

Overview of Generative AI Applications and their Impact

Instructor

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Outline

1. What are Generative AI Applications

2. Examples of Generative AI Applications

3. Why End-to-End Generative AI Applications? - Motivation

4. Focus of this course

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What are Generative AI Applications

- Applications that solve a problem or use-case e.g. QA Chatbot
- Leverages a Large Language Model (LLM) like ChatGPT
- Inputs usually include a prompt and optionally files
- Has a backend that takes care of the logic and computation
- Has a frontend (user interface) to show the results

Outline

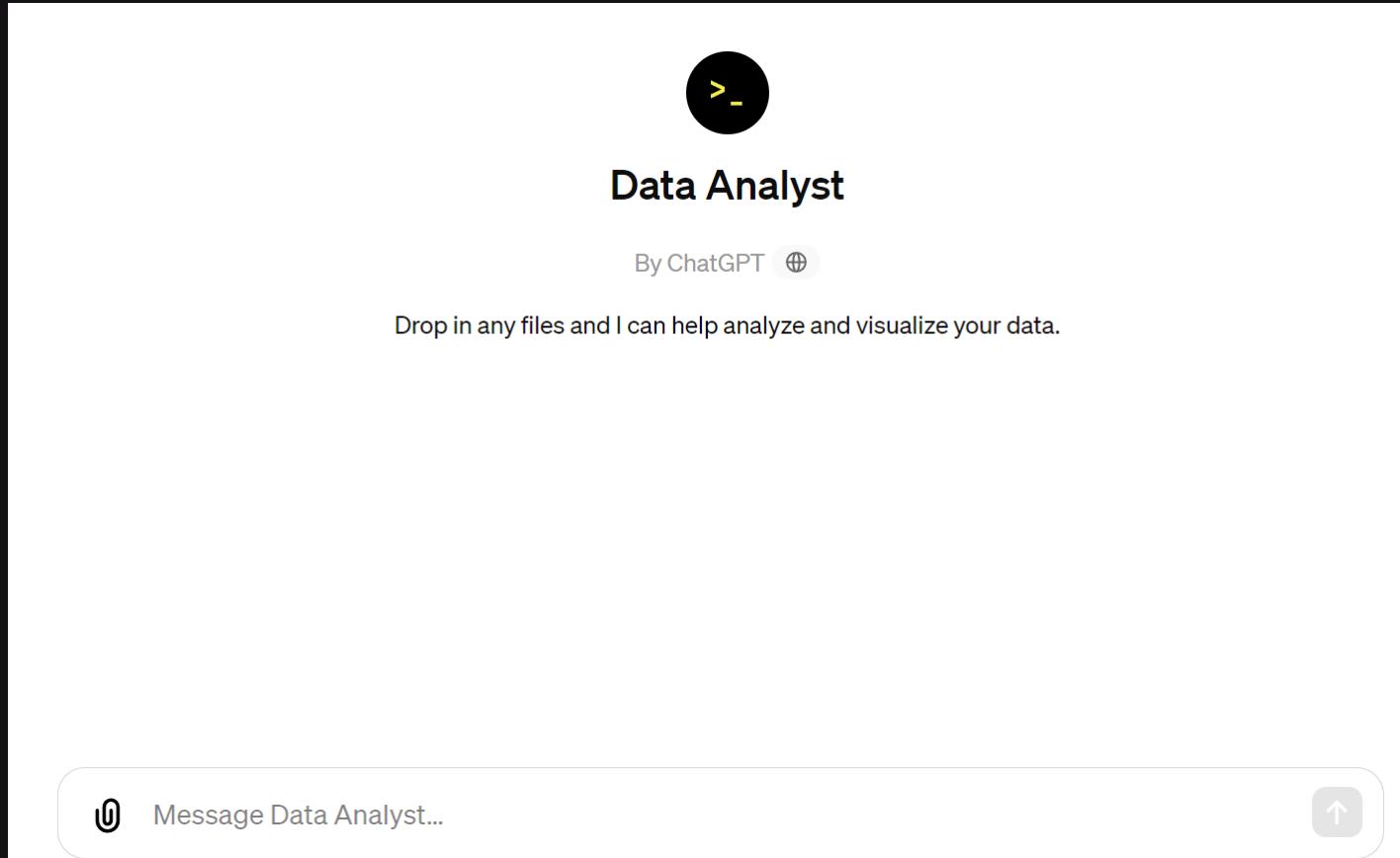
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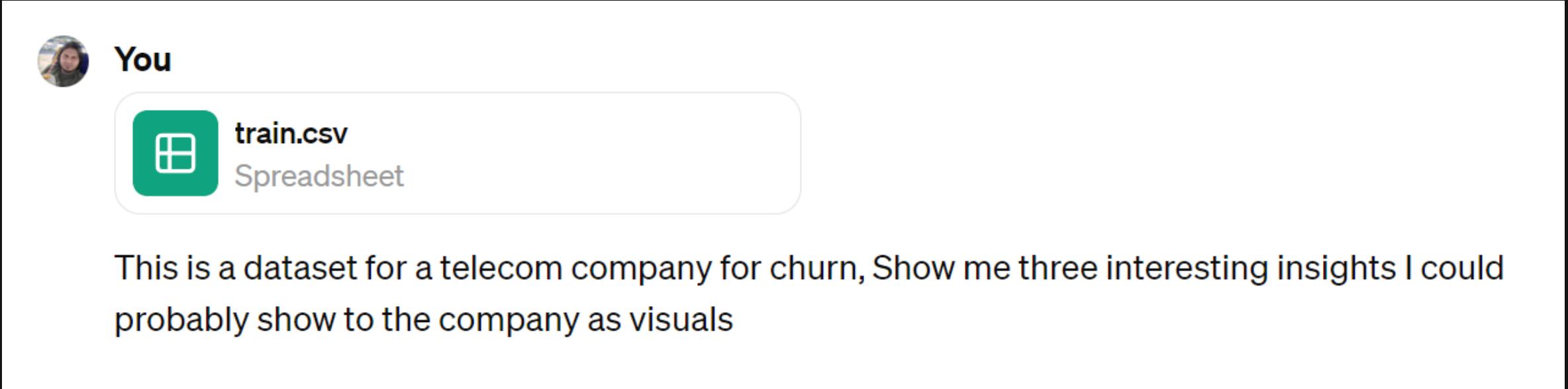
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Example of a Generative AI Application



