

Mohamed Reda Bouadjenek – Ph.D, Lecturer in Applied AI

Contact	Address: Deakin University, School of Information Technology Office: KA5.201.W26 Campus: Geelong Waurin Ponds Campus 75 Pigdons Rd, Waurin Ponds VIC 3216, Australia Tel: +61 352 278 380 E-mail: rbouadjenek@gmail.com (Perso) reda.bouadjenek@deakin.edu.au (Pro) WWW: https://rbouadjenek.github.io/																		
Citizenship	Algerian Citizen; French Citizen; Canadian Permanent Resident; Australian Permanent Resident.																		
Interests	Information Retrieval, Biomedical Text Mining, Social Network Analysis, Machine Learning, Deep Learning, Recommender Systems, Databases, Data Quality, and Data Analysis.																		
Education	<p>Deakin University, Geelong, Australia Graduate Certificate of Higher Education for Learning and Teaching (Jun. 2021)</p> <p>University of Paris-Saclay, Versailles, France Ph.D., Computer Science (Dec. 2013) • Supervisors: Mokrane Bouzeghoub and Hakim Hacid • Research Field: <i>Information Retrieval and Machine Learning</i></p> <p>University of Paris-Saclay, Versailles, France M.S., Computer Science (Sep. 2009) • Supervisors: Mokrane Bouzeghoub • Major: <i>Databases and Distributed Information Systems</i></p> <p>University of Sciences and Technology Houari Boumediene, Algiers, Algeria B.S., Computer Science (Jun. 2008) • Major: <i>Databases and Information Systems</i></p>																		
Employment	<table><tr><td>Deakin University, Geelong, VIC, Australia. • <i>Lecturer (Assistant Professor)</i>, Applied Artificial Intelligence.</td><td>Nov. 2019 – Present</td></tr><tr><td>University of Toronto, Toronto, ON, Canada. • <i>Research Fellow</i>. Supervisor: Scott Sanner.</td><td>Nov. 2017 – Oct. 2019</td></tr><tr><td>The University of Melbourne, Melbourne, VIC, Australia. • <i>Research Fellow</i>. Supervisor: Karin Verspoor and Justin Zobel.</td><td>Sep. 2015 – Sep. 2017</td></tr><tr><td>Oregon State University, Corvallis, OR, USA. • <i>Visiting Researcher</i>. Supervisor: Scott Sanner.</td><td>Jul. 2015 – Aug. 2015</td></tr><tr><td>INRIA, Montpellier, France. • <i>Postdoc Researcher</i>. Supervisors: Esther Pacitti and Patrick Valduriez.</td><td>Jan. 2014 – Jul. 2015</td></tr><tr><td>UCSB, Santa Barbara, CA, USA. • <i>Visiting Researcher</i>. Supervisor: Amr El Abbadi.</td><td>Nov. 2014 – Dec. 2014</td></tr><tr><td>NICTA, Canberra, ACT, Australia. • <i>Visiting Researcher</i>. Supervisor: Scott Sanner.</td><td>Aug. 2013 – Dec. 2013</td></tr><tr><td>Alcatel-Lucent Bell Labs, Nozay, France. • <i>Research Engineer</i>. Supervisor: Hakim Hacid.</td><td>Mar. 2010 – Mar. 2013</td></tr><tr><td>DAVID Lab, University of Paris-Saclay, Versailles, France. • <i>Master Student Internship</i>. Supervisor: Mokrane Bouzeghoub.</td><td>Apr. 2009 – Sep. 2009</td></tr></table>	Deakin University , Geelong, VIC, Australia. • <i>Lecturer (Assistant Professor)</i> , Applied Artificial Intelligence.	Nov. 2019 – Present	University of Toronto , Toronto, ON, Canada. • <i>Research Fellow</i> . Supervisor: Scott Sanner.	Nov. 2017 – Oct. 2019	The University of Melbourne , Melbourne, VIC, Australia. • <i>Research Fellow</i> . Supervisor: Karin Verspoor and Justin Zobel.	Sep. 2015 – Sep. 2017	Oregon State University , Corvallis, OR, USA. • <i>Visiting Researcher</i> . Supervisor: Scott Sanner.	Jul. 2015 – Aug. 2015	INRIA , Montpellier, France. • <i>Postdoc Researcher</i> . Supervisors: Esther Pacitti and Patrick Valduriez.	Jan. 2014 – Jul. 2015	UCSB , Santa Barbara, CA, USA. • <i>Visiting Researcher</i> . Supervisor: Amr El Abbadi.	Nov. 2014 – Dec. 2014	NICTA , Canberra, ACT, Australia. • <i>Visiting Researcher</i> . Supervisor: Scott Sanner.	Aug. 2013 – Dec. 2013	Alcatel-Lucent Bell Labs , Nozay, France. • <i>Research Engineer</i> . Supervisor: Hakim Hacid.	Mar. 2010 – Mar. 2013	DAVID Lab , University of Paris-Saclay , Versailles, France. • <i>Master Student Internship</i> . Supervisor: Mokrane Bouzeghoub.	Apr. 2009 – Sep. 2009
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External Grant Funding

