RESUME/ CURRICULUM VITAE

Name: Mohammed Abdulrahman Alliheedi

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staff profile homepage: Web Page, Linkedin

Nationality: Saudi

WORK EXPERIENCE

- Assistant Professor in the Faculty of Computer Science and Information Technology at Al Baha University, Saudi Arabia — 2019 - Present
- Lecturer in the Faculty of Computer Science and Information Technology at Al Baha University, Saudi Arabia — 2015 - 2019
- Teaching Assistant, University of Waterloo, Canada — 2013 - 2013
- Demonstrator in the Faculty of Computer Science and Information Technology at Al Baha University, Saudi Arabia. — 2008 - 2015
- Demonstrator in the Faculty of Science, at Umm Al Qura University in Al Baha, Saudi Arabia. — 2007 –2008
- Oracle Developer, Al-Noor Hospital, Saudi Arabia — 2007 –2007
- Network Analyst, International Business Machine (IBM), Saudi Arabia. — 2006 - 2006

OTHER RELEVANT EXPERIENCE/PROJECTS

- The Knowledge Engineering Project for Biotech Innovation
- The RhetFig Project for Persuasive Technologies
- The Inkpot Project for Personalized Health Related Materials

AREA OF INTEREST/RESEARCH & APPLICATION

- Bioinformatics and Biomedical Informatics
- Rhetorical Figure Analysis
- Argumentation Mining
- Persuasive Technology

PUBLICATIONS

- Johnson, T., Alliheedi, M., Wang, Y. & Mercer, R. E. (2023). **Addressing Entity Change in Procedural Ontologies**. In *Proceedings of the 15th International Joint Conference on Knowledge Discovery, Knowledge Engineering and Knowledge Management - Volume 2: KEOD* (pp. 280-287). SciTePress. doi: 10.5220/0012239900003598

- Leaman, R., Islamaj, R., Adams, V., Alliheedi, M. A., Almeida, J. R., Antunes, R., ... & Lu, Z. (2023). **Chemical identification and indexing in full-text articles: an overview of the NLM-Chem track at BioCreative VII**. *Database: The Journal of Biological Databases and Curation,* (Oxford). doi:10.1093/database/baad005

- Alzhrani, R. M., & Alliheedi, M. A. (2023). **5G Networks and IoT Devices: Mitigating DDoS Attacks with Deep Learning Techniques.** *arXiv e-prints, arXiv-2311.*

- Alshmarni, A. F., & Alliheedi, M. A. (2023). **Enhancing Malware Detection by Integrating Machine Learning with Cuckoo Sandbox.** *arXiv e-prints, arXiv-2311.*

- Mercer, R. E., & Alliheedi, M. (2021). **Rule-based enhancement of Stanza NER**. In *BioCreative VII Challenge Evaluation Workshop* (pp. 124-126). Retrieved https://biocreative.bioinformatics.udel.edu/media/store/files/2021/TRACK2

- Alliheedi, M., & Mercer, R. E. (2020). **Semantic Search for Biomedical Texts using Predicate-Argument Structure**. In *Proceedings of the 12th International Joint Conference on Knowledge Discovery, Knowledge Engineering and Knowledge Management - Volume 2: KEOD* (pp. 299-306). INSTICC. doi:10.5220/0010150702990306

- Alliheedi, M., Wang, Y., & Mercer, R. E. (2020). **Design of a Biochemistry Procedure-Oriented Ontology**. In *the Communications in Computer and Information Science book series* (Vol. 1297, pp. 65-387). Springer. Retrieved from https://doi.org/10.1007/978-3-030-66196-0_17

- Alliheedi, M. (2019). ***Procedurally Rhetorical Verb-Centric Frame Semantics as a Knowledge Representation for Argumentation Analysis of Biochemistry Articles***. *Computer Science*. Retrieved from http://hdl.handle.net/10012/15021

- Alliheedi, M., Wang, Y., & Mercer, R. E. (2019). **Biochemistry procedure-oriented ontology: A case study**. In *the 11th International Conference on Knowledge Engineering and Ontology Development* (Vol. 2, pp. 164-173). 17 September, Science and Technology Publications (SCITEPRESS). Retrieved from https://www.scitepress.org/PublicationsDetail.aspx?ID=cIetqK9MzqI=&t=1

