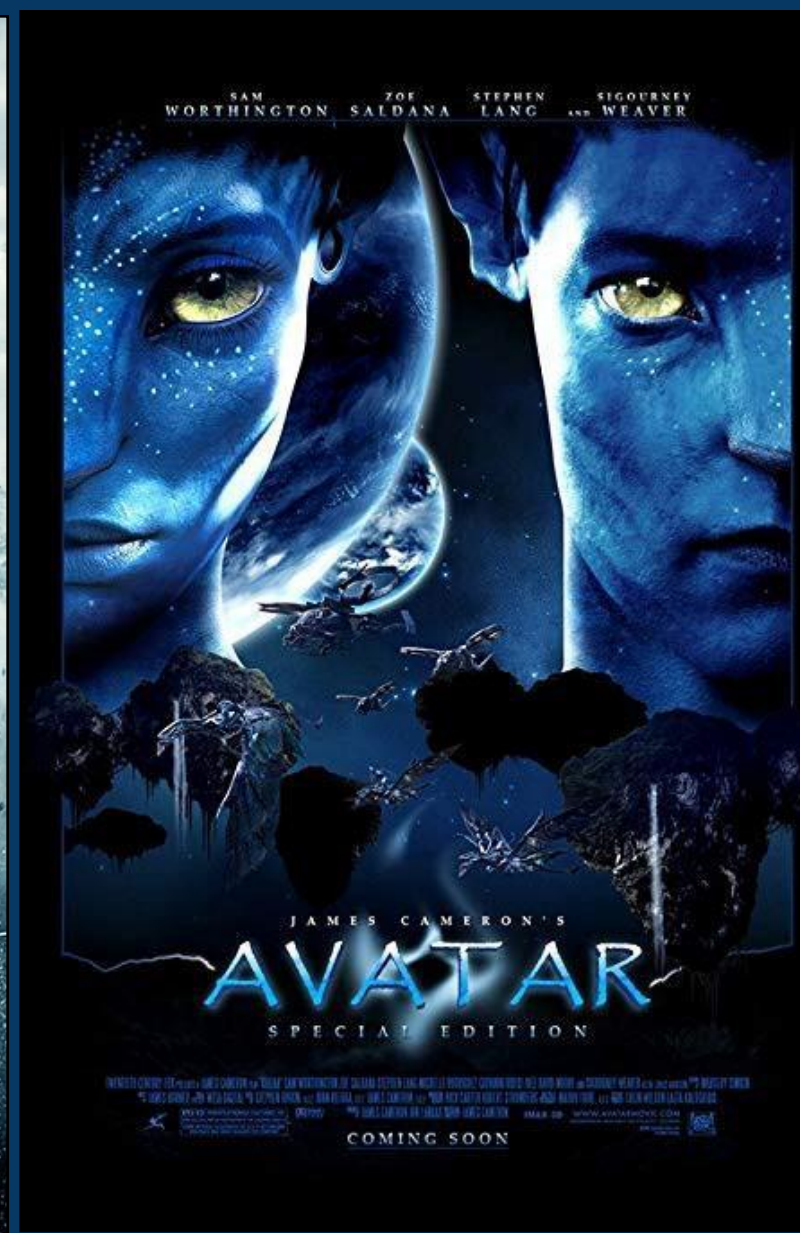# MovieLens

CC Group 6: Adel Hassen, Jongchan Kim, Jing Li

Scope

Goal : To create real-time personalized movie recommendations
with Amazon personalize

Limitation : Available only for the movies used during training
Not available for new users or new movies

Features

- AWS Personalize

- AWS S3
  - stores data
  - allow Amazon Personalize access to the data

- Amazon SageMaker
  - prepare data
  - train and deploy movie personalization model

- AWS IAM

- AWS SDK for Python

Data Sources

Kaggle: MovieLens 20M Dataset
         (Over 20 Million Movie Ratings and Tagging Activities Since 1995)

Context:

- The datasets describe ratings and free-text tagging activities originally from MovieLens.
- It contains 20,000,263 ratings and 465,564 tag applications across 27,278 movies.
- Each user is represented by an ID; no demographic information is included.

Files:

The data are contain in 6 files:
1. tag.csv
2. rating.csv
3. movie.csv
4. link.csv
5. genome_score.csv
6. genome_tags.csv

