RETAIL ADVANCED PERSONALIZATION
REFERENCE ARCHITECTURE (Snowflake Native)

OBJECTIVE
Personalized search acts as a catalyst in elevating brand perception, fostering customer engagement and loyalty, which, in turn, is a significant driver of revenue. An AI-powered personalization engine in the Snowflake Data Cloud aims to improve customer experience and help retailers position themselves above competitors.

USE CASE FLOW
1. Images data set is store locally or in External stage
2. Fine Tune ResNet 18 on Fashion Image Dataset and convert it to a feature extractor for extracting image embeddings
3. Serve Embedding Model as a Snowflake UDF using the ONNX runtime to accelerate inference
4. Retrieve embeddings and Calculate pairwise cosine similarity to identify similar images to a source image
5. Data scientist can interact with Jupyter notebook and view application via Streamlit
6. Leverage key supporting functions including role based access control, masking and replication in addition to workload isolation and instant scaling.
7. Image Embeddings are combined with clickstream data into a final Personalization dataset
8. Training final Advanced personalization model using SnowPark Container Services
9. Serves Advanced Personalization Model as a Snowflake UDF using the ONNX runtime to accelerate inference

RELATED CONTENT
Webpage: INCREASE PERSONALIZATION ACROSS RETAIL AND ECOMMERCE