

# Emad A. Alghamdi

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## Education

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### University of Melbourne, Australia

2017 – 2021

*PhD in Computational Linguistics*

Thesis: "Automated Video Difficulty Assessment"

I was awarded **the Chancellor's prize** for excellence in PhD thesis 2022

Co-supervised by Dr. Paul Gruba (Linguistics) and Dr. Eduardo Velloso (Computer Science)

### Missouri State University, USA

2012 – 2014

*M.S. in Educational Technology*

GPA: 4/4

### Missouri State University, USA

2010 – 2013

*M.A. in English Linguistics*

GPA: 3.97/4

## Projects

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### Automatic Text Difficulty Adjustment

2022–2023

- An innovative web reading system that automatically adjusts reading difficulty
- The system uses advanced NLP methods, sensor technologies (eye-tracker and thermal camera)
- The project is a collaboration with expert researchers from **Adobe Inc and Cambridge University**.

### Arabic Font Optimization

2022–2023

- The project aims to develop an innovative approach to optimize Arabic font for better reading experience.
- The project is a collaboration with expert researchers from **Google Font Team**.

### Masader Plus

2022–2023

- Masader Plus is the first online catalogue for Arabic NLP datasets.
- This catalogue contains 500+ datasets with more than 25 metadata annotations for each dataset.
- Masader Plus can be found at <https://arbml.github.io/masader/>

### Arabic Text Readability

2022–2023

- An open-sourced web app for assessing text readability for Saudi students in general education (K1-12)
- The system uses advanced NLP and machine learning methods (weak supervision)
- The project with NLP researchers from **King Abdulaziz City for Science and Technology**.

## **Automated Video Analysis Software**

**2022-2023**

- A cross-platform desktop software for automated video analysis.
- Uses advanced computer vision algorithms and methods for analyzing video contents.
- The project is funded by **SAGE Publishing**.

## **CrowdyQ Plus**

**2023-2024**

- A virtual crowdsourcing platform for generating and evaluating test items.
- The platform uses AI to generate exam questions.

## **KAUx, the first MOOC platform in Saudi Arabia**

**2013-2017**

- I proposed the development of KAUx and secured 500K SAR funding for the project.
- I was the director for the project.
- I supervised the development of 2 online training courses in the platform.

## **Scholarships, Awards, and Grants**

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### **The Chancellor's Prize for Excellence in PhD Thesis**

**2022**

My PhD thesis was awarded the prestigious Chancellor's prize for excellence in PhD thesis in the University of Melbourne

### **SAGE Concept Grants**

**2022**

My software AUVANA was awarded SAGE Concept Grants £2,000.

### **KAU Excellence in Research Grant**

**2022**

I received 35K SAR funding for the project "The Relative Contribution of Verbal Complexity to Second Language Video Lectures Difficulty Assessment".

### **KAU Excellence in Research Grant**

**2022**

I received 35K SAR funding for the project "The Use of Lexical Complexity for Assessing Difficulty in Instructional Videos".

### **Research Excellence Award**

**2019**

I was awarded Research Excellence Award by the Saudi Cultural Attaché in Australia.

### **PhD Scholarship**

**2017–2021**

Received for pursuing my PhD research at the University of Melbourne.

### **Academic Excellence Award**

**2012-2013**

I was awarded Academic Excellence Award by the Saudi Cultural Attaché in USA for excelling academically throughout the school year.

### **Certificate of Appreciation**

**June 2019**

I was awarded a Certificate of Appreciation by the Saudi Cultural Attaché in Washington, D.C for leadership as a president of the Saudi Club at Missouri State University.

Awarded by the Saudi Cultural Attaché in Washington, D.C for writing an article about volunteerism.

