Scotiabank Data Science Discovery Days

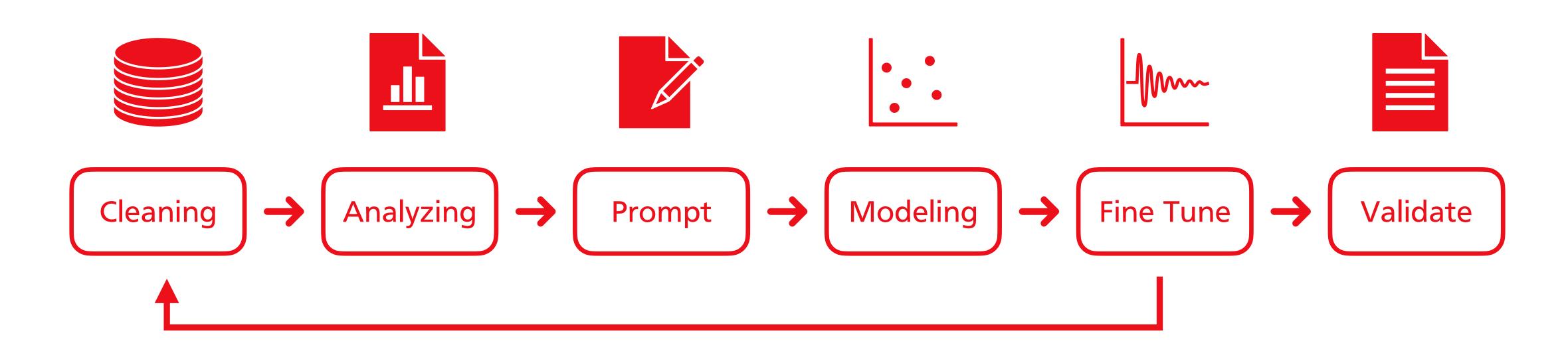
Al-Kathon | Jan 26 – Feb 2, 2024

Team:

- ➤ Mahdi Raza Khunt,
- ➤ Harsha Puranik,
- Karthik Krishna Viriyala



Our Approach



Technologies

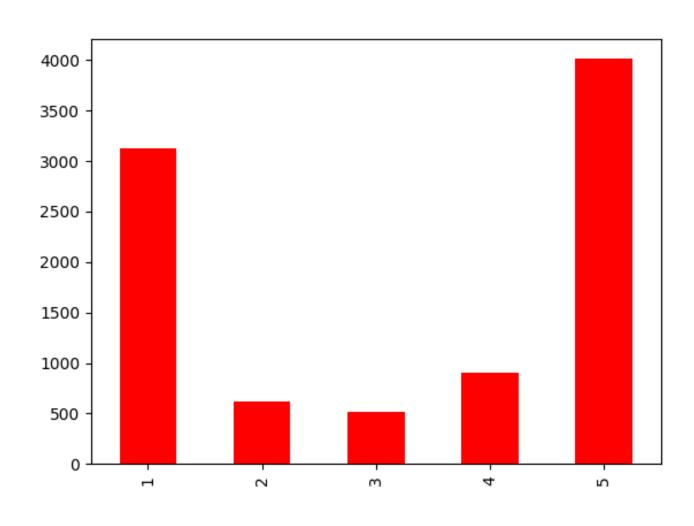


Pandas NumPy Matplotlib

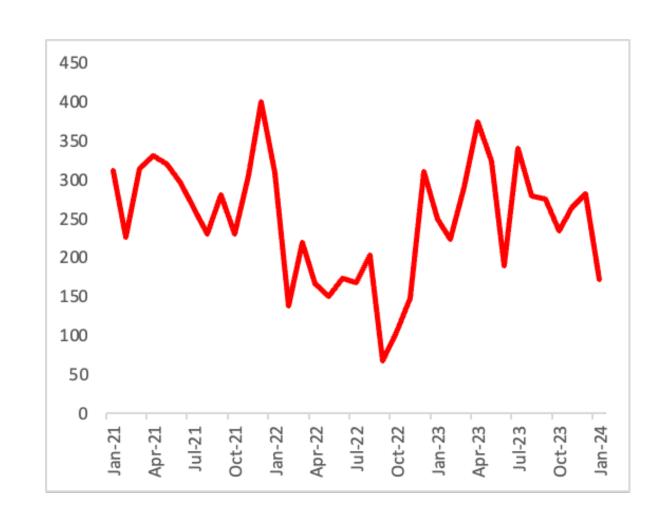
LangChain GPT-3 BERTopic,
SKlearn,
Hugging
Face
Transform.

