAST 3 YEARS)

Books and Edited Volumes

- [1] Wei Lee Woon, Zeyar Aung, Oliver Kramer, and Stuart Madnick (Eds). Data analysis for renewable energy integration: 4th ECML PKDD workshop, DARE 2016, Riva del Garda, Italy, September 23, 2016, revised selected papers. volume 10097. Springer, 2017.
- [2] Wei Lee Woon, Zeyar Aung, and Stuart E. Madnick (Eds). Data Analytics for Renewable Energy Integration - third ECML PKDD workshop, DARE 2015, Porto, Portugal, September 11, 2015, Revised Selected Papers. Lecture Notes in Artificial Intelligence. Springer, 2015. (In Press).
- [3] Wei Lee Woon, Zeyar Aung, and Stuart E. Madnick (Eds). Data Analytics for Renewable Energy Integration - second ECML PKDD workshop, DARE 2014, Nancy, France, September 19, 2014, Revised Selected Papers. volume 8817 of *Lecture Notes in Computer Science*. Springer, 2014.

Journal Articles

- [1] Sokratis Papadopoulos, Elie Azar, Wei Lee Woon, and Constantine Kontokosta. Evaluation of tree-based ensemble learning algorithms for building energy performance estimation. *Journal of Building Performance Simulation*, in press, 2017.
- [2] Rasha Alshehhi, Prashanth Reddy Marpu, Wei Lee Woon, and Mauro Dalla Mura. Simultaneous extraction of roads and buildings in remote sensing imagery with convolutional neural networks. *ISPRS Journal of Photogrammetry and Remote Sensing*, 130:139–149, 2017.
- [3] Ioannis Karakatsanis, Wala AlKhader, Frank MacCrory, Armin Alibasic, Mohammad Atif Omar, Zeyar Aung, and Wei Lee Woon. Data mining approach to monitoring the requirements of the job market: A case study. *Information Systems*, 65:1–6, 2017.
- [4] Bijay Neupane, Wei Lee Woon, and Zeyar Aung. Ensemble prediction model with expert selection for electricity price forecasting. *Energies*, 10(1):77, 2017.
- [5] Fatemeh Jahedpari, Talal Rahwan, Sattar Hashemi, Tomasz P Michalak, Marina De Vos, Julian Padget, and Wei Lee Woon. Online prediction via continuous artificial prediction markets. *IEEE Intelligent Systems*, 32(1):61–68, 2017.

- [6] E. Casagrande, E. Arnautovic, W. L. Woon, H. H. Zeineldin, and D. Svetinovic. Semiautomatic system domain data analysis: A smart grid feasibility case study. *IEEE Transactions on Systems, Man, and Cybernetics: Systems*, PP(99):1–11, 2016.
- [7] Wei Lee Woon, Ayman El-Hag, and Mustafa Harbaji. Machine learning techniques for robust classification of partial discharges in oil–paper insulation systems. *IET Science, Measurement & Technology*, 10(3):221–227, 2016.
- [8] Rasha Al Shehhi, Prashanth Reddy Marpu, and Wei Lee Woon. An automatic cognitive graph-based segmentation for detection of blood vessels in retinal images. *Mathematical Problems in Engineering*, 2016, 2016.
- [9] E. Casagrande, S. Woldeamlak, W.L. Woon, H.H. Zeineldin, and D. Svetinovic. NLP-KAOS for systems goal elicitation: Smart metering system case study. *Software Engineering, IEEE Transactions on*, 40(10):941–956, Oct 2014.
- [10] Richard Oentaryo, Ee-Peng Lim, Feida Zhu, David Lo, Michael Finegold, Clifton Phua, Eng-Yeow Cheu, Ghim-Eng Yap, Kelvin Sim, Minh-Nhut Nguyen, Kasun Perera, Bijay Neupane, Mustafa Faisal, Zeyar Aung, Wei Lee Woon, Chen Wei, Dhaval Patel, and Daniel Berrar. Detecting fraudulent patterns in online advertising: A data mining approach. *Journal of Machine Learning Research*, 15(1):99–140, 2014.

