SISTEM *CHATBOT* LAYANAN INFORMASI MAHASISWA MENGGUNAKAN ALGORITMA *LONG SHORT-TERM MEMORY*

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INTISARI

Latar Belakang: Dalam era globalisasi dan percepatan informasi, kebutuhan akan informasi yang efisien dan akurat semakin meningkat, terutama di institusi akademik. Mahasiswa menghadapi tantangan aksesibilitas sumber daya pendidikan dan informasi *real-time*, terutama di luar jam kerja resmi. Berbagai layanan informasi *online* sudah ada, namun akses di luar jam kerja masih terbatas. Pengembangan sistem *chatbot* menggunakan algoritma *Long Short-Term Memory* (LSTM) dapat menjadi solusi efektif, memahami konteks percakapan, dan memberikan respons yang akurat. Penelitian ini di Universitas Jenderal Achmad Yani Yogyakarta bertujuan untuk mengembangkan dan mengevaluasi sistem *chatbot* layanan informasi mahasiswa, diharapkan dapat mengoptimalkan layanan informasi yang diberikan.

Tujuan: Penelitian ini bertujuan untuk mengembangkan dan mengevaluasi sistem *chatbot* layanan informasi mahasiswa berbasis algoritma *Long Short-Term Memory* (LSTM) di Fakultas Teknik dan Teknologi Informasi UNJAYA. Sistem ini diharapkan dapat memberikan layanan informasi yang efisien dan akurat, serta memenuhi kebutuhan informasi mahasiswa secara *real-time*.

Metode Penelitian: Penelitian ini menggunakan *Machine Learning Development Cycle* (MLDC) dalam pembangunan model menggunakan algoritma *Long Short-Term Memory*. Tahapan meliputi pengumpulan data, pemrosesan data, pelatihan model, evaluasi model, dan implementasi. Pengujian menggunakan kuesioner kepada mahasiswa dan diukur menggunakan skala likert.

Hasil: Hasil evaluasi menunjukkan bahwa chatbot yang dikembangkan memiliki tingkat akurasi sebesar 97.76%, presisi 98.34%, dan *recall* 97.76%, serta pengujian sistem dengan nilai rata-rata 3,87 dengan kategori baik.

Kesimpulan: Sistem chatbot layanan informasi mahasiswa berbasis LSTM telah berhasil dikembangkan dan menunjukkan kinerja yang baik dalam memberikan informasi yang akurat dan efisien. *Chatbot* ini dapat mengoptimalkan layanan informasi di Fakultas Teknik dan Teknologi UNJAYA dan menjadi solusi inovatif untuk memenuhi kebutuhan informasi mahasiswa secara *real-time*.

Kata-kunci: *Chatbot*, Layanan Informasi, *Long Short-Term Memory*, *Machine Learning Development Cycle*

PERPUSTAKAAN UNIVERSITAS JENDERAL ACHMAD YANI YOGYAKARTA

STUDENT INFORMATION SERVICE CHATBOT SYSTEM USING LONG SHORT-TERM MEMORY ALGORITHM

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ABSTRACT

***Background**: In the era of globalization and information acceleration, the need for efficient and accurate information is increasing, especially in academic institutions. Students face the challenge of accessibility to educational resources and real-time information, especially outside official working hours. Various online information services already exist, but access outside of working hours is still limited. The development of a chatbot system using the Long Short-Term Memory (LSTM) algorithm can be an effective solution, understanding the context of the conversation, and providing accurate responses. This research at Universitas Jenderal Achmad Yani Yogyakarta aims to develop and evaluate a student information service chatbot system, expected to optimize the information services provided.*

***Objective**: This research aims to develop and evaluate a student information service chatbot system based on the Long Short-Term Memory (LSTM) algorithm at UNJAYA Faculty of Engineering and Information Technology. This system is expected to provide efficient and accurate information services, as well as fulfil the information needs of students in real-time.*

***Method**: This research uses the Machine Learning Development Cycle (MLDC) in model building using the Long Short-Term Memory algorithm. Stages include data collection, data processing, model training, model evaluation, and implementation. Testing uses a questionnaire to students and is measured using a Likert scale.*

***Result**: The evaluation results show that the chatbot developed has an accuracy rate of 97.76%, precision of 98.34%, and recall of 97.76%, as well as system testing with an average score of 3.87 with a good category.*

***Conclusion**: The LSTM-based student information service chatbot system has been successfully developed and shows good performance in providing accurate and efficient information. This chatbot can optimize information services at UNJAYA Faculty of Engineering and Information Technology and become an innovative solution to meet student information needs in real-time.*

***Keywords**: Chatbot, Information Service, Long Short-Term Memory, Machine Learning Development Cycle*

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