## Experience

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### Director of the AI in Language Learning & Assessment Lab 2022

*<http://www.ailla.tech>*

- I founded the AILLA Lab in January 2022.
- The lab has 6 active projects in collaboration with researchers and innovators from both academia (The University of Cambridge, Melbourne University, Monash University) and industry (Adobe, Google))

### Head of Research Unit 2022

*English Language Institute, King Abdulaziz University*

- I created five research interest groups on pressing topics related to language learning and assessment.
- I manage the groups' research projects.
- There are currently more than 40 PhD researchers.

### Assistant Professor in Computational Linguistics 2022

*King Abdulaziz University*

### Data Scientist Intern September 2020 – February 2021

*Melbourne Data Analytics Platform, University of Melbourne*

- Worked on NLP projects using weak supervision techniques

### Causal Instructor July 2019 – August 2019

*University of Melbourne*

- Taught a Master-level course on Technology and Language Learning

### Founder & CEO 2015 – 2017

*Dropzin - On-demand Shipping & Delivery*

- Founded the startup
- Administered day-to-day operations

### Director of e-training Unit 2014 – 2016

*King Abdulaziz University*

- Founded KAUX an Arabic MOOC platform
- Led a team of faculty members, administrators, and on-site and remote technicians
- Designed and developed two MOOCs on innovation and critical thinking

### Head of Distance Learning Unit 2013 – 2016

*King Abdulaziz University*

- Administered online English programs (7K+ Students) and 40+ instructors
- Trained faculty members on using several education technologies

*King Abdulaziz University*

- Taught English courses for university students

## Personal Development

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**Machine Learning with TensorFlow on Google Cloud Platform** 2018

*Coursera-A 5-course specialization by Google Cloud*

- Introduction to TensorFlow
- How Google does Machine Learning
- Feature Engineering
- Launching into Machine Learning
- Art and Science of Machine Learning

**International License for Entrepreneurship** 2016

*75-hour Training Course, Jeddah, Saudi Arabia*

**Design and Development of Educational Technology, MIT** 2014

*edX*

**Entrepreneurship 101: Who is your customer?, MIT** 2014

*edX*

**Statistics: Making Sense of Data, University of Toronto** 2014

*Coursera*

**Competitive Strategy, Ludwig-Maximilian University of Munich** 2013

*Coursera*

**Justice, Harvard** 2013

*edX*

**Inspiring Leadership through Emotional Intelligence, Case Western Reserve University** 2013

*Coursera*

**Internet History, Technology,& Security, University of Michigan** 2012

*Coursera*

## Publication

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Book Chapters:

- Nawaz, Sadia, **Alghamdi, Emad A**, et. al (2022). Understanding the role of AI and learning analytics techniques in addressing task difficulties in STEM education. In: Artificial Intelligence in STEM Education: The Paradigmatic Shifts in Research, Education, and Technology.

- **Alghamdi, Emad A** (2018). Effects of Using Multimodal Glosses in Video Games to Enhance Incidental Vocabulary Learning and Retention. In: Handbook of Research on Integrating Technology Into Contemporary Language Learning and Teaching. Chap.2, pp.427–448

