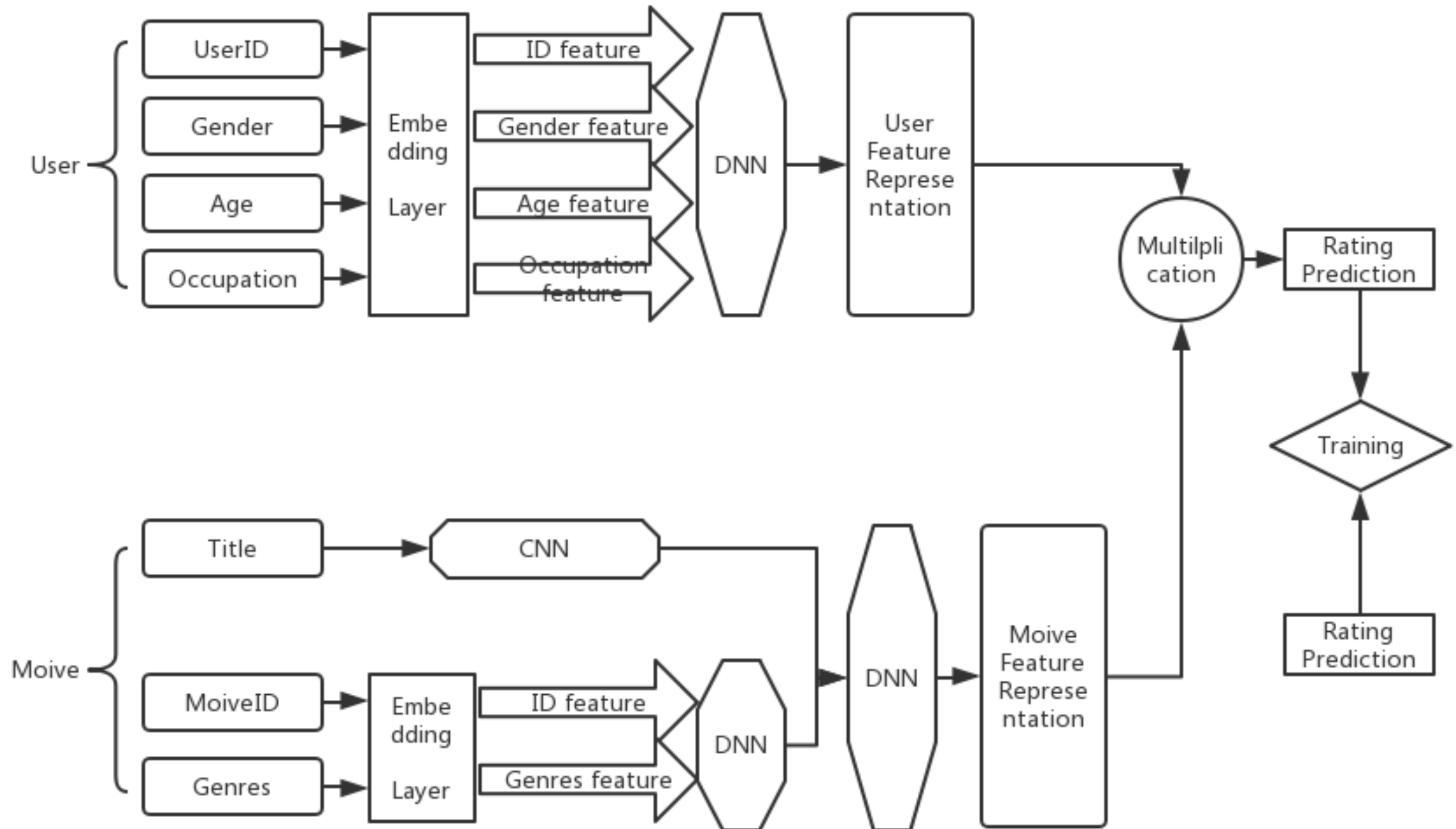# Movie Recommendation System

1. Overview

2. Dataset and Data processing

3. Neural Networks

4. What can it do

https://github.com/YHfeather/Movie_Recommendation_System
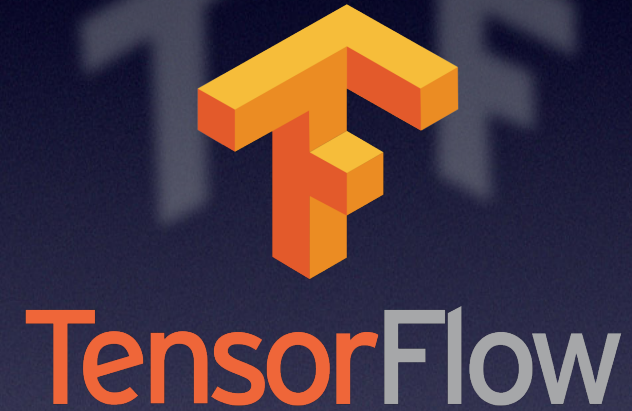
Overview

