

# Proposal of conversational chatbots for educational remediation in the context of covid-19

Kokou GAGLO \*, Bessan Melckior Dégboé \*, Ghislain Mervyl Kossingou \*, Samuel Ouya \*

\* *Laboratory LIRT, Higher Polytechnic School, University Cheikh Anta Diop of Dakar, Senegal*  
 freemanpolys@gmail.com, bessan@degboe.org, skossingou@gmail.com, samuel.ouya@gmail.com

**Abstract**—This paper presents a conversational chatbots solution allowing, in the context of covid-19, to support, detect and reduce deficiencies and bring students to self-training in order to develop their skills. The chatbot intervenes during formative evaluations and identifies the student's misunderstandings and directs him/her at the end of the test towards the parts of the course dealing with the concepts that have not been mastered. In the context of covid-19, one of the barrier gestures being social distancing, face-to-face classes have been suspended. Many higher education institutions that were not prepared for e-learning suddenly switched to online courses in order not to lose the academic year. Students no longer have the follow-up that they had when they were learning face-to-face. The chatbot proposed in this work could help reduce the negative effects of the covid-19 pandemic on the students' level. To allow learners to have a standardized learning environment, we have developed a plugin of the Moodle learning environment using the chatbot based on the Natural Language Processing (NLP) of Artificial Intelligence. In this work we show how our conversational chatbot is used for pedagogical remediation by indicating to the learner which chapters of the course to revise according to the gaps highlighted by the chatbot.

**Keyword**— educational remediation, covid-19, chatbot, NLP, AI



**Kokou GAGLO** holds a Master of Research degree in Engineering Sciences from the University Cheikh Anta Diop (UCAD) of Dakar-Senegal. He does research work in networks and telecommunications at the Laboratory of Computer Science, Networks and Telecommunications (LIRT) of the Polytechnic Institute of Dakar (ESP).



**Bessan M. DEGBOE** holds a Master of Research degree in Engineering Sciences from the University Cheikh Anta Diop (UCAD) of Dakar-Senegal. He does research work in networks and telecommunications at the Laboratory of Computer Science, Networks and Telecommunications (LIRT) of the Polytechnic Institute of Dakar (ESP) His current research interests include Internet of Things (IoT), IP multimedia subsystem (IMS) and open-source software.



**Ghislain Mervyl Kossingou** is currently a PhD student at Computer, Network and Telecom Laboratory (LIRT) at University Cheikh Anta DIOP of Dakar. Holder a Master's degree in Engineering Sciences from Polytechnic Higher School of the University Cheikh Anta Diop (UCAD) of Dakar-Senegal. His current research interests include Internet of Thing IoT, e-learning, e-health. The format for listing publishers of a book within the biography is: title of book (city, state: publisher name, year) similar to a reference. Current and previous research interests end the paragraph.



Pr. **Samuel Ouya** is currently the Director of Computer, Network and Telecom Laboratory (LIRT) at University Cheikh Anta DIOP of Dakar. He was from 2013 to May 2017 the first Director of Infrastructure and Information System of the first virtual university of Senegal (UVS). Holder of a Thesis in Applied Mathematics from the Gaston Berger University of Saint-Louis in Senegal and a Telecommunications Thesis from the Cheikh Anta Diop University (UCAD) in Dakar-Senegal, he is interested in Applications of innovative telecom services to virtual organizations.