#### Journal Articles:

- **Alghamdi, Emad A** (In review). What makes video difficult for language learners?
- Matthews, J., Masrai, A., Lange, K., McLean, S., **Alghamdi, Emad A**, Kim, K., Shinhara, Y., Tada, S. (in review). Using meaning recall to explore links between aural lexical knowledge and L2 listening: A replication and extension study.
- **Alghamdi, Emad A** (2022). Book review: Computational psychometrics: new methodologies for a new generation of digital learning and assessment.
- **Alghamdi, Emad A**, Paul Gruba, and Eduardo Velloso (2022). The Relative Contribution of Verbal Complexity to Second Language Video Lectures Difficulty Assessment. The Modern Language Journal: 4/194 (Linguistics)
- **Alghamdi, Emad A**, Paul Gruba, Ahemd Mersi, et al. (2022). The Use of Lexical Complexity for Assessing Difficulty in Instructional Videos. Language Learning and Technology. 8/194 (linguistics).
- **Alghamdi, Emad A**, Eduardo Velloso, and Paul Gruba (2021). AUVANA: An Automated Video Analysis Tool for Visual Complexity. DOI: <https://doi.org/10.31219/osf.io/kj9hx>
- **Alghamdi, Emad A** and Sayyed Rashid Shah(2018). Exploring the Effects of Mobile-Based Audience Response System on EFL Students' Learning and Engagement in a Fully Synchronous Online Course. International Journal of English Linguistics 8.3, p.92. DOI:10.5539/ijel.v8n3p92
- **Alghamdi, Emad A** and Hussam Rajab(2016). Unmonitored students self-created WhatsApp groups in distance learning environments: A collaborative learning tool or cheating technique. International Journal of Research, 5.2, pp.71–82
- **Alghamdi, Emad A** (2016). Untangling Multimedia Effects on EFL Incidental Vocabulary Learning via Playing an Online Hidden-Object Game. International Journal of Computer-Assisted Language Learning and Teaching, 6.1, pp.24–39. ISSN:2155-7098
- **Alghamdi, Emad A** (2015). The Representation of Islam in Western Media: The Coverage of Norway Terrorist Attacks. International Journal of Applied Linguistics and English Literature, 4.3, pp.198–204. ISSN:22003592
- **Alghamdi, Emad A** (2014). Gulf Pidgin Arabic: A Descriptive and Statistical Analysis of Stability. International Journal of Linguistics, 6.6, p.110

#### Conference Proceedings:

- Yousef Altaher, Ali Fadel, Mazen Alotaibi, Mazen Alyazidi, Mishari Al-Mutairi, Mutlaq Aldhbuiub, Abdulrahman Mo-saibah, Abdelrahman Rezk, Abdulrazzaq Alhendi, Mazen Abo Shal, **Alghamdi, Emad A**, Maged S. Alshaibani, Jezia Zakraoui, Wafaa Mohammed, Kamel Gaanoun, Khalid N. Elmadani, Mustafa Ghaleb, Nouamane Tazi, Raed Al-harbi, Maraim Masoud, Zaid Alyafeai (2022). Masader Plus: A New Interface for Exploring +500 Arabic NLP Datasets. EMNLP.
- **Alghamdi, Emad A**, Fahad Otaif, and Paula Gruba (2018). Designing a video playing interface for second language learners. ASCILITE2018. November, pp.298–302
- **Alghamdi, Emad A**, N. R. Aljohani, et. al. (2015). CrowdyQ: A virtual crowdsourcing platform for question

items development in higher education. 17th International Conference on Information Integration and Web-Based Applications and Services, iiWAS2015-Proceedings

#### Talks:

- Alghamdi, E. A. (2019). Video diculty assessment. Presented at the Human-Computer Interaction Seminars. School of Computing and Information Systems, The University of Melbourne, Melbourne, Australia.
- Alghamdi, E. A. (2018). Video complexity and language learners: Making the match. The Third Saudi Scientific Symbolism, University of Sydney, Sydney, Australia.

## COMMUNITIES

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- The Readability Consortium
- American Association of Applied Linguistics
- ARBML (Arab Machine Learning)
- Human-Computer Interaction Group, the University of Melbourne
- Melbourne Data Analytics Platform

## VOLUNTEER

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**Founding Director** **2015 – 2016**

*Afaqi Learning Hubs*

**President of the Saudi Student Club** **2012-2013**

*Missouri State University, MO, USA*

**English-Arabic Translator** **2012-2014**

*TED*

**Journal Reviewer**

*Behavior Research Methods, Language Learning & Technology, Interactive Learning Environments, Sage Open*

## Skills

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**Natural Languages:** Arabic (Native), English (Fluent)

**Programming Languages:** Python, R, JavaScript

**Machine Learning, NLP, & CV:** TensorFlow, Keras, Scikit-learn, spaCy, OpenCV, NLTK

**Web and Desktop Technologies:** HTML, CSS, AWS, Vue, Electron, Django, Flask. Streamlit

**Statistics:** RStudio, SPSS