Tools

Python 3.5

TensorFlow 1.7.0

Dataset

movielens

6,040 users
3,900 movies
1,000,209 ratings

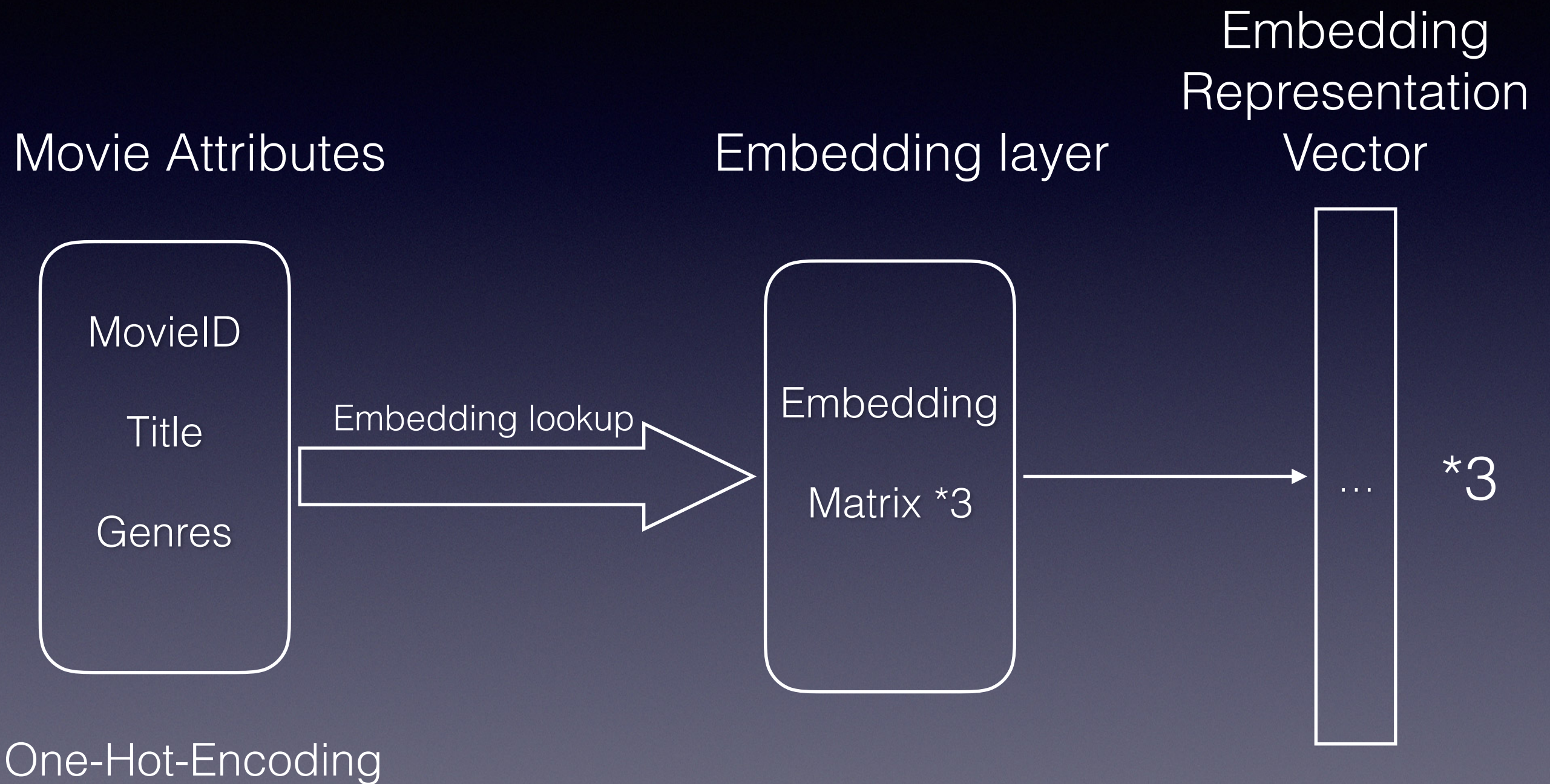users.dat — UserID, Age, Occupation, Zip-code..
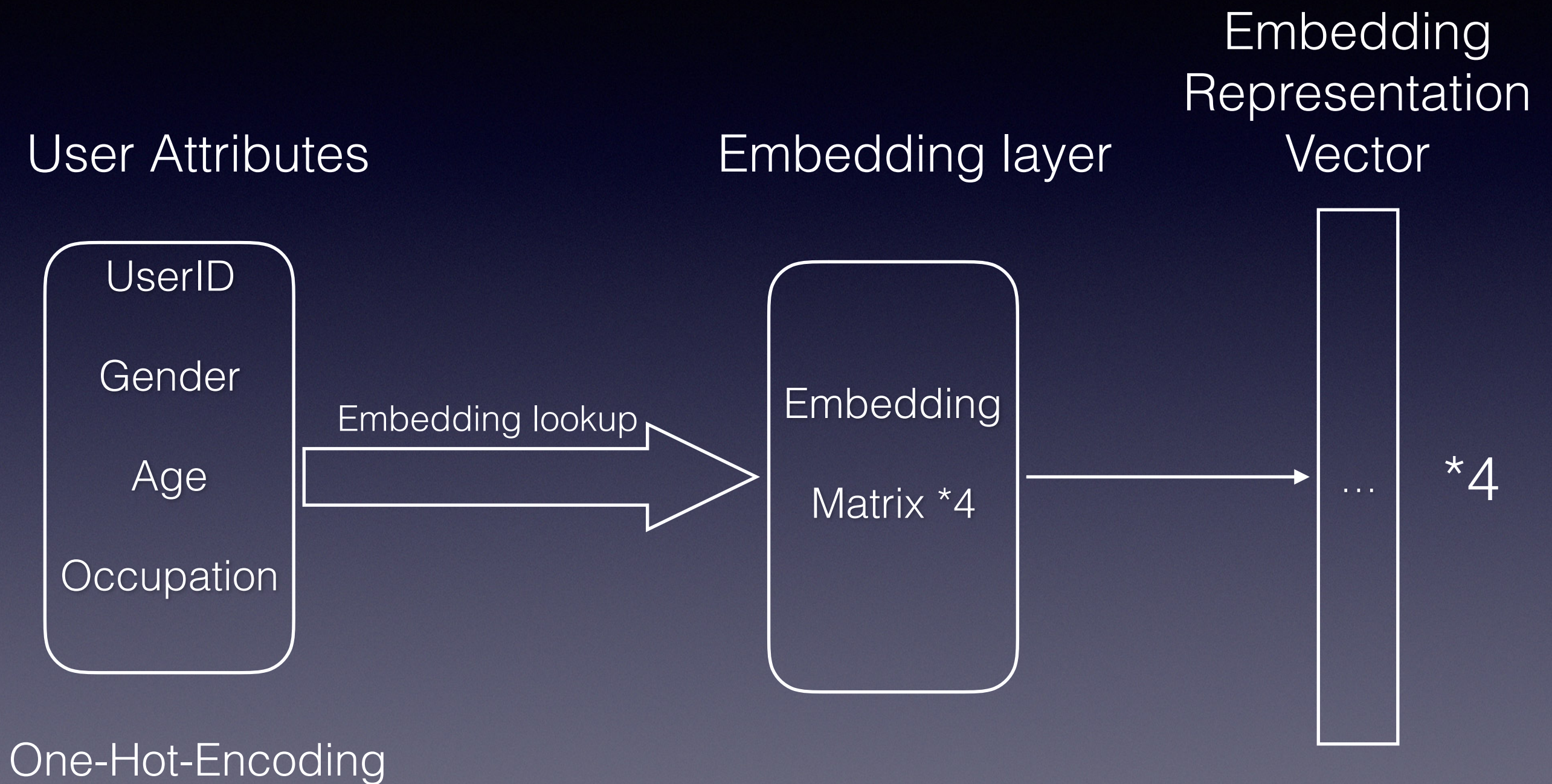
movies.dat — MovieID, Titile, Genres

ratings.dat — UserID, MovieID, Ratings (1 ~ 5)