Data Analyst by ChatGPT

Example - Data Analyst by ChatGPT



The screenshot shows a messaging interface. On the left, there is a profile picture of a person with dark hair and a blue background. To the right of the profile picture, the word "You" is written in a bold, black, sans-serif font. Below this, there is a file attachment. It consists of a green rounded square icon with a white grid pattern inside, followed by the text "train.csv" and "Spreadsheet" in a smaller, gray font. The main message area contains the following text:

This is a dataset for a telecom company for churn, Show me three interesting insights I could probably show to the company as visuals

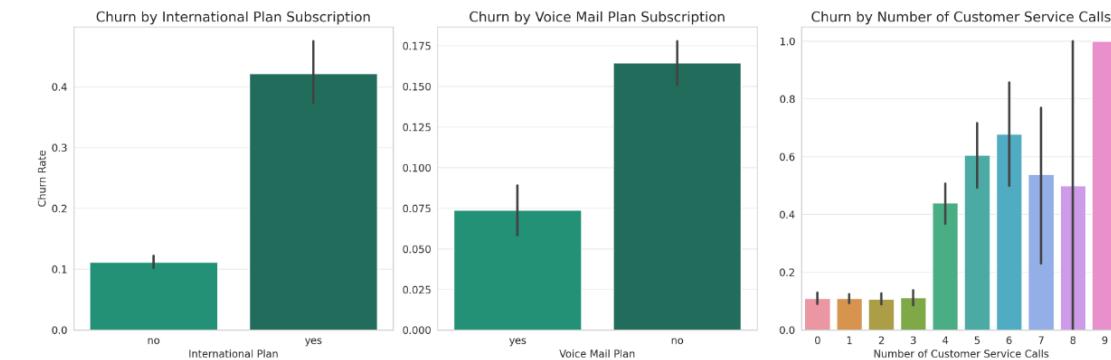
Input Prompt

Example - Data Analyst by ChatGPT

To derive three interesting insights that could be valuable to the telecom company, I will analyze the data focusing on:

1. The relationship between churn and features such as international plan subscription, number of customer service calls, and voice mail plan subscription.
2. Usage patterns (day, evening, night, and international calls) and their potential impact on churn.
3. Demographic factors (e.g., state or area code) that might influence churn rates.

