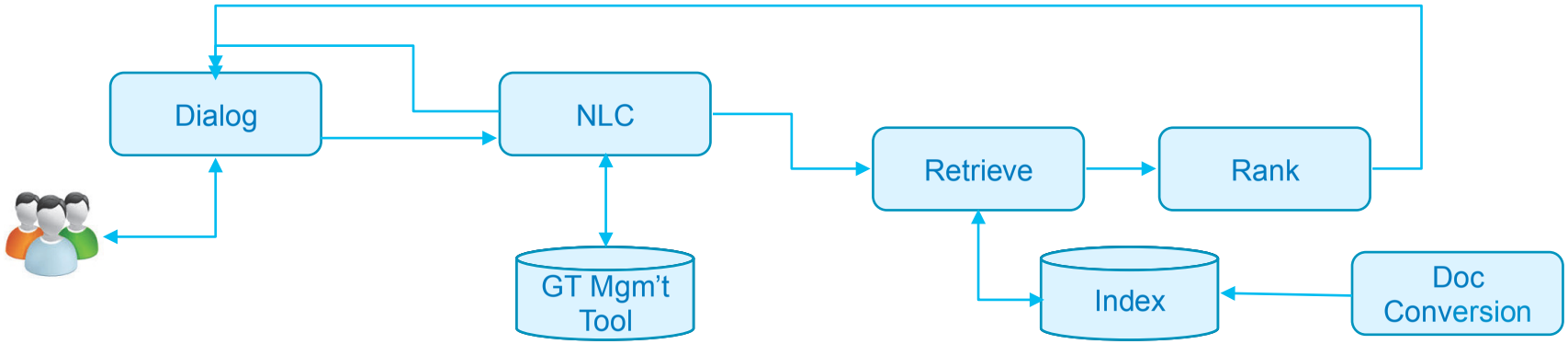
Design Pattern

# Combine Dialog + R&R + NLC

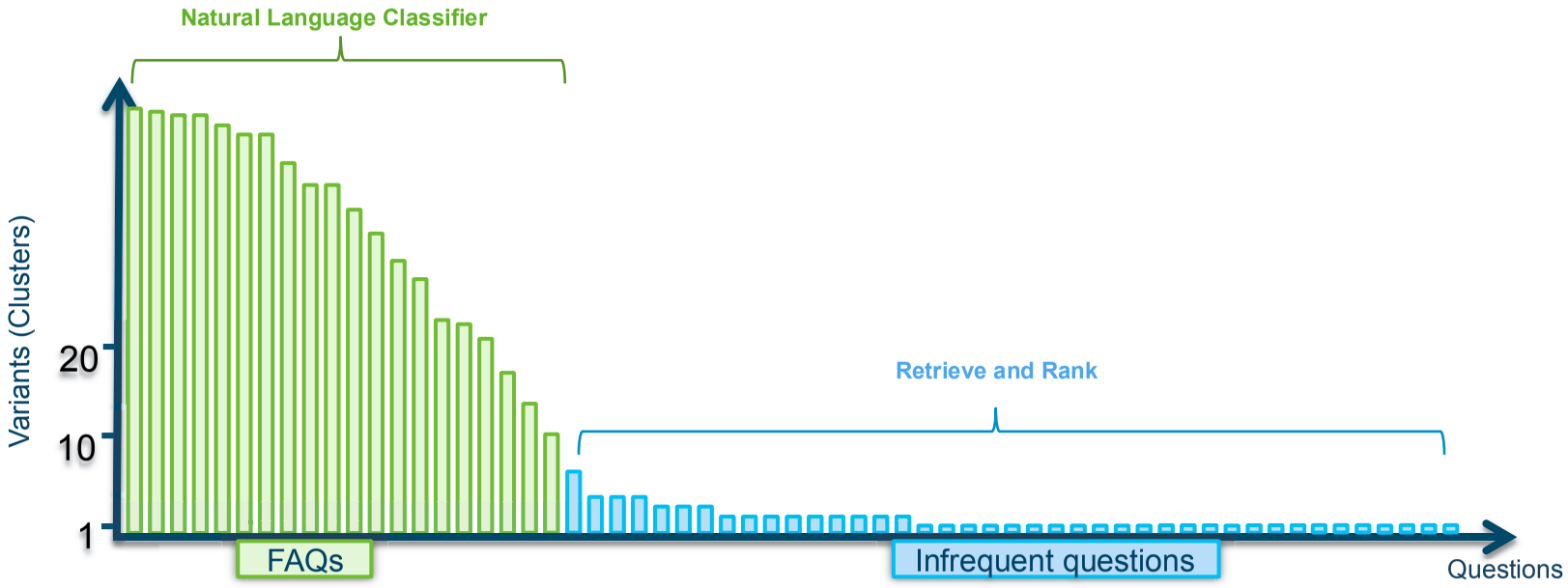
Combine Retrieve and Rank w/Dialog and NLC. Dialog provides the ability for a multi-turn experience where you asking clarifying questions to customers and track state across queries. NLC can be used to (1) detect specific domains of user interest so R&R can search only a subset of documents, (2) detect overlap between possible user intents so Dialog can request clarification by the user, or perhaps (3) NLC can be used to inject valuable run-time features into R&R for more targeted ranking of answers