AWS Personalize

➢ Does not require machine learning experience

➢ Need to do the following:
  ○ Format input data and upload the data into an Amazon S3 bucket
  ○ Select a training recipe(algorithm) to use on the data
  ○ Train a model using the recipe
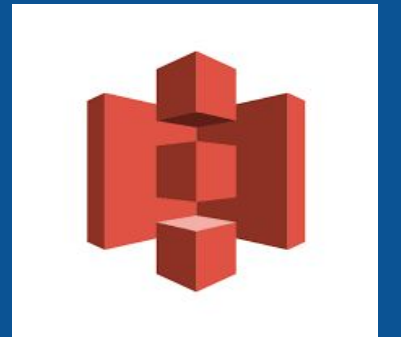 ○ Deploy a campaign to make real-time recommendations
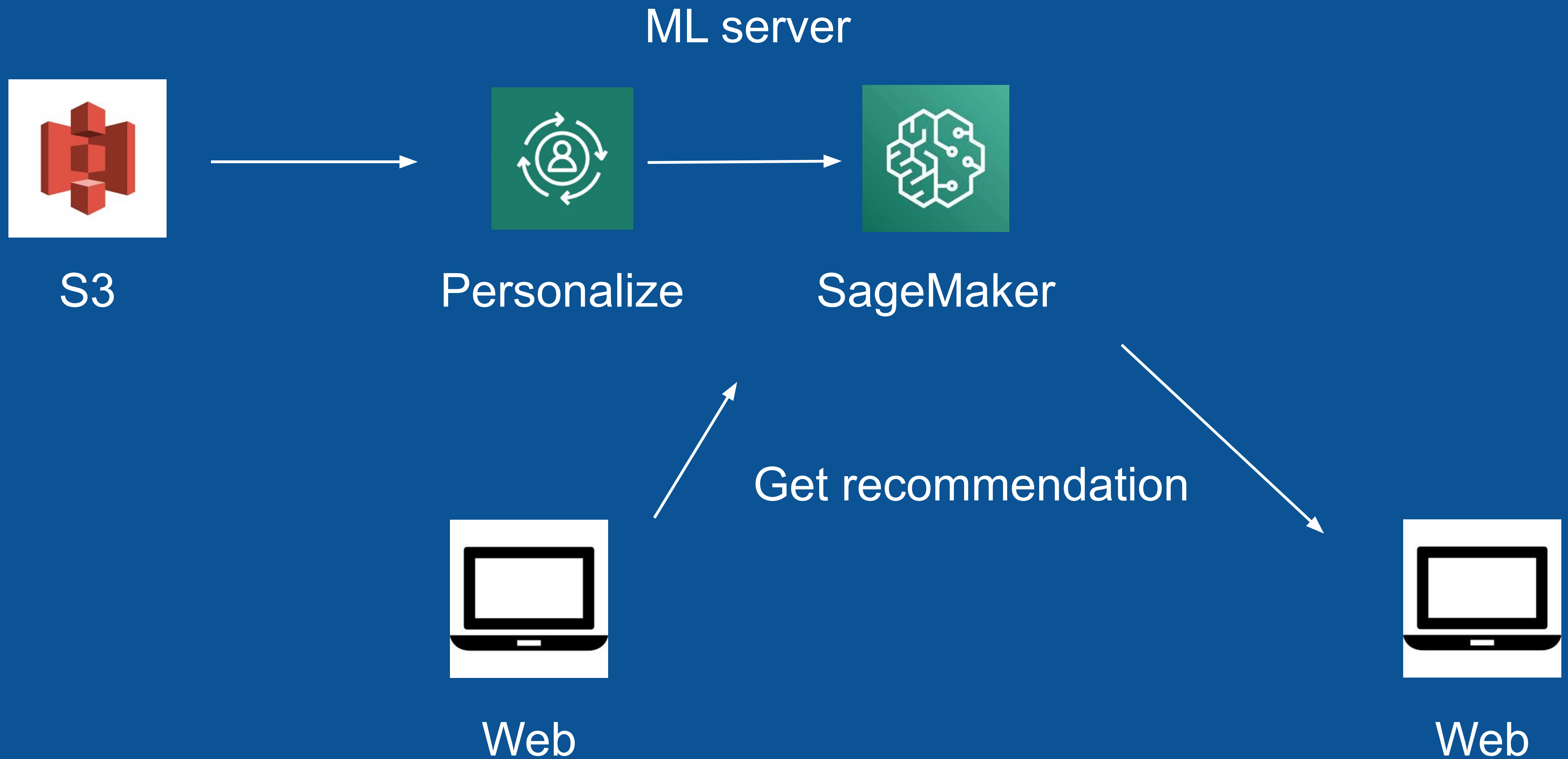
Logical Architecture

Data Flow

ML server

S3 → Personalize → SageMaker

Web

Get recommendation

Web

Example Results

Recommended movies for Toy Story (1995)

	Suggested Movies
0	Toy Story 2 (1999)
1	Willy Wonka & the Chocolate Factory (1971)
2	Independence Day (a.k.a. ID4) (1996)
3	Twister (1996)
4	Mission: Impossible (1996)
5	Aladdin (1992)
6	Back to the Future (1985)
7	Birdcage, The (1996)
8	Lion King, The (1994)
9	Rock, The (1996)

jenga unchained
Recommended movies for Django Unchained (2012)

	Suggested Movies
0	Dark Knight Rises, The (2012)
1	Wolf of Wall Street, The (2013)
2	Interstellar (2014)
3	Inglourious Basterds (2009)
4	Inception (2010)
5	Shutter Island (2010)
6	The Imitation Game (2014)
7	Mad Max: Fury Road (2015)
8	Grand Budapest Hotel, The (2014)
9	Gone Girl (2014)

Recommended movies for Titanic (1997)

	Suggested Movies
0	Men in Black (a.k.a. MIB) (1997)
1	There's Something About Mary (1998)
2	Star Wars: Episode I - The Phantom Menace (1999)
3	Truman Show, The (1998)
4	Shakespeare in Love (1998)
5	Sixth Sense, The (1999)
6	Good Will Hunting (1997)
7	As Good as It Gets (1997)
8	American Pie (1999)
9	Rain Man (1988)

Thank you