- Alliheedi, M., Mercer, R. E., & Cohen, R. (2019). **Annotation of Rhetorical Moves in Biochemistry Articles**. In *Workshop on Argument Mining collocated with ACL 2019* (p. 113--123). 1 August 2019, Association for Computational Linguistics. Retrieved from https://www.aclweb.org/anthology/W19-4514

- Alliheedi, M., Mercer, R. E., & Haas-Neill, S. (2019). **Ontological Knowledge for Rhetorical Move Analysis**. In *International Conference on Computational Linguistics and Intelligent Text* (Vol. 23). 07 April 2019. Retrieved from https://www.cys.cic.ipn.mx/ojs/index.php/CyS/article/view/3282

- Alliheedi, M., & Mercer, R. E. (2019). **Semantic Roles: Towards Rhetorical Moves in Writing About Experimental Procedures**. In *Canadian Conference on Artificial Intelligence* (Vol. 11489, pp. 518-524). springer. Retrieved from https://link.springer.com/chapter/10.1007/978-3-030-18305-9_54

- Alliheedi, M., & DiMarco, C. (2014). **Rhetorical Figuration as a Metric in Text Summarization**. In *Canadian Conference on Artificial Intelligence* (1st ed., Vol. 8436, pp. 13-22). springer. Retrieved from https://link.springer.com/chapter/10.1007/978-3-319-06483-3_2

- Alliheedi, M. (2012). ***Multi-document Summarization System Using Rhetorical Information***. *Computer Science*. Retrieved from https://uwspace.uwaterloo.ca/handle/10012/6820

CAREER PROFILE/SUMMARY

- Assistant Professor in the Faculty of Computing and Information Technology at Al Baha University, (BU), Saudi Arabia

EDUCATION/ACADEMIC QUALIFICATIONS

- Ph.D. Computer Science: Graduated: 2019
  University of Waterloo
  Advisor: Prof. Robin Cohen and Prof. Robert E. Mercer

  The thesis is focused in building a framework for automated argumentation analysis in experimental procedure which involves developing the following components: Ontology-based knowledge representation for experimental procedures, lexical semantics for procedural verbs in biomedical genre, creation of annotated corpus for experimental procedures, and then linking all components to the overall framework for argumentation analysis.

- M.S. Computer Science: Graduated: 2012
  University of Waterloo
  Advisor: Prof. Chrysanne Di Marco and Prof. Charles Clarke

  The thesis goal is to develop a multi-document summarizer system using automated detection of rhetorical figures—characteristic syntactic patterns of persuasive language—to provide information for an additional metric to enhance the performance of the summarizer. The summarizer was tested on U.S. presidential speeches. The thesis involved annotation study for the speeches.

- B.Sc. Computer Science: Graduated: 2006
  King Abdulaziz Univeristy
  Advisor: Dr. Mustafa Alsied Salah

  Developing Monitoring Law-breaking in Crowded Places which is a tool that automatically analyse and diagnose various data in crowded places, such as malls and hyper markets, that need to be monitored by providing a recommendation to ensure more attention is given to specific areas. Various statistical reports that show and present incidents in each area are provided too.

PRESENTATIONS

1. **Alliheedi, M.** (2023). Self-Learning. Online Seminar at the Google Developer Student Clubs in various universities in Saudi Arabia including (BU, IMAMU, KSAU, NBU, PSAU, SU, UBT and UJ).
2. **Alliheedi, M.** (2022). Artificial Intelligence in Biomedical Science: Semantic Roles. Seminar in the E-learning Program at the Deanship of Information Technology in Al Baha University, Al Baha, Saudi Arabia.
3. **Alliheedi, M.** (2021). Artificial Intelligence in Biomedical Science. Seasonal Academic Seminars at the Faculty of Computer Science & Information Technology in Al Baha University, Al Baha, Saudi Arabia.
4. **Alliheedi, M.**, Mercer, R.E. (2020). Semantic Search for Biomedical Texts using Predicate-Argument Structure. In the 12th International Joint Conference on Knowledge Discovery, Knowledge Engineering and Knowledge Management, Budapest, Bulgaria (Online streaming)
5. **Alliheedi, M.**, Wang, Y., & Mercer, R. E. (2019). Biochemistry procedure-oriented ontology: A case study. In the 11th International Joint Conference on Knowledge Discovery, Knowledge Engineering and Knowledge Management, University of Vienna, Vienna, Austria.
6. **Alliheedi, M.**, Mercer, R. E., & Cohen, R. (2019). Annotation of Rhetorical Moves in Biochemistry Articles. In the workshop on Argument Mining collocated with Association for Computational Linguistics, Florence, Italy.
7. **Alliheedi, M.**, & Mercer, R. E. (2019). Semantic Roles: Towards Rhetorical Moves in Writing About Experimental Procedures. In the Canadian Conference on Artificial Intelligence, Kingston, Ontario, Canada.

