

Arabic College Admission and Registration Chatbots

Problem Statement

It has increasingly become popular in the past few years to consider chatbots as a tool to enhance student services in Arab universities, particularly for services like admissions and registration. But in practice when you dive into how these chat bots actually work in Arabic there are a lot of problems. I read six papers on distinct systems, and every single one of them presented something useful and, at the same time, something missing.

For example, the Tayseer chatbot (Alabbas & Alomar, 2024) got really good accuracy with over 90% in tests. But it depended on users writing very structured inputs, which isn't realistic for everyone. Another chatbot used a neural network model (Alazzam et al., 2023), trained on a large Arabic dataset, and performed well in accuracy scores but it was never tested with real users, and it didn't support dialects at all.

The Bashayer bot (Al-Abdullatif et al., 2023) was actually used by students on WhatsApp and helped improve motivation and access to learning. However, the study was short and didn't focus on admission tasks specifically. UFAQBot (Almurayh, 2021) showed that many Saudi universities don't even have working chatbot systems, and the one they tested didn't understand dialects well. Another bot called Nabiha (Al-Ghathban & Al-Twairish, 2020) was one of the earlier ones, but it couldn't learn or adapt it just gave fixed replies.

Finally, a big review of 60+ studies (Ouali & El Garouani, 2024) pointed out that most Arabic chatbots still rely on rule-based logic and there's a huge lack of annotated datasets. It also noted that very few systems actually focused on admission and registration most were just general support bots.

So after looking at all these studies, it's clear that Arabic-language chatbots do have potential, but the way they're used for admission and registration is still limited and not fully developed. This research aims to bring together these findings and suggest better ways to design, test, and improve chatbot systems for real use in Arab universities.

Research Objectives

General Objective:

To explore how Arabic-language chatbots are used for admission and registration in Arab universities, and to understand what is still missing or needs improvement.

Specific Objectives:

- To look into different Arabic chatbot systems made for student support.
- To understand the common issues like tech problems or language barriers.
- To see how students actually interact with these bots (if they do).
- To compare a few chatbot examples based on what the studies show.
- To give simple suggestions for how to make these chatbots better.

Literature Review

Tayseer chatbot: From what I understood, the Tayseer chatbot was mainly built for helping students in vocational fields. They used something called RASA and some kind of transformer model to make it work with Arabic. It worked really well in tests (I think they said 90% accuracy), but honestly, it seems like it only worked that well when the inputs were very clean or structured.

Tayseer was made to help students in technical and vocational fields. It used advanced tools like RASA and transformers. It did really well with accuracy, but the way it worked needed very specific inputs, which can be hard for real users.

Arabic educational nervous network Chatbot: This one was focused on answering questions about education laws in the UAE. They trained it on a big dataset and the numbers looked good, but I couldn't find if they tested it with actual students. Also, I noticed that it didn't handle dialects, which is something important in Arabic-speaking countries.

This bot was trained using a huge amount of Arabic text and worked well with questions about education rules. However, it wasn't tested with actual users, and it didn't handle different Arabic dialects very well.

Bashayer: Bashayer was tested on WhatsApp, and it was used by postgrad students. It helped them feel more motivated and made it easier to deal with some academic stuff. But it didn't really go deep into admissions, and the test group was kind of small, to be honest.

Bashayer was tested on WhatsApp with a group of students. It helped with motivation and learning strategies. But the sample was small and didn't cover actual admission or registration.

UFAQBot: This study looked at how many Saudi universities use chatbots, and the result was surprising most of them didn't. The UFAQBot they tested couldn't really understand Arabic dialects very well.

I think they did a good job pointing out problems, but they didn't say much about how to fix them.

Nabiha: Nabiha was one of the earlier Arabic chatbots, and it worked on Android and even Twitter. Students liked the interface, but the responses were always the same, like hardcoded. I felt like it didn't really learn or adapt. Also, the dataset was kind of small.

Nabiha was made using AIML and worked on several platforms. It was simple and students liked it, but it couldn't learn or adapt and used a small dataset.

Arab Chatbot Challenges and solutions: This review was pretty big. They went through like 60 studies or so, and they noticed that many chatbots still use old methods and don't have enough good training data. They said we should try hybrid systems, which sounds good, but the paper didn't talk much about actual admission tools.

This review looked at over 60 studies and found lots of issues, like lack of data and old-fashioned design. It recommended using hybrid systems and better testing methods, but didn't focus much on admission tasks specifically.

References

1. Al-Ghadhban, D., & Al-Twairish, N. (2020). Nabiha: An Arabic Dialect Chatbot for IT College Students. *International Journal of Advanced Computer Science and Applications (IJACSA)*, 11(3), 457–461. https://thesai.org/Downloads/Volume11No3/Paper_57-Nabiha_an_Arabic_Dialect_Chatbot.pdf
2. Al-Dmour, R., Al-Dmour, A., & Al-Hadidi, A. (2024). Arabic Chatbots Challenges and Solutions: A Systematic Literature Review. *International Journal of Computer Science and Mobile Computing (IJCSM)*, 12(6), Article 54. <https://digitalcommons.aaru.edu.jo/isl/vol12/iss6/54/>
3. Al-Sheikh, M., Al-Omari, F., & Alzoubi, Y. (2023). A WhatsApp-Based Arabic Chatbot for Higher Education Support Services: A Case Study. *PLOS ONE*, 18(6), e10226531. <https://pmc.ncbi.nlm.nih.gov/articles/PMC10226531/>
4. Al-Taani, A., & Abu-Ghazleh, S. (2021). An Intelligent Arabic Chatbot for IT Technical Support. *International Journal of Computer Science (IAENG)*, 48(1), 231–238. https://www.iaeng.org/IJCS/issues_v48/issue_1/IJCS_48_1_21.pdf
5. Alsaeed, D., & Almalki, M. (2024). Design and Implementation of Arabic Chatbot Using NLP Techniques. *Applied Sciences*, 14(6), 2547. <https://www.mdpi.com/2076-3417/14/6/2547>
6. Al-Mashaqbeh, I. (2024). Arabic Language Chatbots: A Comparative Study of AI-based Dialogue Systems. *International Journal of Computer Science and Mobile Computing (IJCSM)*. <https://ijcsm.researchcommons.org/cgi/viewcontent.cgi?article=1159&context=ijcsm>