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Property Service Agent: An AI-Driven Conversational System for Smart Property Management

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Abstract: Managing properties is a job. It means taking care of property records and talking to tenants. You also have to deal with maintenance requests and keep track of rent payments. People usually do these things by hand using phone calls or simple computer programs. This can cause problems, like delays and mistakes in the records. It also gives property owners and managers a lot work to do.

Property management needs a system. This system should be easy to use and make things simpler for everyone involved in property management. Property management tasks should not be so hard. Property management can be made easier, with a system.

This paper is, about a Property Service Agent that uses Agentic Artificial Intelligence. It helps people manage things related to their property by talking to it. The system lets tenants and property owners ask about their property check if it is available tell someone about problems that need to be fixed and update information using language. The Property Service Agent knows what the user wants. Does what is needed behind the scenes in a safe and controlled way. The Property Service Agent makes it easy for users to get things done.

The system is designed using a modular architecture that includes a conversational interface, an agentic AI layer, backend services, and a database for storing property information. Experimental results show that the system improves ease of use, reduces manual effort, and provides timely responses compared to traditional property management approaches. The proposed solution demonstrates how conversational and agent-based AI can be effectively used to enhance property management systems.

Keywords: Property Service Agent, Agentic Artificial Intelligence, Property Management System, Conversational Interface, Intelligent Automation.

I. INTRODUCTION

Property management is really important for people who own homes and buildings that they rent out to others. As more people move to cities and need places to live and work the people in charge of these properties have a lot work to do. They have to take care of properties talk to the people who rent them fix things when they break keep track of how much rent is owed and make sure all the paperwork is done correctly. Doing all of this by hand can be very hard. Take a long time and sometimes mistakes are made. Property management is a job and it involves a lot of things, like property management, property management tasks and property management responsibilities.

Property management is often done the way with people using phone calls WhatsApp messages, handwritten notes or basic spreadsheets. At first these methods are simple to use. When you have a lot of properties or tenants they become a problem. Important details can get. Things, like maintenance requests can get put off. You do not have a record of what happened.

Property management systems that are already digital usually work in a way. They have forms that you have to fill out. You have to go through many pages to get things done. You have to enter all the information by hand. Property management is still handled this way. It can be a real hassle. Property management systems need to be better.

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Artificial Intelligence is getting better and better. This is especially true for things like understanding language and having conversations, with systems. Now we have something called Conversational Artificial Intelligence that lets people talk to systems in a way. We do not have to use interfaces anymore. Conversational Artificial Intelligence allows users to talk to systems using language.
Artificial Intelligence systems that can act on their own are also very useful. These agentic Artificial Intelligence systems can do tasks by themselves. They figure out what the user wants. Then they do the work. They use tools to get things done. Artificial Intelligence is really changing the way we interact with software systems.

This paper proposes an Agentic AI-based Property Service Agent that provides a conversational interface for managing property-related activities. The system is designed to reduce manual workload, improve response time, and enhance user experience by allowing users to interact with the system in a natural and intuitive manner. By integrating conversational intelligence with backend automation, the proposed system aims to modernize traditional property management practices.

II. LITERATURE SURVEY

People have done a lot of research on using intelligence in the real estate and property management field. At first they mostly looked at how to make property records automate simple management tasks.

Sapkota in 2019 talked about using intelligence to automate tracking maintenance and make it easier for tenants and property owners to talk to each other. This study found that artificial intelligence helped people get answers faster. It only worked with set plans and did not let people have real conversations, with each other using artificial intelligence. Artificial intelligence is still used in the estate and property management field.

Recently people have been studying how AI works in systems that provide services. Kumar and Verma found out in 2023 that conversational interfaces can really make a difference in how much users, like real estate applications. Their system needed a human to help it do things in the background and it could not do tasks on its own with conversational AI.
Agentic AI is getting a lot of attention because it can plan and do things on its own.

Hosseini in 2025 said that agentic systems are very important when we want to build applications that can make decisions and use tools to do things all while staying safe and in control.

Agentic AI is really good at this.
For example Zhang and others in 2024 came up with a way to use language models that have tools built into them which helps the system think and then do things separately making it more reliable and less likely to do things it should not do. This is a deal, for agentic AI.

Although existing literature shows progress in AI-driven property management, most systems focus either on automation or conversational interaction, but not both together. There is limited research on integrating conversational AI with agentic automation in a unified property management system. This gap motivates the development of the proposed Property Service Agent.

