AI-powered Chatbot for New Wikipedia Editors

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Abstract

In this research we propose the creation of an AI-powered chatbot to assist newcomers in the editing processes. It will offer step by step guidance, allowing newcomers to participate successfully in discussions, and have their contributions approved. This can increase editor participation and retention, as well as address the gender imbalance in editors.
We will draw on previous work with Latin-American crowdworkers and contact with local Wikimedia to implement the chatbot on Spanish Wikipedia, complementing existing tools.

Introduction

Recruiting and retaining new members is essential for open collaborative systems [5], and it is one of Wikipedia's major concerns, since its editor decline is documented [5]. Initiatives such as ART+Feminism, along with offline edit-a-thons have proved to be successful at recruiting new collaborators; however, retention remains problematic [3]. In order to address this problem we seek to develop an AI-powered chatbot that helps newcomers engage successfully in editing discussions, and have their contributions approved. Our chatbot, based on Large Language Models (LLMs), would assist new editors to:

- Follow the right steps to make different types of edits.
- Offer advice when edits are contested.
- Learn and make use of better argumentative practices for editing discussions.
- Guide them through the discussion process, e.g. addressing feedback, reaching an agreement, asking for mediation.
- Have their edits approved while adhering to Wikipedia's guidelines.

The chatbot would facilitate participation of new editors, make them feel supported through the editing processes, and improve task completion. Actively assisting newcomers through their tasks, and helping them reach their goals will result in a growing sense of achievement that will improve retention. Our chatbot would also promote better discussion practices in talk pages. This can lead to more positive interactions between new and established members, which has also been found to improve retention of new editors [5]. Another positive outcome from the implementation of the chatbot would be addressing the gender imbalance in Wikipedia editors. Only 15% of Wikipedia editors are women [4], and the main difficulties they face are a high level of conflict, dislike of critical environments, and lack of confidence in editing other's work [1]. The chatbot would assist women editors to overcome these obstacles by helping them participate successfully in editing discussions, obtain approval for their contributions, and create positive interactions that encourage further participation.

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Related work

We recently created a platform for Latin-American crowdworkers that makes use of AI-enhanced tools, including an Intelligent Assistant in the form of a chatbot [2]. We found these tools to be exceptionally useful to our target group's needs, particularly, to help them build a supportive community, and to offer them assistance to complete their tasks. We believe a similar chatbot would be of great help to newcomers.
Regarding Spanish Wikipedia, where we plan to implement the chatbot, one tool is currently in use: SeroBOT, focused on fighting vandalism. It is possible to build upon its experience, and complement its work with our chatbot. As a result, Spanish Wikipedia would have tools to both support maintenance tasks, and facilitate participation of newcomers.

Methods

Our previous work has had two strands: Data Insights and System Design. We recruit users from the platforms themselves, then carry out interviews and surveys. In this case, users will be local editors, since a member of Wikipedia Mexico will join us. Our frameworks for analysis are based on the literature, but also on the collected data. We can then use data insights along with our own experience in human-centered design to develop an intelligent assistant.

Expected output

Three main outputs will directly benefit Wikipedia:

- Increased approval rate of edits by newcomers.
- Increased editor participation and retention.
- Assistance for the editing and discussion processes.

We also plan to disseminate our findings through:

- Venues such as CSCW, CHI, and EAAMO.
- Scientific articles in publications, e.g. ACHI: Advances in Computer-Human Interaction.

Risks

We are familiar with ORES and the “good faith/damaging” approach. Using the new Revert Risk models, and choosing the right one might present a small challenge. Secondly, we are aware LLMs might replicate biases. We will need to stay alert for potential issues, particularly regarding gender bias, since one of our goals is to address the gender gap in editors.

Community impact plan

In order to contextualize our tools, we decided to implement our chatbot in Spanish Wikipedia. We have reached and included Pepe Flores from Wikipedia Mexico. With his help, we will be able to connect with the local Wikipedia community, and take its specific needs into account. He will be fundamental to facilitate our chatbot’s adoption, improve communication with regional editors, and disseminate our findings locally.

Evaluation

Since our main goal is to help newcomers have their edits approved, we could measure our chatbot’s success rate, and an edits-completed rate. We could compare them vs. editors not using our chatbot. Direct feedback from users will also be key: we want to create tools that guide newcomers, help them build up confidence, and integrate them into the editing processes. It is vital that our chatbot does not add another layer of complexity, but actually simplifies processes for newcomers.

Budget

Salary for team members and an undergraduate computer engineering assistant: 35000.
Equipment (2 PC's): 3000.
Open Access Publishing Costs: 3000.
Institutional Overhead (15%): 6150.
Total: 47150.

Prior contributions

Saiph Savage is Director of the Northeastern Civic A.I. Lab. She has carried out research on the positive effects of edit-a-thons events on Wikipedia. She has also worked on multiple research projects related to human-computer interaction, designing and implementing AI systems, digital labor, feminism, and the use of bots.
José Emilio García holds a Ph.D. in Literature from the National Autonomous University of Mexico. As part of the Civic A.I. Lab, he recently worked on an AI-enhanced platform for Latin-American women crowdworkers.
Pepe Flores is a member of Wikimedia Mexico. He is also part of R3D, an NGO dedicated to the defense of digital rights, and the promotion of free access to knowledge.

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