



# Abdullah Abdulaziz Albanyan | Curriculum Vitae

✉ [abdullah@albanyan.com](mailto:abdullah@albanyan.com)

☎ 00966555568669

🌐 [www.albanyan.com](http://www.albanyan.com)

*Last updated: March 2025*

## Education

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<b>University of North Texas, Texas, United States</b> <i>Ph.D., Computer Science and Engineering, Artificial Intelligence</i> Dissertation Title: <i>Deep Learning Methods to Investigate Online Hate Speech and Counterhate Replies to Mitigate Hateful Content</i> Research Area: <i>Deep Learning, Natural Language Processing, Computational Linguistics</i>	<i>Aug 2019 - May 2023</i> GPA: 4.0/4.0
<b>Southern Methodist University, Texas, United States</b> <i>M.Sc., Software Engineering</i>	<i>May 2012 - Dec 2013</i> GPA: 3.87/4.0
<b>King Saud University, Riyadh, Saudi Arabia</b> <i>B.Sc., Information Systems</i>	<i>Sep 2004 - May 2009</i>

## Research Interests

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Artificial intelligence, machine/deep learning, natural language processing, computational linguistics, information retrieval, sentiment analysis, and opinion mining on social media platforms

## Employment History

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Prince Sattam Bin Abdulaziz University <i>Vice Dean for Academic Affairs</i>	<i>Oct 2023 - Present</i>
Prince Sattam Bin Abdulaziz University <i>Assistant Professor</i>	<i>June 2023 - Present</i>
Prince Sattam Bin Abdulaziz University <i>Lecturer</i>	<i>May 2014 - June 2023</i>
Prince Sattam Bin Abdulaziz University <i>Demonstrator</i>	<i>Aug 2011 - May 2014</i>
King Saud University <i>Demonstrator</i>	<i>Jun 2009 - Aug 2011</i>
Saudi Basic Industries Corporation (SABIC) <i>Trainee, Aljubail SABIC Headquarter</i>	<i>Apr 2008 - Aug 2008</i>

## Employment Awards

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- Excellence Award of Prince Sattam bin Abdulaziz University's Best Supervisor of student activity 2016 - 2017
- Ideal faculty member award for the year 2015 - 2016

## Artificial Intelligence Projects

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### 1. Natural Language Processing Projects:

**Hate speech and counterhate content on social media platforms** The standard approach to mitigate hateful online content is removing content or blocking accounts. However, this way restricts free speech on social media. In addition, the content of the replies to the hateful content might reflect positively and add important information to the victims against the hateful claim. For this purpose, we conduct several studies focusing on hate speech and counterhate arguments on social media platforms:

**A. Pinpointing Fine-Grained Relationships between Hateful Tweets and Replies (English)** 2020 - 2021

We investigate the relationships between hateful tweets and replies on social media to understand how users react to hateful content. Additionally, we provide finer information on how they counter the hate.

*This work was presented at AAAI-22, a top-tier AI conference with a 15% acceptance rate, where only 25% of accepted papers were selected for presentation.*

**B. Mitigating the Risks of Counterhate Arguments (English)** 2022 - 2023

We want to analyze replies to counterhate tweets to understand when a counterhate tweet increases the heat of the conversation and makes it more argumentative, or worse. Specifically, we want to understand what kind of language people use in their counterhate tweets that lead to more hate instead of stopping it. Additionally, we intend to create a neural classifier built on top of a pre-trained language model to identify the type of reply a counterhate tweet will elicit.

**C. Analyzing replies to Arabic hateful tweets (ongoing project) (Arabic)** 2024 - Present

We want to analyze the replies to Arabic hateful tweets to understand how people on social media platforms respond to Arabic hateful messages. We will create an Arabic tweet corpus with fine-grained information about the replies and a neural classifier to determine the relationship between hateful tweets and replies.

### 2. Image Processing Projects:

**A. Deep Tumor Track Network** 2017 - 2018

It has been drawn to our attention that the current physicians do not have an accurate tumor tracker than their natural sense. This may cause fatigue among physicians, which may result in inaccurate results. Patients may also experience over-delivery of radiation to unwanted areas, which could extend unnecessarily long therapy sessions. The availability of advanced

technologies to get the accurate position of tumors will allow physicians to reduce their fatigue while helping patients to reduce their recovery time and thus lower the medical costs for their treatment. This paper proposed a novel system for real-time tumor tracking on video using deep neural networks.

### **B. Document Boundary**

2019 - 2020

An intelligent system that helps scan multiple documents at once, and the goal is to detect each document's last page automatically. The model reads overlapped documents and divides them into separate files, using novel techniques to build an intelligent model. The model separates the documents by detecting the last page of each file within the whole document. This system can help employees be time in arranging or collecting overlapping documents.