- **PI, Deakin Science & Society Network (2023).**
Title: *Cold-start Contract Cheating Identification from Side Information Using Latent Linear Writing Style Representation* (AUD\$12K).
- **Co-PI, US Air Force Office of Scientific Research (AFOSR), Asian Office of Aerospace Research and Development (2022).**
Title: *Machine Learning in Heterogeneous Data from Multiple Sources* (USD\$225K).
- **PI, Community Bank at Deakin University (2022).**
Title: *Deakin AI Challenge 2022* (AUD\$3,000).
- **PI, Deakin University, School of Information Technology under the SIT Industry Engagement and Demonstrators Grant (2021).**
Title: *Conversational Interface for Context-aware Systems 2021*, (AUD\$7,500).
- **PI, Deakin University, School of Information Technology under the SIT Research Program Initialisation Grant (2021).**
Title: *IoT-enabled Conversational System for Explainable Situational Awareness*, (AUD\$15,000).
- **Co-PI, Defence Science and Technology: AI for Decision Making Initiative (2021).**
Title: *Utilizing Extractive-Abstractive Summarization for Understanding the Narrative of Social Media Users from Multimodal Data* (AUD\$20K).
- **PI, Community Bank at Deakin University (2021).**
Title: *Deakin AI Challenge 2021* (AUD\$1,000).
- **Ontario Center of Excellence Postdoctoral Fellowship (2018-2019).**
Title: *Machine Learning, Sentiment, and Social Media Analysis for Financial Analytics* (CAD\$50K).
- **Inria@SiliconValley Postdoctoral Fellowship, BIGDATANET associate team (UC Santa Barbara, ZENITH- Inria Sophia Antipolis). (2014-2015).**
Title: *Analysis and Infrastructure of Distributed Recommender Systems* (EUR€47K).

Awards and Honors

- **Deakin Vice-Chancellor's Award for Outstanding Contribution to Environmental Sustainability, 2022.**
This award recognises excellent contribution to the AI Competition for Sustainable Development Goals and the advancement of the University's Strategic Plan, Deakin 2030: Ideas to Impact.
- **Best Demo Paper at the 23rd IEEE International Conference on Mobile Data Management (MDM), 2022.**
Title: "Jarvis: A Voice-based Context-as-a-Service Mobile Tool for a Smart Home Environment".

