

Groundbreaking Artificial Intelligence (AI)

Idaho Housing and Finance Association

Management Innovation: Technology

HFA Staff Contact

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Groundbreaking Artificial Intelligence (AI)

Overview

The Idaho Housing and Finance Association (IHFA) has successfully implemented an innovative artificial intelligence (AI) solution, marking a significant milestone in our HFA being a technology leader. This effort brings together AI technologies like language models, intelligent document processing, and autonomous workflow assistants. By leveraging these advanced tools, IHFA is able to streamline its operations and set a new standard for the industry.

Large Language Models (LLM)

The heart of IHFA’s AI solution lies in the Large Language Models that have been trained with IHFA documentation, guidelines, and agency knowledge from our data collections. This technology is designed for speed, security, and continuous improvement through automated optimization, iterative fine-tuning, and self-supervised learning.

Our AI solutions have transformed the way we work, offering a range of game-changing features. For example, The AI can upload, read, and interact with documents and websites. This empowers our employees to quickly access information and streamline workflows.

We incorporated the ability to select from multiple large language models, compare results, and experiment with different outputs. This allows staff to find the best answers and leverage the strengths of various AI models to achieve very great output.

Most importantly, IHFA’s AI systems is hosted internally at IHFA’s data center. It is disconnected from any cloud provider or the internet. This safeguards us that sensitive data remains confidential and secure within our organization, in line with IHFA's commitment to protecting personal information (PII).

Advanced AI Capabilities

IHFA’s AI solution relies on software that utilizes the latest “open-source” frameworks available to everyone. This allows us to rapidly scale our AI system's processing power as it accumulates more knowledge and becomes increasingly popular.

What we have done

Intelligent Virtual Customer Service Agent

The Virtual CS Agent is an integral part of IHFA's customer service experience. By leveraging its contextual understanding, the Virtual Agent reads borrowers' loan information on a call-by-call basis. It then provides customer service agents with personalized answers to a vast array of questions, empowering the human customer service agents to offer more tailored advice and guidance that better serves our clients.

By integrating this cutting-edge AI into IHFA's internal interactions, we can:

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- Improve customer satisfaction through precise and personalized communication.
 - Streamline support calls by automating routine inquiries and freeing up human representatives for more complex issues.
 - Leverage AI-powered insights to elevate the overall customer experience.

Autonomous AI Underwriter

In process is our Autonomous AI Underwriter has helped transform IHFA's loan acquisition operations, transforming the closed loan purchase process with better speed and accuracy. This intelligent document processing AI can:

- Autonomously ingest closed loan packages, quickly comprehend their contents, and categorize the documents with remarkable accuracy, reducing processing time and increasing efficiency.
- Provides real-time intake of data from closed loan packages, ensuring seamless entry into our loan purchasing database with enhanced accuracy.
- A typical loan acquisition may take over an hour and read and find pertinent data, the AI can do this job in seconds.

Creative AI Catalyst

This AI has helped IHFA's Market and Communication department by deploying generative AI models that produces high-impact multimedia content on-demand and marketing materials. This innovative solution has helped with the productivity of our marketing and communications efforts by:

- Automatically generating creative concepts, streamlining idea development, and reducing time-to-market, allowing us to quickly respond to changing market conditions.
- Producing high-quality visual content, including images, videos, and graphics, to support marketing campaigns and internal initiatives with precision and speed.
- Enabling real-time adaptation to shifting customer preferences, ensuring that our messaging and visuals remain relevant and effective.

Personalized AI Assistant

Some IHFA employees have direct access to the personalized AI chat assistant within their workspace. This AI-powered tool provides real-time support for a wide range of tasks, empowering employees to:

- Spark inspiration and kickstart any project or document with ease.
- Focus on high-value activities by automating routine tasks, freeing up time for more strategic work.
- Tap into data-driven insights to inform decision-making and optimize process efficiency.
- Enjoy AI-assisted grammar checking, receive innovative ideas and suggestions, and more.

This personalized AI assistant is designed to augment employees' skills and productivity, making them more efficient and effective in their work.

History of AI Usage

In 2023, staff began utilizing AI models as part of their daily workflows. IHFA needed a strategic deployment enables employees to leverage inhouse and fine-tuned AI-driven insights and recommendations to streamline tasks, enhance decision-making, and ultimately drive better business outcomes. AI at IHFA was born.

IHFA purchased and built the computer system from mostly used parts on eBay for about \$2500 (see visual aids).

Data Protection

IHFA is deeply committed to protecting the integrity and confidentiality of our clients' personal information (PII). All AI model usage must be internal, not connected to any cloud provider or the internet. This strict policy ensures that no PII data is uploaded to any cloud-based LLM providers, thereby maintaining the confidentiality and security of our clients' sensitive information.

Operational Impact

IHFA has already realized significant operational cost savings within the first year. However, the economic impacts pale in comparison to what this future-shaping technology represents – a sustainable source of competitive advantage enabling IHFA to fulfill its mission of delivering affordable housing opportunities across Idaho for decades to come.

Ethical and Secure AI

Every component was constructed according to IHFA's principles for developing trustworthy, ethical, and robustly secured AI systems. We have installed policies and guardrails for AI decision-making in all processes. Fairness testing procedures root out model bias. Privacy enforces secure data barriers walling off sensitive information. Transparency and governance controls promote responsible technology deployment with human oversight.