III. METHODOLOGY

The new Property Service Agent is pretty easy to get the hang of. You can add things to the Property Service Agent. It does what you need it to do. The Property Service Agent has parts that do different things. It has one part that talks to people and another part that gets the work done and stores information. This makes the Property Service Agent really reliable and easy to work with. The Property Service Agent is made to be easy to understand so you can use the Property Service Agent without running into any problems. You can just use the Property Service Agent. It works fine.

The first layer is the user interaction layer. This is where people talk to the system using a chat. They can type what they need in their words like asking for property details or telling the system about maintenance issues they are having with their property. The conversational AI component looks at what the users type and figures out what the users want to know or do. It does this by understanding the words the users use so it can find the information in the message from the users, about their property or maintenance issues. The user interaction layer is where the users interact with the system and the conversational AI component is what helps the system understand the users. The conversational AI component is really good, at understanding what the users mean when they use the AI component to talk to the system. The system is able to provide the users with what the users need when they use the AI component. This is because the conversational AI

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component is very good. The conversational AI component helps the system understand the users. The system then uses this understanding to give the users what they need from the AI component.
The user interaction layer is actually about the users and the conversational Artificial Intelligence component. The conversational Artificial Intelligence component and the users need to work to achieve something. This is what the user interaction layer is really, about the users and the conversational Artificial Intelligence component working together.
The second layer is the AI layer. This is where the AI system really starts working. When the AI system figures out what the user wants to do the AI layer makes a plan for what needs to be done. The AI layer picks the tool, for the job. The AI layer does not change the database on its own.

The AI layer uses tools that have been checked and approved to make sure the AI system works properly. The AI system is very careful. The AI system uses these tools to get the job done. The AI system wants to make sure everything runs smoothly. The AI system has a layer that makes sure everything happens in a controlled way. This is so the AI system can keep an eye on things. We need to make sure nobody does something they should not do with the AI system. The AI system is, like a guardian that watches over everything and makes sure people only use the AI system for what the AI system meant to be used for. The AI system is very important. We need to use the AI system correctly.

The backend service layer contains business logic for property management operations such as adding properties, updating records, and retrieving information. The repository layer handles all interactions with the database. An SQLite database is used to store property details, tenant information, maintenance records, and availability status. This layered methodology improves maintainability and supports future system expansion.

IV. SYSTEM IMPLIMENTATION

The system is made using Fast API for the backend services. This is because Fast API is easy to use and it works well. The conversational agent is a part of the system. It uses a language model that can understand what the user is asking. Then it gives answers that make sense.
The frontend of the system is basically a chat window. This is where users can talk to the Fast API system. They do not need to know a lot about technology to use it. The conversational agent and the Fast API system work together. They help users when they need it.
The Fast API system and the conversational agent are designed to be easy to use. They are made so that the Fast API system and the conversational agent are simple, for everyone.
The backend does a lot of work that the AI agent can use to get things done. It has a lot of tools that help with things like adding information and updating the rent. The backend also checks if something is available and keeps track of maintenance requests.
The system looks at what people enter at points to make sure everything is correct. This helps to stop mistakes from happening. The backend operation is really important, for the AI agent. The AI agent needs the backend operation to work properly. The AI agent uses the backend operation to get a lot of things done. The backend operation and the AI agent work together to make things work smoothly.
The system is set up so that it keeps the thinking and doing parts separate. The AI agent does the thinking. Makes plans. The services that work behind the scenes do the work, with the data.
This makes the system more reliable. You can easily see what is happening. What has been done.
The system and the AI agent work together to make sure everything runs smoothly. The AI agent and the system make a team. The system and the AI agent do this so that the AI agent and the system can work together. The Artificial Intelligence agent is really good at understanding things and making plans. The backend services are what actually do all the work with the data, which's a good thing, for the system. The Artificial Intelligence agent does its job and the backend services do theirs so the system works well.

V. RESULTS AND DISCUSSION

The Property Service Agent was tested with things that people have to deal with when they're, in charge of the Property Service. For example people who take care of properties have to handle things. The Property Service Agent was tested to see how it can help with these things when people are taking care of the Property Service.

