Beyond Automation: A Rigorous Testing Framework for Reliable AI Chatbots in Life Insurance

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Abstract: *AI-driven chatbots are transforming customer service in Life Insurance, offering policyholders instant support, streamlined inquiries, and personalized recommendations. However, deploying these chatbots effectively requires addressing unique challenges, including interpreting complex insurance terminology, ensuring regulatory compliance, and maintaining data security and user privacy. This research introduces a detailed testing framework specifically tailored to Life Insurance chatbots, covering functional, non-functional, AI-specific, and compliance testing to guarantee accuracy, reliability, and adherence to legal standards. The framework emphasizes essential practices for verifying natural language understanding, sensitive data handling, and empathetic responses for users navigating critical life events. This research highlights the critical role of targeted testing to deliver robust, user-centered chatbot solutions in the Life Insurance sector.*

Keywords: Artificial Intelligent, Life Insurance, Annuity, Chatbot, Natural language processing (NLP), Regulatory compliance (HIPAA, GDPR), Quality Assurance