## **Publications**

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1. Ahanger, Tariq Ahamed, Munish Bhatia, **Abdullah Albanyan**, and Abdulrahman Alabduljabbar. "Bi-level decision tree-based smart electricity analysis framework for sustainable city." *Sustainable Computing: Informatics and Systems* 45 (2025): 101069.
2. Khan, Sajid Ullah, **Abdullah Albanyan**, Mohsin Bilal, and Shahid Ullah. "A genetic programming Rician noise reduction and explainable deep learning model for Alzheimer's diseases severity prediction." *Journal of Alzheimer's Disease* 102, no. 1 (2024): 129-142.
3. Liu, Yu, Muhammad Rizal Razman, Sharifah Zarina Syed Zakaria, Khai Ern Lee, Sajid Ullah Khan, and **Abdullah Albanyan**. "Personalized context-aware systems for sustainable agriculture development using ubiquitous devices and adaptive learning." *Computers in Human Behavior* 160 (2024): 108375.
4. Zahoor, Mirza Mumtaz, Saddam Hussain Khan, Tahani Jaser Alahmadi, Tariq Alsahfi, Alanoud S. Al Mazroa, Hesham A. Sakr, Saeed Alqahtani, **Abdullah Albanyan**, and Bader Khalid Alshemaimri. "Brain tumor MRI classification using a novel deep residual and regional CNN." *Biomedicines* 12, no. 7 (2024): 1395.
5. Louati, Ali, Hassen Louati, **Abdullah Albanyan**, Rahma Lahyani, Elham Kariri, and Abdulrahman Alabduljabbar. "Harnessing Machine Learning to Unveil Emotional Responses to Hateful Content on Social Media." *Computers* 13, no. 5 (2024): 114.
6. Louati, Hassen, Ali Louati, Rahma Lahyani, Elham Kariri, and **Abdullah Albanyan**. "Advancing Sustainable COVID-19 Diagnosis: Integrating Artificial Intelligence with Bioinformatics in Chest X-ray Analysis." *Information* 15, no. 4 (2024): 189.
7. Khan, Saddam Hussain, Tahani Jaser Alahmadi, Tariq Alsahfi, Abeer Abdullah Alsadhan, Alanoud Al Mazroa, Hend Khalid Alkahtani, **Abdullah Albanyan**, and Hesham A. Sakr. "COVID-19 infection analysis framework using novel boosted CNNs and radiological images," *Scientific Reports* 13, no. 1 (2023): 21837.
8. **Abdullah Albanyan**, Ahmed Hassan, and Eduardo Blanco. 2023. Finding Authentic Counterhate Arguments: A Case Study with Public Figures. In *Proceedings of the 2023 Conference on Empirical*

**Methods in Natural Language Processing (EMNLP)**, pages 13862–13876, Singapore. Association for Computational Linguistics (ACL).

9. **Abdullah Albanyan**, Ahmed Hassan, and Eduardo Blanco. 2023. Not All Counterhate Tweets Elicit the Same Replies: A Fine-Grained Analysis. **The 12th Joint Conference on Lexical and Computational Semantics (\*SEM), Co-located with ACL 2023**, pages 71–88, Toronto, Canada. Association for Computational Linguistics.
10. Shabbab Algamdi, **Abdullah Albanyan**, and Stephanie Ludi. 2023. *Investigating the Usability Issues in Mobile Applications Reviews Using A Deep Learning Model*. **IEEE 13th Annual Computing and Communication Workshop and Conference (CCWC)**.
11. Shabbab Algamdi, **Abdullah Albanyan**, Sayed Shah, and Zeenat Tariq. 2022. *Twitter Accounts Suggestion: Pipeline Technique SpaCy Entity Recognition*. **IEEE International Conference on Big Data**, pp. 5121-5125.
12. **Abdullah Albanyan** and Eduardo Blanco. 2022. *Pinpointing Fine-Grained Relationships between Hateful Tweets and Replies*. **Proceedings of the AAAI Conference on Artificial Intelligence (AAAI)**, [Acceptance rate 15%], 36(10), 10418-10426.

## Open-Sourced Projects ( <https://github.com/albanyan> )

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1. **Document Boundry**  
<https://github.com/albanyan/DocumentBoundary>
2. **Analyze Replies to Hateful Messages**  
<https://github.com/albanyan/hateful-tweets-replies>
3. **Mitigate the Risks of Counterhate Replies**  
[https://github.com/albanyan/counterhate\\_reply](https://github.com/albanyan/counterhate_reply)
4. **Finding Authentic Counterhate Arguments**  
[https://github.com/albanyan/counterhate\\_paragraph](https://github.com/albanyan/counterhate_paragraph)

## Teaching Experience

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- Software Project Management
- Fundamentals of Software Engineering
- Human-Computer Interaction
- Computer Programming (in C, C++, and Java)
- Discrete Mathematics

## Work Responsibilities

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- Supervisor of the cooperative training unit
- Supervisor of the Student Activities Committee

- Coordinator of the alumni committee
- Coordinator of the scholarships committee
- Academic advising
- Representative of the training unit
- Representative of the alumni unit

## Academic Services

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- Program committee: AAAI 2023, AAAI 2024, AAAI 2025
- Reviewer: ACL 2023, EMNLP 2023

## Additional Activities

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- Organizer: Smart Cities Hackathon, PSAU, 2019
- Consultant: Accounting Solutions Hackathon 2023  
Industrial Hackathon organized by The Saudi Industrial Development Fund 2024  
Accounting Solutions Hackathon 2024

## Technical Skills

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- Programming Python, C++, Java, R, Matlab
- Machine Learning Neural Networks, SVM, PCA, BiLSTM, CNN, etc.
- Pre-trained models BERT, Bertweet, Roberta, Longformer, ALBERT, etc.
- ML Tools PyTorch, Keras, TensorFlow

## Personal Profile

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- Fast learner
- Technical and Teaching skills
- Flexible, enthusiastic, motivated, and team-oriented