



## AkashX.ai: FinDocGPT – AI for financial document analysis & investment strategy

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### 1. Introduction

This challenge invites you to build an AI-powered tool that can transform how financial data is analyzed, predicted, and used for real-time investment decisions. Your goal is to create a solution that processes **financial reports**, forecasts market trends, and generates actionable buy/sell recommendations based on the predictions.

#### The Vision:

Create an AI system that:

- Provides deep insights into financial reports.
- Predicts market trends.
- Formulates investment strategies for real-time decision-making.

### 2. Challenge Breakdown – Think in 3 Stages

#### Stage 1: Insights & Analysis (Document Q&A)

Develop a system to process **financial documents** (earnings reports, filings, press releases) and extract key insights.

##### Primary Objectives:

- **Document Q&A:** Answer questions based on financial data (e.g., What is the company's revenue for the quarter? What are the key risks?)
- **Market Sentiment Analysis:** Quantify sentiment from financial communications (positive, negative, neutral).
- **Anomaly Detection:** Identify unusual changes in financial metrics that may signal risks.

Organizing team: Linn Bieske, Kai Wiederhold, Lisa Sklyarova, Nico Fröhlich

## Stage 2: Financial Forecasting

Integrate **forecasting** capabilities to predict future financial outcomes based on historical data.

### Primary Objectives:

- **Predict Financial Trends:** Forecast stock prices, earnings growth, and market performance.
- **External Data Integration:** Enhance predictions with data from **Yahoo Finance API**, **Quandl**, or **Alpha Vantage**.
- **Forecasting Models:** Build models to predict stock movements, earnings, or market risks.

## Stage 3: Investment Strategy & Decision-Making

Using insights from **Stage 1** and **Stage 2**, develop an **investment strategy** to recommend buy/sell actions.

### Primary Objectives:

- **Investment Decision-Making:** Based on predictions, recommend whether to **Buy** or **Sell** a stock.
- **Strategic Decision Support:** Use financial data, market sentiment, and forecasts to build clear investment recommendations.

## 3. Dataset Details

The **FinanceBench** dataset includes:

- **Earnings Reports:** Financial documents with revenue, profit, expenses, etc.
- **Market Data:** Historical stock prices, trading volume, and financial indicators.
- **Sentiment Data:** Text data from earnings calls, press releases, and news articles.

### Example:

- **Earnings Reports:** Includes fields like **quarterly revenue**, **net profit**, and **expenses**. The goal is to predict the company's next quarter performance.
- **Market Data:** Includes stock price history and trends used for forecasting.
- **Sentiment Data:** Articles or transcripts reflecting market sentiment about a company or industry.

## 4. Technical Requirements

- **FinanceBench Dataset Integration:** Use and integrate the **FinanceBench** dataset throughout all stages of the challenge.

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- **AI/ML Models:** Implement models for **text analysis, financial forecasting, and decision-making**.
- **Real-Time Processing & Visualization:** Build a **web-based application** for real-time querying, with interactive visualizations (graphs, charts) to present predictions and insights.

## 5. Evaluation Criteria

Submissions will be evaluated on: Please define and report clear benchmarking metrics

- **Accuracy of Predictions:** How well does the model forecast financial trends?
- **Effectiveness of Q&A:** How accurately can the system answer financial questions?
- **Investment Strategy:** How well does the model recommend buy/sell actions based on predictions?
- **User Interface:** The usability and clarity of the web interface.
- **Innovation:** Creativity in combining financial analysis and strategy development.

## 6. Why This Challenge Matters

AI-driven financial intelligence is rapidly transforming how decisions are made in the financial industry. By creating a tool that can analyze documents, forecast financial trends, and formulate investment strategies, you'll be helping shape the future of finance.

## 7. Resources

- **FinanceBench Dataset:** [FinanceBench GitHub Repository](#)
- **External Data Sources:**
  - Yahoo Finance API
  - Quandl
  - Alpha Vantage

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