Design Pattern

# R&R for the “long tail” while NLC handles FAQs

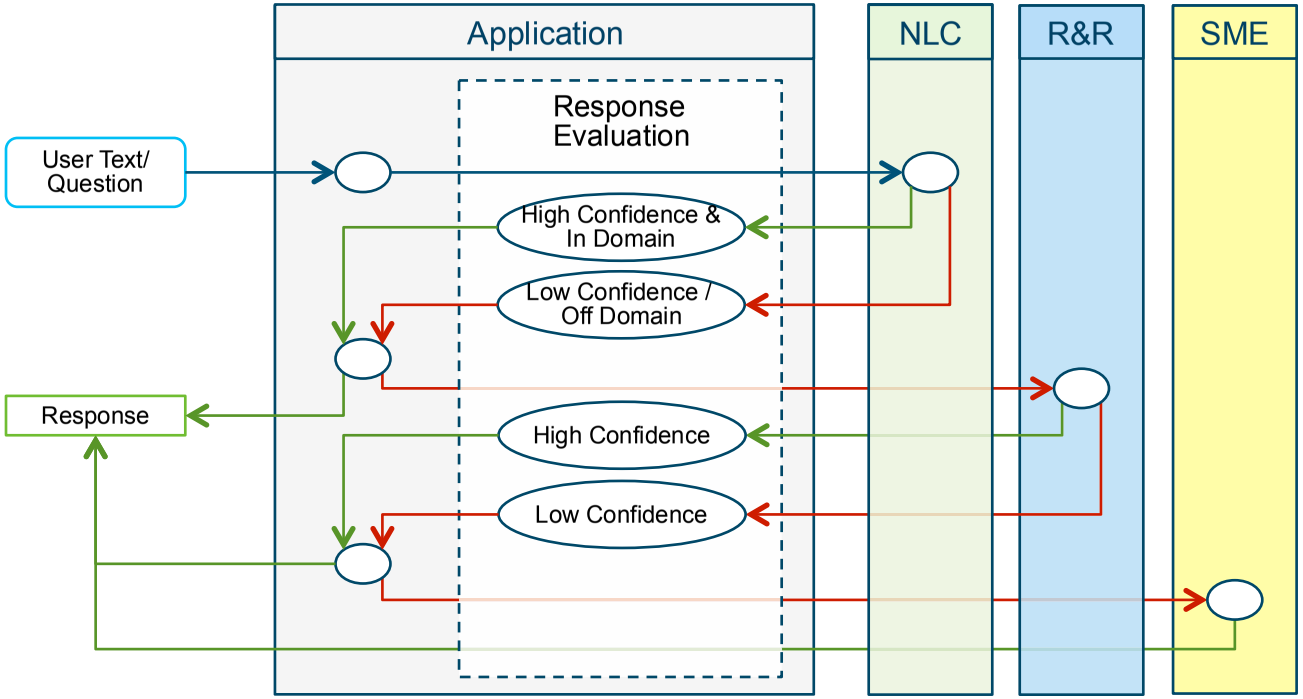
The Natural Language Classifier is well suited for Frequently Asked Questions (FAQs) where the effort to associate a single static answer to a question is rapidly rewarded. Retrieve to Rank is then used for infrequently asked questions or those for which multipel passages or frequently changing content must be searched.



Design Pattern

# "Fail-Over" to SME for Low Confidence Answers

When applying the FAQ pattern using the NLC, it's common to fail-over first to Retrieve and Rank to determine if an answer can be found within the larger corpus of content. Or when even R&R fails to have the answer, user queries can be passed along to a subject matter Expert (SME) to process queries from high value customers.



Design Pattern

# Query Boosting w/NLC-Based feature injection

For some R&R implementations, the native lexical features within documents are sufficient, but adding more domain knowledge through custom features often increases answer relevance and specificity. We can achieve this by extracting additional features not directly supported by Solr to inject additional cognitive training to our R&R system. This is an advanced feature that should likely be added after the other basic R&R implementation is in place.

There are many custom features we could create for R&R implementations but they fall into 1 of 3 categories: document, query, and query +document scorers. This blog post provides more details on injecting your own custom features:

https://medium.com/machine-learning-with-ibm-watson/developing-with-ibm-watson-retrieve-and-rank-part-3-custom-features-826fe88a5c63#.9hybpgj5p