

# FinTech

## Case Study 3. Harnessing data with artificial intelligence and machine learning

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# Learning outcomes

- ▶ Examine how AI assists traders through high-frequency trading
  - ▶ Articulate how AI and machine learning are used in financial trading
  - ▶ Assess the efficacy of FinTech for financial trading
- ▶ Assess how cloud services and AI can be applied to financial services
  - ▶ Investigate the potential of cloud-based applications in financial services
  - ▶ Debate the future role of established organizations in the disruptive tech landscape

# Overview

1. **Harnessing the power of machines in financial markets**
2. The potential of cloud-based applications in finance

# Case study 1

- ▶ **Domeyard: Starting a High-Frequency Trading Hedge Fund**
  - ▶ Founded in 2014 by three MIT graduates
  - ▶ High-frequency trading (HFT)
    - ▶ Aims to buy and sell large volumes of shares in fractions of a second
- ▶ Read through the case study and consider the following:
  - ▶ What challenges did Domeyard face when looking to establish itself in the financial sector?
  - ▶ What are the main limitations of applying artificial intelligence and machine learning to financial trading?
  - ▶ In addition to back-testing trading strategies, how else might artificial intelligence and machine learning be applied to HFT in the future?

# Speed, signals, and high-frequency trading

## ▶ Video 3-4

- ▶ Christina Qi: founding members of Domeyard
  - ▶ Motivation for starting a high-frequency trading firm
  - ▶ How AI and ML help quantitative hedge funds improve their trading
  - ▶ How regulation might impact the trillion-dollar hedge-fund industry

# Overview

1. Harnessing the power of machines in financial markets
2. **The potential of cloud-based applications in finance**

## Case study 2 - Summary

- ▶ **AI and the ML Finance: Cogent Labs and the Google Cloud Platform**
  - ▶ Potential of cloud-based applications in finance
  - ▶ Relationship between **Cogent Labs** and **Google Cloud Platform**
    - ▶ Cogent Labs: Tokyo-based machine-learning software firm
    - ▶ Google Cloud Platform: Top cloud-computing service providers
  - ▶ Cogent's current product offerings:
    - ▶ Application that turns handwriting into data
    - ▶ Natural-language-understanding platform that helps decode the text of customer complaints
    - ▶ Forecasting tool to predict daily trends in the stock market

## Case study 2 - Question

- ▶ Read through the case study and consider the following:
  - ▶ Does Cogent, or any software startup firm acting as an intermediary in this market, have a scalable and sustainable business model?
  - ▶ What options does Cogent have for entering and remaining relevant in this market?
  - ▶ Should they continue to develop machine-learning applications to run on the cloud and to sell to financial-service firms? Or should they merge with one of the major cloud providers to custom-build their products for financial-services clients?