

ABSTRAK

Bakti Parningotan Marbun, 2025. **PERANCANGAN CHATBOT BANTUAN HUKUM PERSONAL “OSOORA” BERBASIS WEB DAN *GENERATIVE ARTIFICIAL INTELLIGENCE***. Tugas Akhir, Program Studi Informatika (S1), Universitas Bhinneka Nusantara, Pembimbing: Daniel Rudiaman Sijabat, Co. Pembimbing: Mukhlis Amien

Kata kunci: *Chatbot, Generative Artificial Intelligence, Bantuan Hukum, Retrieval-Augmented Generation, Sistem Informasi.*

Penelitian ini mengupayakan inovasi aksesibilitas bantuan hukum melalui pengembangan "OSOORA," sebuah *chatbot* bantuan hukum pribadi berbasis web. Sistem ini diaktifkan oleh Kecerdasan Buatan Generatif (GenAI), secara spesifik memanfaatkan *Large Language Model* (LLM) *Qwen 2.5 72B Instruct*. Urgensi studi ini timbul dari kebutuhan akan akses informasi hukum yang cepat, mudah, dan terjangkau, mengingat kompleksitas sistem hukum yang kerap menjadi kendala bagi masyarakat awam. Metode pengembangan mengadopsi model *Adaptive Waterfall*, yang meliputi tinjauan literatur, kompilasi basis pengetahuan hukum, perancangan arsitektur sistem menggunakan Node.js dan Express, serta implementasi antarmuka pengguna berbasis HTML, CSS, dan JavaScript. Validasi sistem dilakukan melalui Blackbox Testing untuk fungsionalitas, sementara akurasi LLM dikalkulasi menggunakan indikator *Precision*, *Recall*, dan *F1-Score*. Hasil studi ini mengindikasikan bahwa "OSOORA" berhasil diimplementasikan sebagai platform intuitif yang mampu memproses kueri hukum secara efisien dan menyediakan respons yang relevan serta komprehensif. Dengan demikian, "OSOORA" menunjukkan potensi signifikan dalam meningkatkan kapabilitas publik mengakses informasi dan asistensi hukum.

ABSTRACT

Bakti Parningotan Marbun, 2025. **Design of a Personal Legal Assistance Chatbot “Osoora” Based on Web and Generative AI**. Final Project, Study Program Informatics (S1), Universitas Bhinneka Nusantara, Advisor 1 : Daniel Rudiaman Sijabat, Advisor 2 : Mukhlis Amien

Keyword: Chatbot, Generative Artificial Intelligence, Legal Aid, Retrieval-Augmented Generation, Information System.

The core of this research involves crafting "OSOORA," a sophisticated web-based personal legal aid chatbot. This endeavor is made possible by harnessing the power of Generative AI (GenAI), particularly the advanced Qwen 2.5 72B Instruct Large Language Model (LLM). The driving force for the present inquiry resides in the critical demand for rapid, unencumbered, and financially accessible legal intelligence. This is especially salient given the convoluted structure of the legal domain, which often renders it impenetrable to the general populace. The chosen developmental paradigm is the Adaptive Waterfall model, characterized by its iterative stages. These stages include an exhaustive literature review, the collection of foundational legal knowledge, the system is powered by Node.js and Express. It is also architecturally conceptualized. The front-end is realized through HTML, CSS, and JavaScript components. System testing was conducted using Blackbox Testing for functionality and LLM accuracy evaluation using Precision, Recall, and F1-Score metrics. The results indicate that "OSOORA" was successfully implemented as a user-friendly platform capable of efficiently processing legal queries and providing relevant, comprehensive answers. Therefore, OSOORA has the potential to enhance public accessibility to legal information and assistance.