Selected Publications

1. M. R. Bouadjenek, S. Sanner, and G. Wu, "**A User-Centric Analysis of Social Media for Stock Market Prediction**", Accepted at *ACM Transaction on The Web (TWeb)*, 2022.
2. T. Boone-Sifuentes, M.R. Bouadjenek, I. Razzak, H. Hacid, and A. Nazari: "**A Mask-based Output Layer for Multi-level Hierarchical Classification**", in *The 31st ACM International Conference on Information and Knowledge Management (CIKM)*, 3833-3837, 2022.
3. T. Boone-Sifuentes, A. Nazari, I. Razzak, M.R. Bouadjenek, A. Robles-Kelly, D. Ierodionou, and E. Oh: "**Marine-tree: large-scale marine organisms dataset for hierarchical image classification**", in *The 31st ACM International Conference on Information and Knowledge Management (CIKM)*, 3838-3842, 2022.
4. Z. Gao, T. Shen, Z. Mai, M.R. Bouadjenek, I. Waller, A. Anderson, R. Bodkin, and S. Sanner, "**Mitigating the Filter Bubble while Maintaining Relevance: Targeted Diversification with VAE-based Recommender Systems**", In *The 45th International ACM SIGIR Conference on Research and Development in Information Retrieval (SIGIR)*, 2524-2531, 2022.
5. K. Lefevre, C. Arora, K. Lee, A. Zaslavsky, M.R. Bouadjenek, A. Hassani, and I. Razzak, "**ModelOps for Enhanced Decision-Making and Governance in Emergency Control Rooms**", In *The 30th IEEE International Conference on Requirements Engineering*, 2022.
6. S. Gupta, M.R. Bouadjenek, and A. Robles-Kelly, "**An Analysis of Logic Rule Dissemination in Sentiment Classifiers**", In *The Conference and Labs of the Evaluation Forum (CLEF)*, 1-8, 2022.
7. M.R. Bouadjenek, S. Sanner, Z. Iman, L. Xie, and X. Shi. "**A Longitudinal Study of Topic Classification on Twitter**", In *PeerJ Computer Science*, 2022.
8. N.D. Huynh, M.R. Bouadjenek, A. Hassani, I. Razzak, K. Lee, C. Arora, and A. Zaslavskya, "**Jarvis: A Voice-based Context-as-a-Service Mobile Tool for a Smart Home Environment**", In *The 23rd IEEE International Conference on Mobile Data Management (MDM)*, 318-312, 2022. [Best Demo Paper Award]
9. I. Razzak, S. Naz, A. Ashraf, F. Khalifa, M.R. Bouadjenek, and S. Mumtaz, "**Mutliresolutional ensemble PartialNet for Alzheimer detection using MR imaging data**", In *International*