Conference Articles

- [1] W.L. Woon, S. Oehmcke, and O. Kramer. Spatio-temporal wind power prediction using recurrent neural networks. In *24th International Conference on Neural Information Processing (ICONIP 2017)*. Springer (LNCS), Guangzhou, China, November 2017.
- [2] Wei Lee Woon and Oliver Kramer. Enhanced SVR ensembles for wind power prediction. In *International Joint Conference on Neural Networks (IJCNN)*, Vancouver, Canada, July 2016. International Neural Network Society, IEEE.
- [3] W.L. Woon, K.D. Wong, Z. Aung, and D. Svetinovic. Changes in occupational skills - a case study using non-negative matrix factorization. In *22nd International Conference on Neural Information Processing (ICONIP 2015)*. Springer (LNCS), Istanbul, Turkey, November 2015.
- [4] M. Dina, W.L. Woon, and Z. Aung. Soil property prediction: An extreme learning machine approach. In *22nd International Conference on Neural Information Processing (ICONIP 2015)*. Springer (LNCS), Istanbul, Turkey, November 2015.
- [5] B. Joshi, P. Budhathoki, W.L. Woon, and D. Svetinovic. Software clone detection using clustering approach. In *22nd International Conference on Neural Information Processing (ICONIP 2015)*. Springer (LNCS), Istanbul, Turkey, November 2015.
- [6] P.-J. Chang, W. L. Woon, T. Rahwan, B. Leveck, and I. Rahwan. Temporal trends in international relations from event data. In *International School & Conference on Network Science (NetSci)*, Zaragoza, Spain, 2015.
- [7] Dina Masri, Hatem Zeineldin, and Wei Lee Woon. Electricity price and demand forecasting under smart grid environment. In *Environment and Electrical Engineering (EEEIC), 2015 IEEE 15th International Conference on*, pages 1956–1960, Rome, Italy, 2015. IEEE.

- [8] Prajowal Manandhar, Zeyar Aung, Wei Lee Woon, and Prashanth Marpu. Random forest ensemble learning for object recognition using rgb features along object edge. In *4th International Conference on Communications and Information Technology (ICCIT)*. IEEE, Abu Dhabi, UAE, 2015.
- [9] Dina Masri, Zeyar Aung, and Woon Wei Lee. Image classification using appearance based features. In *IEEE International Conference on Innovations in Information Technology (IIT)*. IEEE, Dubai, UAE, 2015.
- [10] Nadyah Obaid Al Abdouli, Zeyar Aung, Wei Lee Woon, and Davor Svetinovic. Tackling class imbalance problem in binary classification using augmented neighborhood cleaning algorithm. In *Information Science and Applications*, pages 827–834. Springer, 2015.
- [11] W.L. Woon, K.D. Wong, Z. Aung, and D. Svetinovic. Document versioning using feature space distances. In *21st International Conference on Neural Information Processing (ICONIP 2014)*. Springer (LNCS), Kuching, Malaysia, November 2014.
- [12] M.A. Faisal, Z. Aung, W.L. Woon, and D. Svetinovic. Augmented query strategies for active learning in stream data mining. In *21st International Conference on Neural Information Processing (ICONIP 2014)*. Springer (LNCS), Kuching, Malaysia, November 2014.
- [13] W.L. Woon, Z. Aung, and S.E. Madnick. Forecasting and visualization of renewable energy technologies using keyword taxonomies. In *ECML/PKDD International Workshop on Data Analytics for Renewable Energy Integration*. Springer (LNAI), Nancy, France, 2014.
- [14] B. Joshi, B. Hayk, A. Al-Hinai, and W.L. Woon. Rooftop detection for planning of solar pv deployment: a case study in abu dhabi. In *ECML/PKDD International Workshop on Data Analytics for Renewable Energy Integration*. Springer (LNAI), Nancy, France, 2014.
- [15] K. Perera, Z. Aung, and W.L. Woon. Machine learning techniques for supporting renewable energy generation and integration: A survey. In *ECML/PKDD International Workshop on Data Analytics for Renewable Energy Integration*. Springer (LNAI), Nancy, France, 2014.
- [16] B. Joshi, H. Baluyan, A. Al-Hinai, and W.L. Woon. Automatic rooftop detection using a two-stage classification. In *UKSim-AMSS 16th International Conference on Modelling and Simulation - UKSIM 2014 (IEEE)*, Cambridge, UK, 26 - 28 March 2014.
- [17] Nengbao Liu, Wei Lee Woon, Zeyar Aung, and Afshin Afshari. Handling class imbalance in customer behavior prediction. In *Collaboration Technologies and Systems (CTS), 2014 International Conference on*, pages 100–103. IEEE, 2014.

