Artificial Intelligence at Bristol Gate



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What is What?





Evolution of AI





Why Now?



"90% of the data in the world today has been created in the last two years." – The Economist



Why Toronto?



5



Many Different Applications



"AI is the new electricity" Prof Andrew Ng



Radiology Application



"If you work as a radiologist you're like the coyote that's already over the edge of the cliff but hasn't yet looked down so it doesn't realize there's no ground underneath him" Prof Geoffrey Hinton



The algorithm learns the nuances hidden from the human eye and **augments** the knowledge and expertise of a radiologist. Radiologists are essential in harnessing the power of AI to solve the most challenging problems in their field!

A Cool Technology

Google data centers house thousands of servers that power *Google Search, Gmail* and *YouTube*. Keeping things running reliably & efficiently is mission critical.



30% reduction in energy consumption!

How BG Uses Machine Learning





Gradient Boosting Machine in Action







- The objective is to predict dividend growth for the next 12 months
- We use a tree-based algorithm which iteratively strengthens the model's accuracy
- The final prediction is an average of predictions from many trees
- The model decides on the factors that matter the most, no human bias

Model Features





It Works!



Average Dividend Growth Prediction Error



Our dividend growth prediction is more accurate than analyst estimates through time with smaller error rate

Accuracy Improved



Ratio of Analyst Estimate Error to Bristol Gate Prediction Error



Dividend Growth **prediction error** by analysts is at best 1.4x and at worst 2.6x our machine learning model

Why Predict Dividend Growth?



Annualized Total Return of Different Portfolios



Note: Each portfolio is constructed from an equal weight basket of stocks selected from the S&P 500 universe and reconstituted annually

What's Next?



Deep Learning

- Subfield of machine learning, functions more like a human brain
- More interesting results but also takes more data to train
- Let the algorithm figure out the features



Learn Produce Shakespeare Shakespeare

BG Exploration Phase

- Read and interpret company filings, transcripts and presentations
- Sentiment analysis for our universe of stocks



Algorithm Analyzes Company Filings

Bristol Gate Investment Process



The man & machine approach



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