Sentiment
Analysis,
NLP,
Keywords,
Tokenize

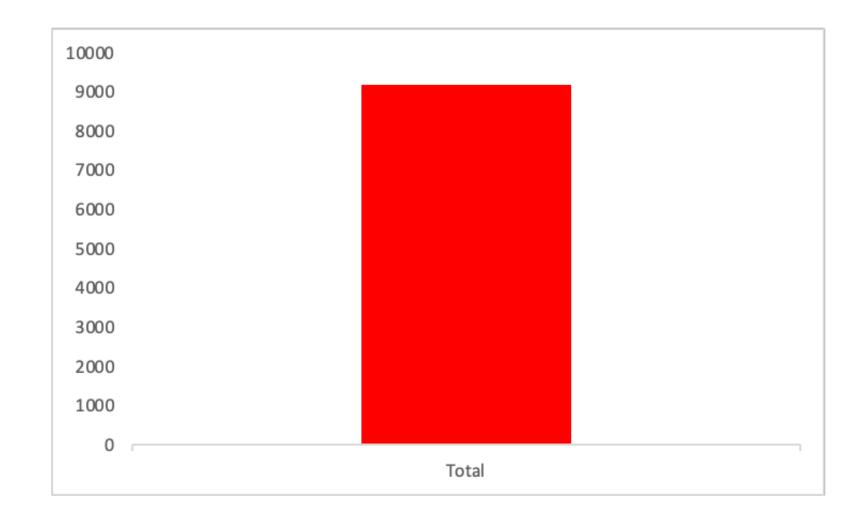
Initial Insights



Distribution of Frequency of Rating



Number of Reviews over time

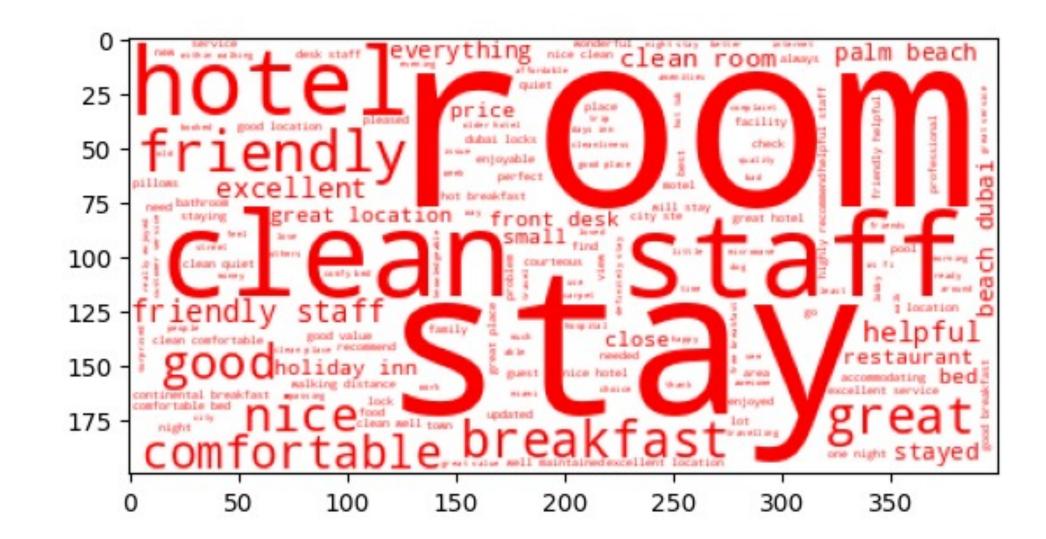


All English Reviews

Easter Eggs

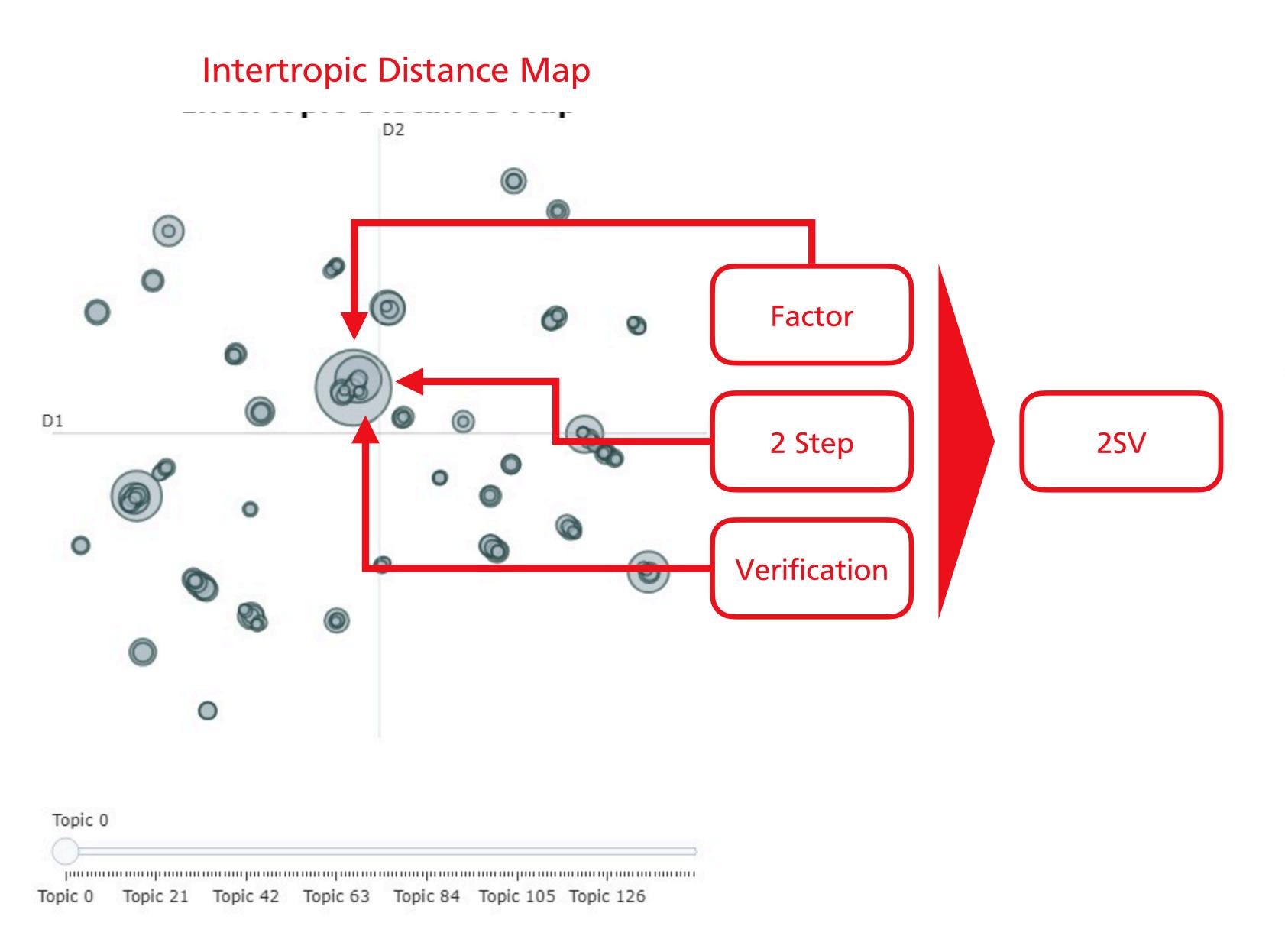
Topic modelling using

- **➤** BERTopic,
- Create cluster,
- **➤** Identify outlier

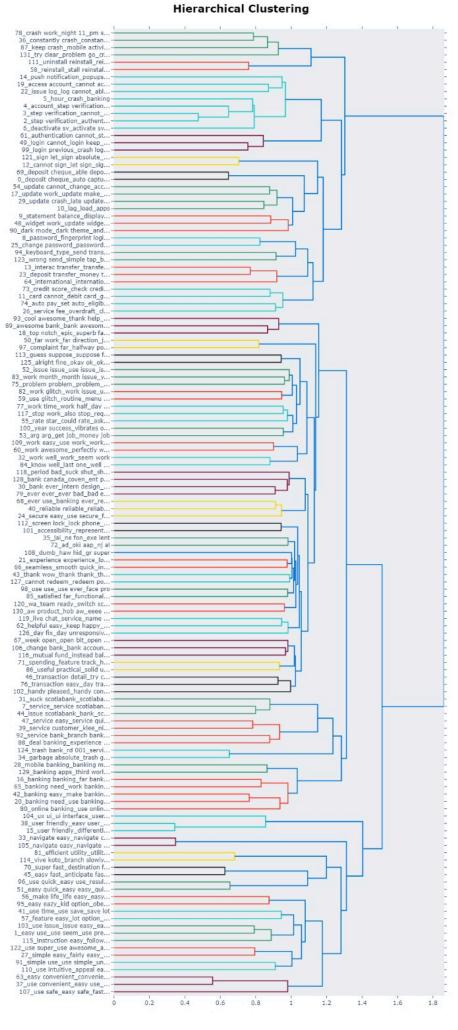


Travel related
keywords identified
such as "room",
"hotel", "stay", etc

Topic Modelling - 20 Topics



Hierarchial Clustering



Using LLM Techniques!

Cleaning

- ➤ Emoji
- Contraction
- > French
- Lemmatization
- Stemming
- Spell Check

One-Shot

- Review: Barelyworks. Nonotifications now2SV doesn't work
- Topics_Tags: 2SV, Info_Alerts