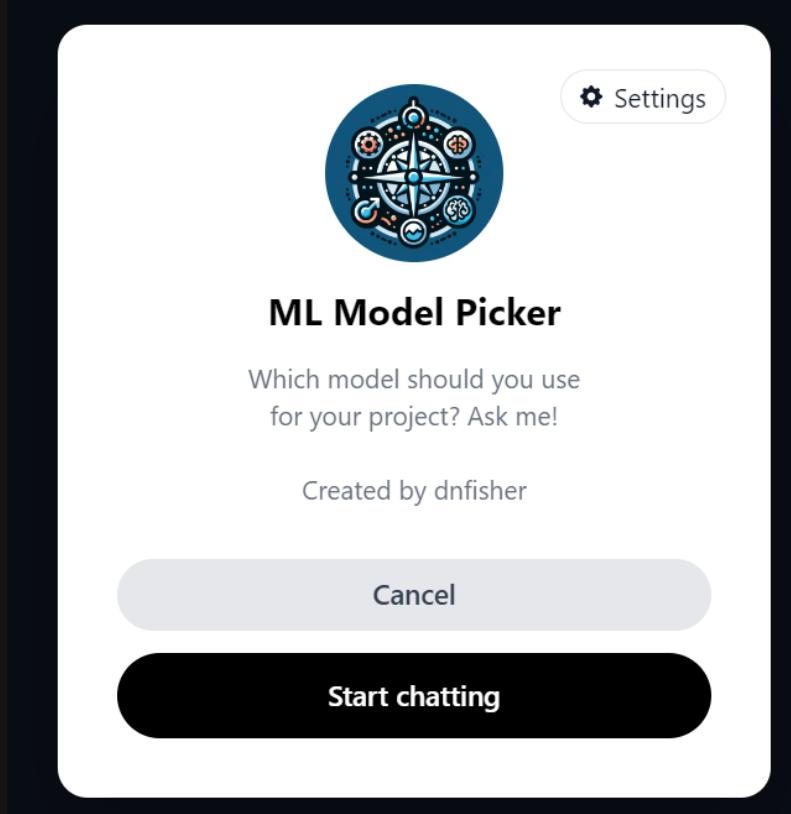
Let's start by visualizing the first insight regarding the relationship between churn and specific features such as international plan subscription, number of customer service calls, and voice mail plan subscription. [→]



The visuals offer some intriguing insights into customer behavior and churn:

Response

Example - ML Model Picker on HuggingChat



Example - ML Model Picker on HuggingChat

The screenshot shows a dark-themed chat interface titled "ML Model Picker". A user message asks about detecting fraud transactions without labeled data. The AI response explains the challenge of training a machine learning model without labels and provides two suggestions: collecting more data or using unsupervised anomaly detection techniques. The AI offers to assist further if pursued.

What is an appropriate model to use to solve a problem where I am trying to detect fraud transactions but my company didn't bother to label the transactions at all!

⌚ Ah, that's quite a pickle! 🤔 Unfortunately, without labeled data, it would be challenging to train any machine learning algorithm effectively. Without labels, there's no way for the computer to know whether its predictions are correct or not. This means we can't evaluate how well our model performs, making it difficult to improve upon.

In this situation, I have two suggestions:

1. **Collect more data:** If possible, try to gather additional transactional data with clear indicators of legitimate vs. fraudulent transactions. Even if it takes some time, having properly labeled data will allow us to build a reliable detection system.
2. **Use unsupervised anomaly detection techniques:** In cases where labeled data isn't available, unsupervised anomaly detection methods might still provide useful insights into potential fraud patterns. These approaches identify unusual behavior in large datasets by identifying deviations from expected norms rather than relying solely on known positive examples. However, keep in mind that these methods may require significant domain knowledge and tuning to achieve optimal results.

If you do decide to pursue one of these options, please let me know so I can assist further! 💬

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Why End-to-End Generative AI Applications?



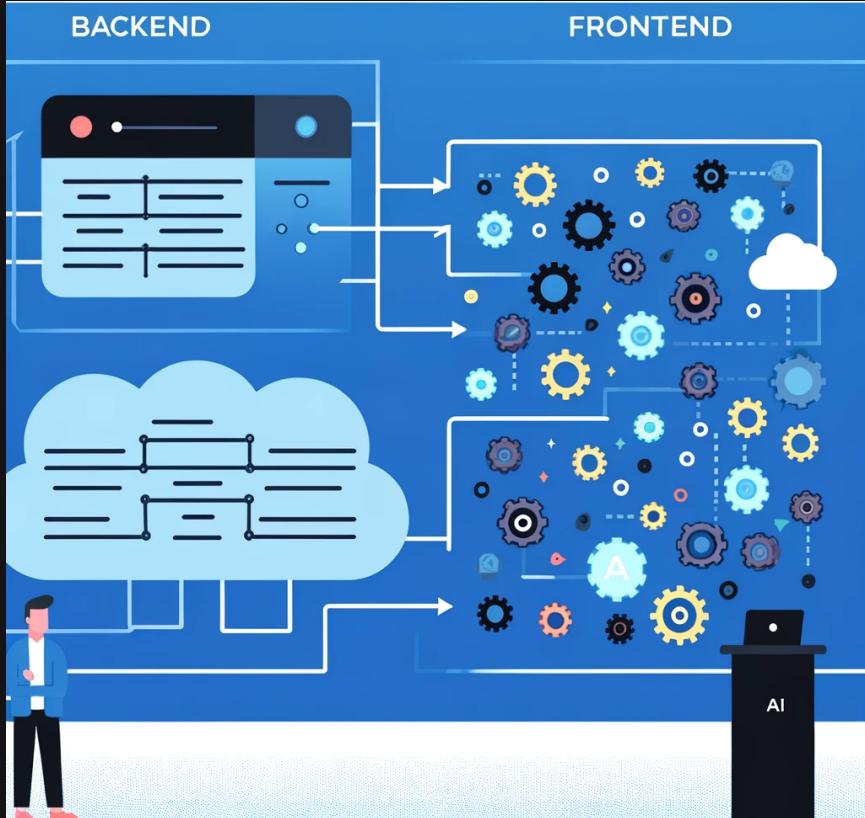
Business Stakeholders hate
code-focused apps and demos