- Journal of Intelligent Systems*, 1-18, 2022.
10. K. Lefevre, C. Arora, K. Lee, A. Zaslavsky, M.R. Bouadjenek, A. Hassani, and I. Razzak, “**ModeIOps for Enhanced Decision-Making and Governance in Emergency Control Rooms**”, In *Environment Systems and Decisions*, 2022.
 11. S. Lyu, A. Rana, S. Sanner, and M.R. Bouadjenek, “**A Workflow Analysis of Context-driven Conversational Recommendation**”, In *Proceedings of The Web Conference (WWW)*, 866–877, 2021.
 12. A. Qayyum, M. Mazhar, I. Razzak, and M.R. Bouadjenek, “**Multilevel depth-wise context attention network with atrous mechanism for segmentation of COVID19 affected regions**”, In *Neural Computing and Applications*, 2021.
 13. M. R. Bouadjenek, S. Sanner, and Y. Du, “**Relevance- and Interface-driven Clustering for Visual Information Retrieval**”, In *Information Systems*, Vol 94, 101592, 2020.
 14. S. Gupta, A. Robels-Kelly, and M.R. Bouadjenek, “**Feature Extraction Functions for Neural Logic Rule Learning**”, In *Structural, Syntactic, and Statistical Pattern Recognition (S+SSPR)*, 98–107, 2020.
 15. B. Zhang, S. Sanner, M. R. Bouadjenek, and S. Gupta, “**Bayesian Networks for Data Integration in the Absence of Foreign Keys**”, In *IEEE Transactions on Knowledge and Data Engineering*, Vol 32, 803–808, 2020.
 16. S. Gupta, D. Ko, M.R. Bouadjenek, and S. Sanner, A. Chong, P. Austin, and M. Koh, “**Evaluation of Machine Learning Algorithms for Predicting Readmission after Acute Myocardial Infarction Using Routinely Collected Clinical Data**”, In *Canadian Journal of Cardiology*, Vol 36, 878–885, 2020.
 17. M. R. Bouadjenek, J. Zobel, and K. Verspoor, “**Automated Assessment of Biological Database Assertions Using the Scientific Literature**”, In *BMC Bioinformatics*, Vol 20, 216, 2019.
 18. Y. Wang, G. Wu, M.R. Bouadjenek, and S. Sanner, “**A Novel Regularizer for Temporally Stable Learning with an Application to Twitter Topic Classification**”, In *The SIAM International Conference on Data Mining (SDM)*, 217–225, 2019.
 19. M. R. Bouadjenek, H. Hacid, and M. Bouzeghoub, “**Personalized Social Query Expansion Using Social Annotations**”, In *Transactions on Large-Scale Data- and Knowledge-Centered Systems*, Vol 11360, 1–25, 2019.
 20. G. Wu, M. R. Bouadjenek, and S. Sanner, “**One-Class Collaborative Filtering with the Queryable Variational Autoencode**”, In *The 42nd International ACM SIGIR Conference on Research and Development in Information Retrieval (SIGIR)*, 921–924, 2019.
 21. M. R. Bouadjenek, and S. Sanner, “**Relevance-driven Clustering for Visual Information Retrieval on Twitter**”, In *The 4th ACM Conference on Human Information Interaction & Retrieval (CHIIR)*, 349–353, 2019.
 22. M.R. Bouadjenek, E. Pacitti, F. Massegli, and A. El Abbadi, “**A Distributed Collaborative Filtering Algorithm Using Multiple Data Sources**”, In *10th International Conference on Advances in Databases, Knowledge, and Data Applications (DBKDA)*, 2018.
 23. M. R. Bouadjenek and K. Verspoor, “**Multi-Field Query Expansion is Effective for Biomedical Dataset Retrieval**”, In *Database: The Journal of Biological Databases and Curation (Oxford)*, Vol 2017, bax062, 2017.
 24. M. R. Bouadjenek, K. Verspoor, and J. Zobel, “**Learning Biological Sequence Types Using the Literature**”, In *The Proceedings of the 26th ACM Conference on Information and Knowledge Management (CIKM)*, 1991–1994, 2017.
 25. M. R. Bouadjenek, K. Verspoor, and J. Zobel, “**Automated Detection of Records in Biological Sequence Databases that are Inconsistent with the Literature.**”, In *Journal of Biomedical Informatics*, Volume 71, 229–240, 2017.
 26. M. R. Bouadjenek, K. Verspoor, and J. Zobel, “**Literature Consistency of Bioinformatics Sequence Databases is Effective for Assessing Record Quality**”, In *Database: The Journal of Biological Databases and Curation (Oxford)*, Vol 2017, bax021, 2017.
 27. Z. Iman, S. Sanner, M. R. Bouadjenek, and L. Xie, “**A Longitudinal Study of Topic Classification on Twitter**”, In *The 11th International AAAI Conference on Web and Social Media (ICWSM)*, 552–555, 2017.
 28. M. R. Bouadjenek, H. Hacid, M. Bouzeghoub, and A. Vakali, “**PerSaDoR: Personalized Social Document Representation for Improving Web Search**”, In *Information Sciences*, Vol 369, 614–633, 2016.
 29. M. R. Bouadjenek, H. Hacid, and M. Bouzeghoub, “**Social Networks and Information Retrieval, How Are They Converging? A Survey, a Taxonomy and an Analysis of Social Information Retrieval Approaches and Platforms**”, In *Information Systems*, Vol 56, 1–18, 2016.

30. M. Golestan Far, S. Sanner, M. R. Bouadjenek, and G. Ferraro, “**On Term Selection Techniques for Patent Prior Art Search**”, In *The 38th international ACM SIGIR conference on Research and development in information retrieval (SIGIR)*, 803-806, 2015.
31. M. R. Bouadjenek, S. Sanner, and G. Ferraro, “**A Study of Query Reformulation for Patent Prior Art Search with Partial Patent Applications**”, In *The 15th International Conference on Artificial Intelligence and Law (ICAIL)*, 23–32, 2015.
32. M. R. Bouadjenek, H. Hacid, and M. Bouzeghoub, “**LAICOS: An Open Source Platform for Personalized Social Web Search**”, In *The 19th ACM SIGKDD Conference on Knowledge Discovery and Data Mining (KDD)*, 1446-1449, 2013.
33. M. R. Bouadjenek, H. Hacid, M. Bouzeghoub, and A. Vakali, “**Using social annotations to enhance document representation for personalized search**”, In *The 36th international ACM SIGIR conference on Research and development in information retrieval (SIGIR)*, 1049-1052, 2013.
34. M. R. Bouadjenek, H. Hacid, and M. Bouzeghoub, “**SoPRa: a new social personalized ranking function for improving web search**”, In *The 36th international ACM SIGIR conference on Research and development in information retrieval (SIGIR)*, 861-864, 2013.
35. M. R. Bouadjenek, A. Bennamane, H. Hacid, and M. Bouzeghoub, “**Evaluation of personalized social ranking functions of information retrieval**”, In *The 13th International Conference on Web Engineering (ICWE)*, 283-290, 2013.
36. M. R. Bouadjenek, H. Hacid, M. Bouzeghoub, and J. Daigremont, “**Personalized social query expansion using social bookmarking systems**”, In *The 34th international ACM SIGIR conference on Research and development in Information Retrieval (SIGIR)*, 1113-1114, 2011.
37. Y. Lassoued, M.R. Bouadjenek, O. Boucelma, F. Lemos, and M. Bouzeghoub, “**GQBox: geospatial data quality assessment**”, In *The 18th SIGSPATIAL International Conference on Advances in Geographic Information Systems (GIS)*, 534-535, 2010.