Selected Technical Reports, Presentations and Articles

- [1] Wei Lee Woon. Data mining in renewable energy: Coping with uncertainty and complexity. In *WSIRE (Keynote Speech)*, Delmenhorst, Germany, 2015. University of Oldenburg.
- [2] Wei Lee Woon. Technology visualization. In *International Workshop on Software Engineering for Smart Cities*, Masdar City, Abu Dhabi, UAE, April 2014.

AWARDS AND HONORS

- Invited to the Dagstuhl Workshop *Cognitive Approaches for the Semantic Web*, Schloss Dagstuhl, Germany, May 2012.

- Masdar Institute *Award for Excellence in Collaborative Research* (annual award), 2012
- Second Prize, Competition on Fraud Detection in Mobile Advertising - held in conjunction with the 4th Asian Conference on Machine Learning (ACML'12), 2012.
- Award for *Best Research Presentation*, Aston University, UK, 2000.
- EPSRC Project Studentship (UK), 1998-2002.

PROFESSIONAL ACTIVITIES (LAST 3 YEARS)

Membership of Professional Bodies

- IEEE (Institution of Electrical and Electronic Engineers) - Professional Member
- ACM (Association of Computing Machinery) - Professional Member

Services and Activities

- IEEE Neural Networks Technical Committee, IEEE Computational Intelligence Society (member since 2017)
- Program Committee, AAAI 2017, San Francisco, California, USA, 2017
- Program Committee, International Joint Conference on Artificial Intelligence (IJCAI-17), Melbourne, Australia, 2017.
- Program Co-Chair, ECML-PKDD 2015 4th International Workshop on Data Analytics for Renewable Energy Integration (DARE'16), Riva Del Garda, Italy, 2016
- Program Committee, AAAI 2016, Phoenix, Arizona, USA, 2016.
- Program Co-Chair, ECML-PKDD 2015 3rd International Workshop on Data Analytics for Renewable Energy Integration (DARE'15), Porto, Portugal, 2015
- Program Committee, AAAI 2015, Austin, Texas, USA, 2015.
- Program Committee, International Joint Conference on Artificial Intelligence (IJCAI-15), Buenos Aires, Argentina, 2015
- Panelist on “Big Data and Disruptive Technologies”, SmartCon 2015, Dubai, UAE.
- Session Chair on “Artificial Intelligence and Neural Networks-Theory, Design and Applications”, ICONIP-15, Istanbul, Turkey, 2015.
- Program Co-Chair, ECML-PKDD 2014 2nd International Workshop on Data Analytics for Renewable Energy Integration (DARE'14), Nancy, France, 2014
- Track Chair (Computing and IT), Technical Program Committee, 8th IEEE GCC Conference and Exhibition, Muscat, Oman, 2014.
- Served on a variety of institute and departmental committees including the PhD admissions committee, student affairs committee, academic performance committee, IT committee, IT program search committee and the steering committee for Student Information System.

- Served as reviewer for numerous international journals and conferences such as: IEEE Transactions on Knowledge and Data Engineering, IEEE Transactions on Smart Grid IEEE Transactions on Biomedical Engineering, IEEE Transactions on Cybernetics IEEE Transactions on Power Delivery The Knowledge Engineering Review (Cambridge) Technological Forecasting and Social Change (Elsevier), Computer Methods and Programs in Biomedicine (Elsevier), Pattern Recognition Letters (Elsevier), International Transactions on Electrical Energy Systems (Wiley), Stress and Health (Wiley), Neural Computing and Applications (Springer), Technology Analysis and Strategic Management (Taylor and Francis), Computational Intelligence and Neuroscience (Hindawi), Multimedia Cyberscape Journal (MMU, Malaysia), International Journal of Artificial Intelligence and Soft Computing (Inderscience), European Signal Processing Conference.