INTISARI

Meningkatnya beban kerja dan jumlah informasi akademik dalam lingkungan kampus, terutama bagi dosen yang berkontribusi di bidang riset dan akademik, dapat menimbulkan *stress*. Selain itu, salah satu efek dari fenomena penuaan kognitif, yaitu lupa seringkali terjadi pada kalangan dosen yang lebih tua, dimana sebagian dari mereka mengalami lupa dikarenakan paparan stress jangka panjang. Di lain pihak, penggunaan aplikasi *chatbot* makin meluas dalam berbagai bidang, salah satunya dalam bidang akademik. Penerapan *chatbot* memiliki beberapa keunggulan, yaitu mampu menjawab pertanyaan pengguna dengan detail, instan dan memakai pendekatan manusiawi, serta melakukan tugas-tugas sederhana. Dalam penelitian ini akan dirancang sebuah aplikasi *chatbot* layanan dukungan akademik dengan nama "JaniBot".

Pengembangan JaniBot dilakukan dengan proses *Scrum* dan metode pengujian *Black Box*. JaniBot dirancang dengan menggunakan layanan Bot Framework, Azure Bot Service dan 2 layanan Azure Cognitive Services, yaitu: QnA Maker sebagai layanan *Natural Language Processing* dan basis pengetahuan informasi akademik *chatbot*, serta LUIS.ai sebagai layanan *Natural Language Understanding* untuk memproses *intent* atau konteks dari masukan pengguna. Selain itu JaniBot mengambil informasi agenda akademik dari situs web portal dosen dengan menggunakan REST API. Penelitian ini berhasil merancang sebuah *chatbot* layanan dukungan akademik bagi dosen DTETI UGM bernama "JaniBot" yang mampu menjawab pertanyaan berupa informasi dan agenda akademik yang relevan bagi dosen DTETI UGM. Hal tersebut dibuktikan dengan hasil pengujian *Black Box* yang menunjukkan keberhasilan sebanyak 17 dari 20 kasus uji pada 3 skenario uji berbeda yang berisi masukan berupa pertanyaan–pertanyaan akademik.

Kata kunci : Chatbot, Cognitive Services, Conversational Agent, Natural Language Processing, Natural Language Understanding

ABSTRACT

With the increase of academic workload and academic information where employees need to understand inside campus environment, especially those who work in research and academics including professors can cause stress. Other than that, one of the effects of cognitive ageing phenomenon, which is forgetfulness often affect older professors, while most of their forgetfulness effect were caused by long term stress due to their workload. Meanwhile, the usage of chatbots are widely spread and implemented into various sectors of business. One of the implementations are in the academic world. The implementation of chatbots has several advantages for their users, in which chatbots are able to answer user's questions with detailed answers instantly with humane approaches and performing simple tasks asked by their users. This research aims to design and create an academic support chatbot called 'JaniBot'.

JaniBot's development process uses Scrum and had tested its functionality with Black Box Testing. JaniBot uses Bot Framework, Azure Bot Service and 2 of Azure Cognitive Service's service, which are QnA Maker as JaniBot's Natural Language Processing engine and knowledge base and LUIS.ai for JaniBot's Natural Language Understanding engine which detect and extract intents or contexts from user inputs. And then, JaniBot fetches lecturer's academic schedules and agendas from lecturer's web portal using REST API. The research has resulted in the successful creation of academic support chatbot called "JaniBot" for DTETI UGM lecturers that were able to answer users question about academic information and their own academic agendas by using conversational approach. The result was proven by Black Box testing results which shows 17 success test cases out of 20 test cases from 3 different test scenarios where it contains relevant academic questions.

Keywords : Chatbot, Cognitive Services, Conversational Agent, Natural Language Processing, Natural Language Understanding