The website did lots of things, such as signing up properties. That was really useful. It helped with the process of signing up properties, which was a part of what the website was for, like signing up properties to be listed.
The Property Service Agent was really helpful to the tenants when they had questions about things. The Property Service Agent took the time to answer all the questions the tenants had. This made it a lot easier for the tenants to understand

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what was going on with their property. The Property Service Agent was very good, at helping the tenants with their questions.

The Property Service Agent talked to people about issues, with the properties that need to be fixed. He said the properties have some problems that must be taken care of. The Property Service Agent wants people to know what is going on with the properties that need to be fixed.

The Property Service Agent also checked if the properties are available for people to use the properties. They want to make sure the properties are ready for people to use the properties. The Property Service Agent does a lot of work to make sure properties are taken care of. They make sure the Property Service Agent does everything correctly so the properties are okay. The Property Service Agent has to do things to take care of the properties properly.

The Property Service Agent was really good at understanding what the user wanted to do. They did a job of figuring out what the user needed to do about the Property Service Agent issues. I had an experience, with the Property Service Agent because the Property Service Agent knew exactly what I needed from the Property Service Agent.

The Property Service Agent was very helpful. The Property Service Agent made it easy for the user to get things done with the help of the Property Service Agent. The Property Service Agent did a job with these tasks. It really worked well. The reason the Property Service Agent worked well is that the Property Service Agent did these things and that is why the Property Service Agent was successful.

The Property Service Agent is really useful for people who own properties. It helps these people with their properties. The Property Service Agent does a lot of things to make sure peoples properties are taken care of. This is very helpful, for people who have properties and need some assistance.

The Property Service Agent is very good, at understanding what people want when they use the Property Service Agent. They are able to figure out what people need to take care of their properties. I like the Property Service Agent because they do a job of helping people with the Property Service Agent. The Property Service Agent is really helpful when people need to take care of their properties using the Property Service Agent.

When people use the Property Service Agent it does a job of figuring out what they want. The Property Service Agent is really good at this. This is because the Property Service Agent knows what people need when they are using the Property Service Agent. The Property Service Agent is very helpful, to people who use the Property Service Agent.

The system worked the way it was supposed to when the user gave the system instructions. The system took care of everything by itself without needing any help from anyone. The system is really good, at handling things that need to be done for the properties. The system did a job of taking care of the properties because the system is made to do that. The system always did its job. It worked well so people knew they could trust it to work right. The system is very good, at managing properties. The system manages properties every time the user needs the system to manage properties. The system does a job of managing properties with the system because the system is made for managing properties.

People can find out about properties by talking to the property system. It is really easy to use the property system. When you talk to the property system it gives you answers quickly. The property system does what you want every time you talk to the property system. The property system is very helpful when you need to know something, about properties. You can just talk to the property system. It will give you the information you need about properties.

The property system is really great. It is a lot better than the way of managing properties. The property system makes everything easier, for users of the property system. This is what makes the property system so good. When people use the property system they can see what is going on with their properties. The property system is really good because it makes things clear, for people who own properties. People can understand what is happening with their properties when they use the property system. The conversational interface made the system more accessible, particularly for users with limited technical knowledge. Overall, the Property Service Agent proved to be effective in saving time, reducing workload, and ensuring safe and correct execution of property management operations.

VI. CONCLUSION

This paper is about a Property Service Agent that uses Artificial Intelligence to help people. The idea behind the Property Service Agent is to make managing properties easier for everyone. The Property Service Agent system allows property

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owners and tenants to communicate with it in a way. They can use the Property Service Agent to manage property details. They can also use the Property Service Agent to check if a place is available. If something is broken they can report it to the Property Service Agent.

The Property Service Agent uses Artificial Intelligence and automation. This reduces the amount of work that people have to do. It also makes the Property Service Agent easier to use. The Property Service Agent is designed to be helpful to people who own properties and people who rent properties. The Property Service Agent can make things easier, for property owners and tenants.

The implementation results show that the system provides accurate responses and handles property-related operations efficiently. Compared to traditional property management methods, the proposed solution offers better organization of data and faster communication. Overall, the Property Service Agent demonstrates how agentic and conversational AI can be effectively applied to create a more user-friendly and efficient property management system.

VII. FUTURE WORK

Future enhancements to the system include integrating online rent payment gateways, implementing role-based authentication for owners and tenants, adding predictive maintenance features, supporting multilingual and voice-based interaction, and deploying the system on cloud platforms. These improvements will further enhance system scalability and accessibility.

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