



Nowcasting Macroeconomic Indicators using Google Trends



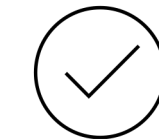
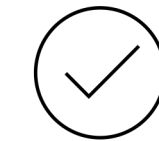
Presented By:
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Harpreet Kaur
Jagdeep Brar

BACKGROUND:

- ❖ Main aim is to nowcast macroeconomic factors (GDP, Retail Trade Sales and E- Commerce) using Google Trends Data
- ❖ Using Pytrends package of python for fetching Google trends data
- ❖ Need to present dashboard, report and presentation at the end.

OVERALL PROGRESS

- ❖ Data Cleaning and Wrangling done
- ❖ Time series for all the three factors made stationary
- ❖ Econometric Model fitting (DFM, ARMA Model)
- ❖ Machine Learning Model fitting (LASSO, Random Forest, Boosting)
- ❖ Model Finalized for all the three indicators
- ❖ Nowcasting for the indicators and bootstrap



PREVIOUS WEEK PROGRESS

❖ *Scheduled Task for Last week : Finalizing the model and applying bootstrap to that. Nowcast the indicators.*

❖ *Work Progress:*

- *Fitted machine learning models*
- *Used cross validation for tuning the parameters*
- *Finalized the models with approval from the partners*
- *Nowcasted the indicators*
- *Applied bootstrap to the models*

RESULTS

- ❖ Finalized the models for all the three indicators
- ❖ Nowcasted the data and have done bootstrap on them.

Macroeconomic Indicators	Selected Model
GDP	ARIMA
Retail Trade Sales	Random Forest
E- Commerce	XG Boost

ROADBLOCKS:

- ❖ Calling Google Trends API multiple times blocks
- ❖ Solution as discussed with Partners : To use only single sample rather than working with multiple

NEXT WEEK PLAN

- ❖ Share the sketch for the dashboard with the partners and get it approved
- ❖ Create the dashboard
- ❖ Modify the selected model code and try to improve its efficiency, if time permits

ARE WE ON TRACK?

MEETING WITH THE PARTNERS:

- ❖ On Track as mentioned in the proposal document
- ❖ Scheduled weekly meetings on Thursday
- ❖ Partners are satisfied with what we have done so far
- ❖ Clear all the doubts as soon as we ask them over MS teams/ mails

INDIVIDUAL AND TEAM EFFORTS

- ❖ Work assigned equally
- ❖ Three macroeconomic factors divided among three contributors
 - Aishwarya Sharma —————➤ Retail Trade Sales
 - Harpreet Kaur —————➤ E- Commerce
 - Jagdeep Brar —————➤ GDP

All three factors have different data sets, keywords (Queries and Topics), categories and need different efforts but with similar goal.

Timings for work: Monday to Friday, 9:30 AM – 5:30 PM

BRIEF EXPLANATION VIA CODE

- ❖ Brief Overview about the code we are doing is explained using jupyter notebook



Link for image: <https://technology.anis.nl/data-analytics/quickest-way-to-try-out-jupyter-notebook-zero-install-3-cli-commands-and-5-minutes-to-action/>