8. **Alliheedi, M.**, & DiMarco, C. (2014). Rhetorical Figuration as a Metric in Text Summarization. In the Canadian Conference on Artificial Intelligence, Ottawa, Ontario, Canada.

RESEARCH FUNDS/GRANTS

- University of Waterloo Graduate Studies Research Fund (May 2018)
- Saudi Arabian Cultural Bureau Bench Fee Program (June 2018)

TEACHING EXPERIENCE

I have had taught the following courses:
Advanced Programming in Artificial Intelligence (Artificial Intelligence Course)
Advance Natural Language Processing (Artificial Intelligence Course)
Operating System Security (Cybersecurity Course)
Natural Language Processing
Data Visualization
Selected Topics in Computer Science
Matrices and Linear Algebra
Discrete Structures
Probability and Statistics
Senior Project (I)
Senior Project (II)
Logic and Computation
Introduction to Computer Science
Intro to Information Technology & Communications
Intro to Algorithms and Problem Solving
English for Special Purpose
Accounting Principles

COMMITTEES

- Head of Quality Assurance Committee in Computer Science Dept., Faulty of Computer Science and Information Technology, Al Baha University.
- Head of Questionnaire Committee, Faulty of Computer Science and Information Technology, Al Baha University
- Member of E-Learning Committee, Faulty of Computer Science and Information Technology, Al Baha University
- Member of Faculty Development Committee, Faulty of Computer Science and Information Technology, Al Baha University
- Member of Student Projects Committee, Faulty of Computer Science and Information Technology, Al Baha University

- Member of Quality and Development Unit, Faulty of Computer Science and Information Technology, Al Baha University
- Member of Academic Research Committee, Faulty of Computer Science and Information Technology, Al Baha University
- Member of Academic Student Affairs Committee, Faulty of Computer Science and Information Technology, Al Baha University

AWARDS

- University of Waterloo Graduate Studies Research Travel Assistantship Award (June 2019)
- University of Waterloo Graduate Studies Research Travel Assistantship Award (Aug 2019)
- University of Waterloo Graduate Studies Research Travel Assistantship Award (May 2014)
- Higher Education Scholarship from Al Baha University for Master's and PhD degrees (2008)
- Second-class honours from King Abdul-Aziz University for a bachelor's degree in Computer Science (2006)
- Award for Best Student Performance, King Abdulaziz University (April 2005)
- Award for Best Student Performance, King Abdulaziz University (Dec 2004)
- Award for Best Student Performance, King Abdulaziz University (Aug 2003)

PROFESSIONAL DEVELOPMENT

- Fundamental of University Teaching Program from the Centre for Teaching Excellence, University of Waterloo (2018)
- Oracle 6i Developer (2006)

MEMBERSHIP OF PROFESSIONAL SOCIETIES

- Association for Computational Linguistics (ACL) Membership
- Association for Computing Machinery (ACM) Membership
- Institute for Systems and Technologies of Information, Control and Communication (INSTICC) Membership
- Computational Linguistics and Intelligent Text Processing (CICLing) Membership
- Canadian Artificial Intelligence Association (CAIAC) Membership

REFERENCES

- Prof. Robert Mercer, Western University, London, ON, Canada, mercer@csd.uwo.ca
- Prof. Chrysanne DiMarco, University of Waterloo, Waterloo, ON, Canada, cdimarco@uwaterloo.ca
- Prof. Robin Cohen, University of Waterloo, Waterloo, ON, Canada, rcohen@uwaterloo.ca