Republic of the Philippines
**CAVITE STATE UNIVERSITY**
**Don Severino de las Alas Campus**
Indang, Cavite

**AI-Powered Chatbot for Automated Customer Support in E-Commerce~~RESEARCH PROPOSAL TITLE~~**

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**Commented [1]:** Put your tentative thesis title here.
Remember:
A4 size, Arial 11
Academic Writing Style (good writing style should be considered)
APA formatting (referencing and in-text citation)
Always make sure that your proposal falls under any 3 prioritized CS research tracks
Avoid plagiarism
Always make sure that your proposed study is specific and attainable.

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## Rationale/ Introduction

As e-commerce platforms continue to expand, businesses face increasing challenges in providing efficient and responsive customer support. Traditional customer service methods often involve human agents, leading to long wait times, inconsistent responses, and high operational costs. AI-powered chatbots, utilizing Natural Language Processing (NLP) and machine learning, offer a scalable solution by providing instant, automated responses to customer queries. This research aims to develop an AI-powered chatbot for e-commerce platforms, enhancing customer service efficiency, reducing response time, and improving user satisfaction. The chatbot will be designed to handle common inquiries, process orders, and assist users with troubleshooting issues. ~~<Insert content; In-text citations are needed>~~

**Commented [2]:** Yung Rationale po ay nageexplain the reason behind your proposal - why do you propose that research idea.
First paragraph: Introduce ano yung problem or yung research gap. It is something that you want to address. Not because it is called problem ay direct problem na ito. It can be the gap, weaknesses, issues, or based on recommendations from existing literature.

Second paragraph: In few sentences, describe how you'll be able to solve the research gap or isolve ang weaknesses nito.

Third paragraph: Potential impact. Dito nyo na ihighlight yung expected outcomes or benefits nito.

Fourth paragraph: Conclusion. Just a summary of this rationale and conviction na maipush ang proposal nyo. This highlights yung value ng proposal nyo to contribute sa field ng CS.

NOTE: ACADEMIC WRITING STYLE should be followed. No to ChatGPT :)

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## Significance of the Study

This study is significant as it explores how AI-driven chatbots can improve customer support in e-commerce businesses. By automating interactions and providing real-time assistance, the chatbot can enhance user experience while reducing operational costs for companies. The findings will benefit e-commerce businesses, AI developers, and customer service teams by offering insights into chatbot implementation, optimization, and effectiveness. Additionally, the study will address challenges such as chatbot limitations in handling complex queries, user acceptance, and the ethical considerations of AI-driven customer interactions. ~~<Insert content>~~

**Commented [3]:** Itong section na ito ay nageexplain bakit yung study ay dapat at worth gawin, at kung bakit yung magiging findings mo dito ay mahalaga at makabuluhan. May magiging impact ba ito in the future? Pwede ba itong magamit sa iba't ibang field for them to develop their own technologies, etc.

Dito rin dapat ilagay yung "possible" contribution nito sa U.N. SDG. Basahin po muna ang https://www.un.org/sustainabledevelopment/sustainable-development-goals/ bago maglagay ng content. Wag magassume dahil may focus ang bawat goal.

Dito rin ilagay po ang involvement ng proposal nyo sa CvSU Thematic Area. If one or more involved areas, okay lang po basta maijujustify nyo po sa section na ito.

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## Scope and Limitations of the Study

This study will focus on developing and evaluating an AI-powered chatbot for e-commerce customer support. It will assess the chatbot's ability to handle product inquiries, order tracking, and troubleshooting. However, the study will not cover AI applications in other

areas of e-commerce, such as recommendation systems or fraud detection, nor will it analyze chatbot performance across multiple languages beyond English.

**Objectives of the Study**

This study aims to design and develop an AI-powered chatbot to enhance customer support services in e-commerce. By evaluating its performance, accuracy, and user satisfaction, the research seeks to provide recommendations for improving AI-driven customer service solutions. Specifically, it will:

1. Develop an AI chatbot capable of handling common customer inquiries in e-commerce.
2. Evaluate the chatbot's response accuracy, efficiency, and impact on customer satisfaction.
3. Identify challenges and propose improvements for AI-driven customer support systems.

**Expected Outputs**

**Expected Outputs**

The research is expected to produce a functional AI-powered chatbot prototype for e-commerce customer support. It will provide an analysis of the chatbot's effectiveness in automating responses and improving customer service efficiency. Additionally, the study will offer recommendations for optimizing chatbot interactions, addressing challenges such as understanding complex queries, and enhancing AI-driven customer engagement strategies.

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Description of outputs (specifications, datasets, algorithms, prototypes, etc.)
Description of materials to use

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**References**

Adamopoulou, E., & Moussiades, L. (2020). *Chatbots: History, technology, and applications*. *Machine Learning and Knowledge Extraction, 2*(3), 345-369.

Huang, Z., Xu, W., & Yu, K. (2020). *Deep learning for chatbot development: Applications and challenges*. *Journal of Artificial Intelligence Research, 69*(1), 113-142.

Mauldin, M. L. (1994). *Chatterbots, tinymuds, and the turing test: Entering the loebner prize competition. AAAI Conference on Artificial Intelligence*, 16-21.

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