ML & AI at the Bank of Canada

Banca d’Italia Workshop on Big Data and Machine Learning Applications for Central Banks

Joseph Hickey (Data Scientist)

Patrick Labelle (Statistical Team Lead)
§ Siloed efforts to employ ML/AI
§ Emphasis on experimentation
§ Varying levels of maturity across business lines
§ Need for enterprise wide strategies and solutions
  › Digital @ the Bank
  › Enterprise Data and Analytics Strategy
Digital @ the Bank
“Becoming a ‘Digital First’ central bank”

Understand the implications of digitalization for the economy

Improve our analysis, decision making and operations by embedding a culture of digital-first

Data Driven & Digital First Analytics
Advanced Analytical Skills

EDAS
“Be the leading central bank in the adoption of advanced analytics and use of data”

Leverage data to improve decision making, business insights and operational efficiency.

Enable and promote the responsible and secure use of data.

Enterprise Value
ML & AI
Big Data

Strong Data Management & Governance
Robust Infrastructure

Big Data
ML & AI
Projects

Bank of Canada-wide

- Digital currency
  - Implications of central bank digital currency on the financial system and wider economy
- FinTech
  - Exploring how distributed ledger technology affects payment systems
- Text analytics
  - Assessing Chinese labour market conditions using newspaper text (Bailliu et al., 2019)
- Reinforcement learning in large-value payment systems
- Using microdata to measure consumer credit stress

Digital Economy and Advanced Analytics group

- Text analytics and machine learning
  - Extracting uncertainty and sentiment measures from BoC Monetary Policy Reports (Binette & Tchebotarev, 2019)
  - Creating an indicator of Canadian mining sector activity from newspaper articles
  - Predicting macroeconomic indicators from alternative time series data (e.g. media)
- Network analysis and agent-based models
  - Inter-nation sentiment network as assessed from media articles: predictor of trade developments?
  - ABMs giving rise to emergent properties, e.g. market share structure in set of competing service providers
- Digital economy
  - Internet economy, labour dynamics, inflation, and international trade
TO JOIN:

1. Send email: jhickey@bankofcanada.ca

OR

2. Search on LinkedIn for: “Digital Economy and Advanced Analytics”
References


- J. Bailliu et al., “Can media and text analytics provide insights into labour market conditions in China?” Int. J. Forecasting, 35:1118-1130 (2019)

- “Digital Economy and Advanced Analytics” LinkedIn group: https://www.linkedin.com/groups/13735610/