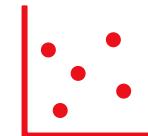
Few-Shot

- **Review:** App is great.
- Topics_Tags: Other
- Review: Barely works. No notifications now 2SV doesn't work
- Topics_Tags: 2SV, Info_Alerts
- Review: This app has a bug and closes after signing in
- Topics_Tags: Errors, Login and Logout issues

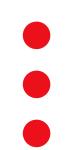
Chain of Thought



"Clean the data with emoji, contractions, and spell check"



"Map each row to a keyword generated as above"





"Refine the keyword tags by applying sentiment analysis"

Pain Points and Feature Requests

Pain Points

- **➤** Errors,
- **➤** App Performance,
- Cheque Deposit,
- Email Transfer,
- ➤ Fee Complaints,
- 2SV Issues,
- Accessibility,
- Biometric Login,
- Login/Logout,
- Info Alerts,
- Quick Balance

Customer Needs

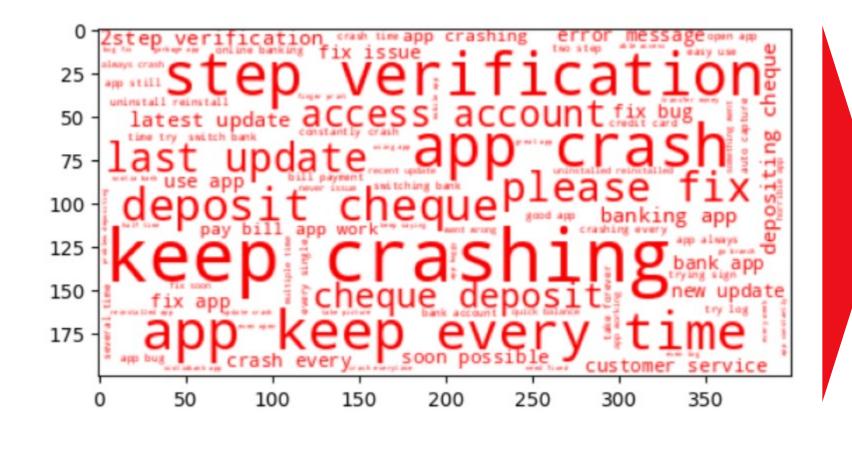
- Reliable Transactions,
- ➤ Intuitive UX,
- Transparent Fees,
- Effective 2SV,
- Accessible Design,
- **➤** Timely Notifications.

Feature Requests

- Reliable Biometric Login,
- Streamlined Balance View,
- Efficient 2SV,
- Real-Time Chat Support.

Recommendations!

How?



Wordcloud per topic



Rating distribution per topic

- ➤ Customer Service and Transfers: Have mobile app which offers strong customer service features, including live chat and personal banker contact information
- ➤ Smart Balance Alerts & Virtual Assistant: Features like Smart Balance Alerts and the Virtual Assistant help customers avoid negative balances and provide assistance with banking transactions, enhancing the overall user experience.