Supervision Postdoctoral Researchers

- Zafaryab Rasool, *Unsupervised Machine Learning for Clustering Heterogenous Data* (post-doc at Deakin University; June 2021-June 2022)

PhD Students

- Ngoc Dung Huynh, *Understanding Linguistic Feature Encoding in Transformers for Multilingual Question Answering Systems* (Deakin University, graduates 2025+)
- Echo Zhou, *Investigating New Deep Learning Models for Visual Question Answering* (Deakin University, graduates 2025+)
- Dhiraj Neupane, *Machine Learning for Clustering Heterogenous Data* (Deakin University, graduates 2025+)
- Khondaker Tasrif Noor, *Multi-level Hierarchical Classification* (Deakin University, graduates 2024+)
- Tanya Boone-Sifuentes, *Investigating Multi-level Hierarchical Classification Algorithms* (Deakin University, graduates 2023+)
- Shashank Gupta, *Logic Rule Dissemination Consistency Assessment in Sentiment Classification* (Deakin University, graduates 2023+)

Masters Students

- Ngoc Dung Huynh, *Speech-to-CDQL: Context Definition and Query Language from Natural Language for Smart Home Environment* (Deakin University, graduated 2022)
- Yihao Du, *Relevance-driven Clustering Methods for Visual Interactive Search* (Deakin University, graduated 2019)

Event

Organization

- ICSOC 2021 Workshop Co-Chairs; Dubai, UAE.
- ICSOC 2020 Tutorial/Panel Co-Chairs; Dubai, UAE.
- Deakin Simpsons Challenge 2022.
- Deakin Simpsons Challenge 2021.

Professional Activities

Journal Reviewing

- Knowledge and Information Systems.
- Information Retrieval Journal.

- Information Processing & Management.
- Neurocomputing Journal.
- Artificial Intelligence Journal.

Conference Program Committees

- International Conference on Web Information Systems Engineering (WISE) (2018, 2021, 2022).
- ACS/IEEE International Conference on Computer Systems and Applications AICCSA (2022).
- Association for the Advancement of Artificial Intelligence (AAAI) (2019, 2022).
- IEEE International Workshop on Machine Learning for Signal Processing (2021).

Teaching Activities

Courses Taught

- | | |
|--|-----------------------------|
| • Human Alligned AI , Deakin University. | Winter 2020-2022 |
| • Introduction to Programming , Deakin University. | Fall and Winter 2022 |
| • Deep Learning , Deakin University. | Fall 2020-2021 |
| • Research and Developement in IT , Deakin University. | Fall 20210-2021 |
| • Decision Support Systems , University of Toronto. | Winter 2019 |
| • Formal specifications and introduction to UML , UVSQ. | Winter 2011-2012 |
| • Conception of Databases , UVSQ. | Winter 2009-2010 |

Course developement

- **SIT330: Natural Language Processing**, Deakin University 2023.
- **SIT799: Human Alligned AI**, Deakin University 2020.

References

- **Prof. Scott Sanner**, University of Toronto, Canada: ssanner@mie.utoronto.ca
- **Prof. Karin Verspoor**, RMIT University, Australia: karin.verspoor@rmit.edu.au
- **Prof. Hakim Hacid**, Technology Innovation Institute (TII), UAE: hakim.hacid@tii.ae
- **Prof. Mokran Bouzeghoub**, University Versailles/CNRS, France: mokrane.bouzeghoub@uvsq.fr