Why End-to-End Generative AI Applications?



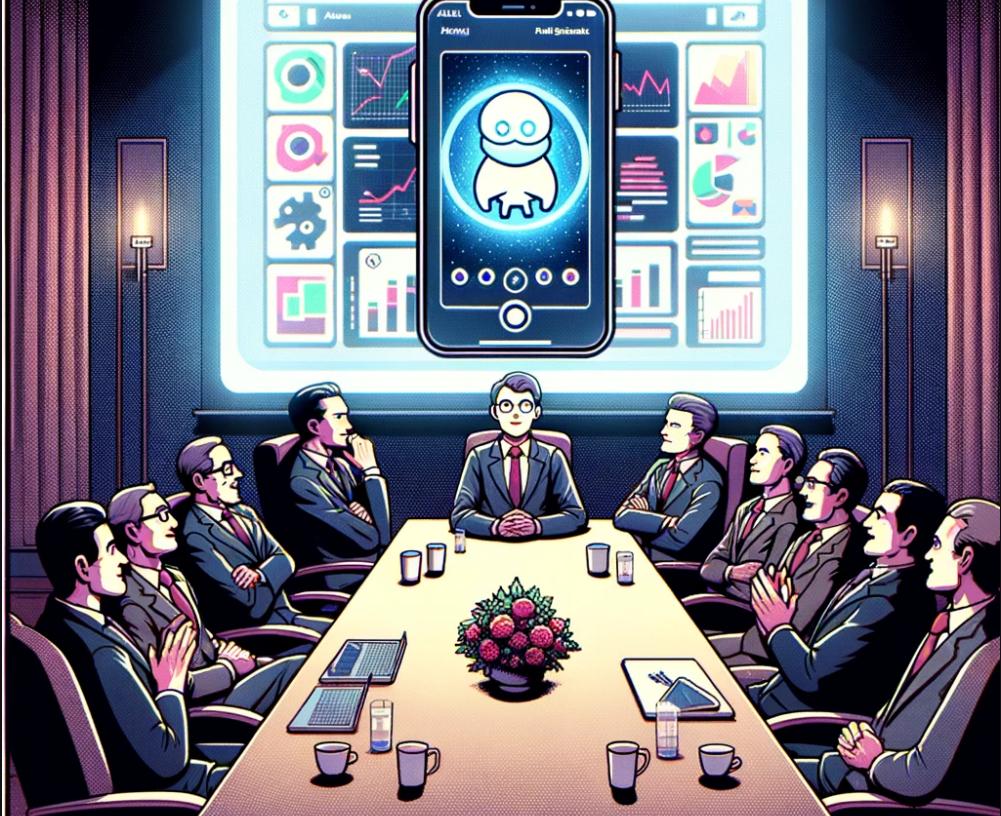
Building an end-to-end Generative AI PoC
in a short time can be a daunting task

Why End-to-End Generative AI Applications?



We will show you how to build end-to-end Generative AI apps as PoCs combining backend and frontend

Why End-to-End Generative AI Applications?



Showcasing UI-based Generative AI PoCs makes it easy for business stakeholders to understand

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Point 1

Understand what are end-to-end Generative AI Apps



Point 4

Code focused platforms and tools to build Generative AI Apps



Point 6

Hands-on tutorials and projects to build your own Generative AI Apps



Point 2

Standard architectures and tools for building Generative AI Apps



Point 3

No-code focused platforms and tools to build Generative AI Apps

Point 5

Building quick end-to-end Generative AI Apps with just Python



Point 7

Popular Case Studies of Generative AI Apps

Thank You
