

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

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

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

##### 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