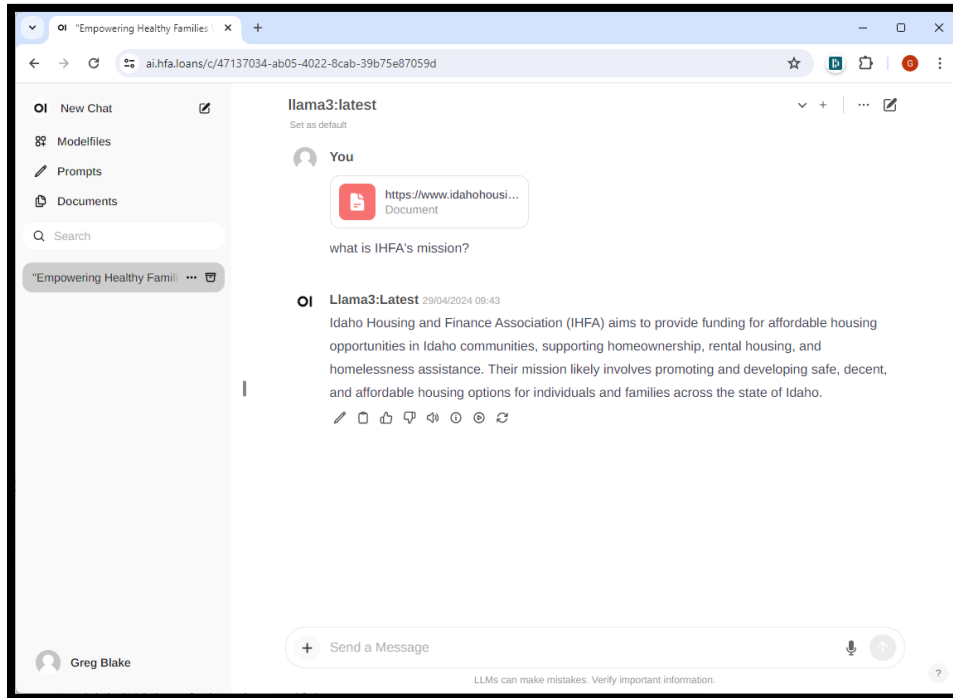
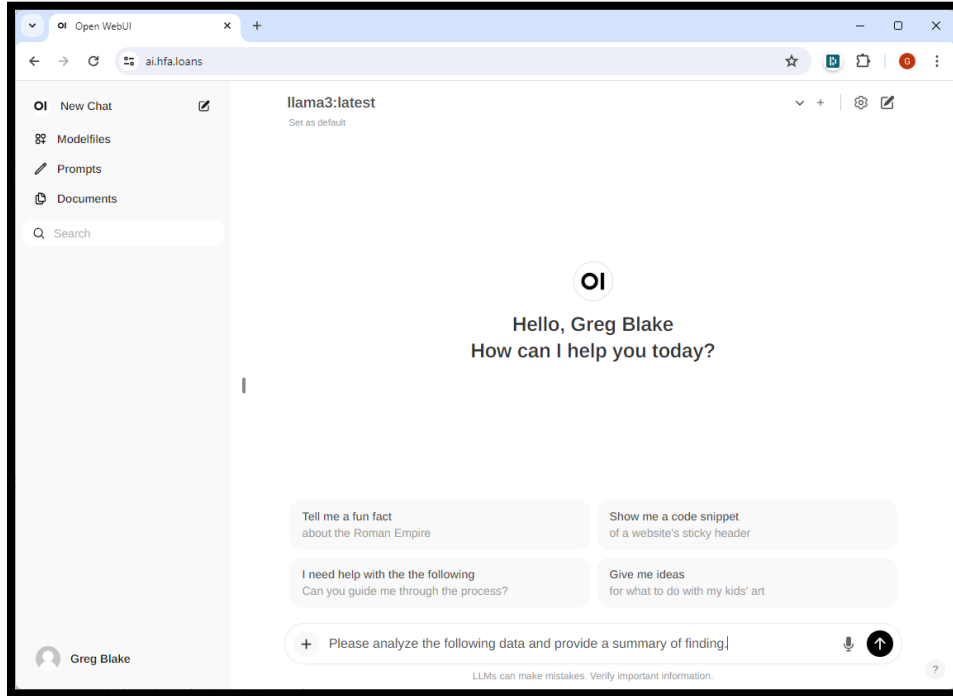
Conclusion

Idaho Housing's innovative use of artificial intelligence (AI) is revolutionizing what is possible in serving our mission. We believe this achievement sets a new standard for the entire housing finance industry, demonstrating how future HFAs can leverage AI to produce operational efficiency.

The award submission deserves an award, because it shows that HFA's can harness these new AI related technologies with the hope to inspire other HFAs to adopt similar strategies and reap the benefits of AI-driven innovation.

Visual Aids

GUI - Artificial intelligence Output Sample.



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The Artificial Intelligence Server Room (AI wizard Peter shown)




AI computer with 8 GPUs and 88 gigabytes of processing power.

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You
a photorealistic image of a couple buying their first house. The couple is happy.

AI **A_Image Generator**



a photorealistic image of a couple buying their first house. The couple is happy. To make this photorealistic image, intricate lighting, and exact coloring, highly detailed, photo-realistic, 8k, high dynamic range image, 3d render art, octane, unreal engine,

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