Movie Feature Processing

Movie Attributes

Embedding layer

Embedding
Representation
Vector

MovieID

Title

Genres

Embedding lookup

Embedding

Matrix *3

... *3

One-Hot-Encoding

User Feature Processing

User Attributes

Embedding layer

Embedding Representation Vector

UserID

Gender

Age

Occupation

Embedding lookup

Embedding

Matrix *4

...   *4

One-Hot-Encoding

Neural Networks
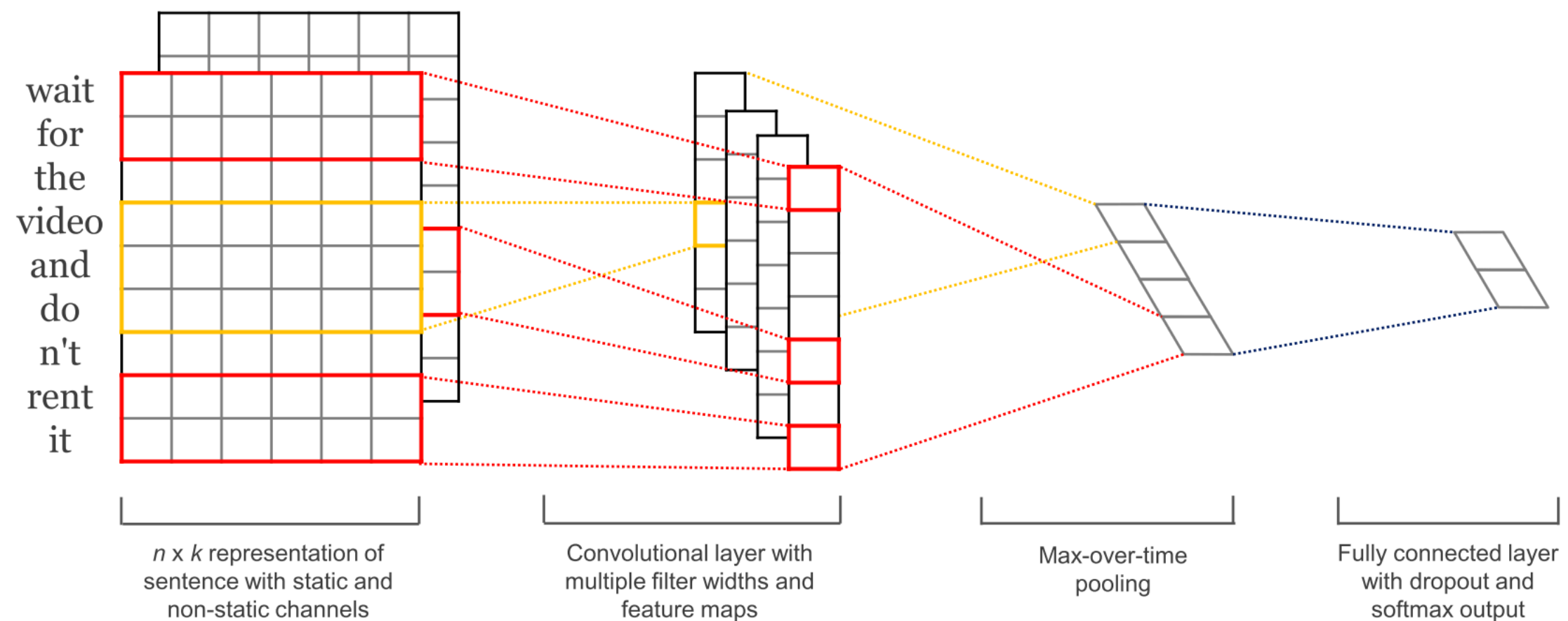
Neural Networks

CNN for Text[1]

[1] Y Kim 2014 EMNLP "Convolutional Neural Networks for Sentence Classification"

Neural Networks
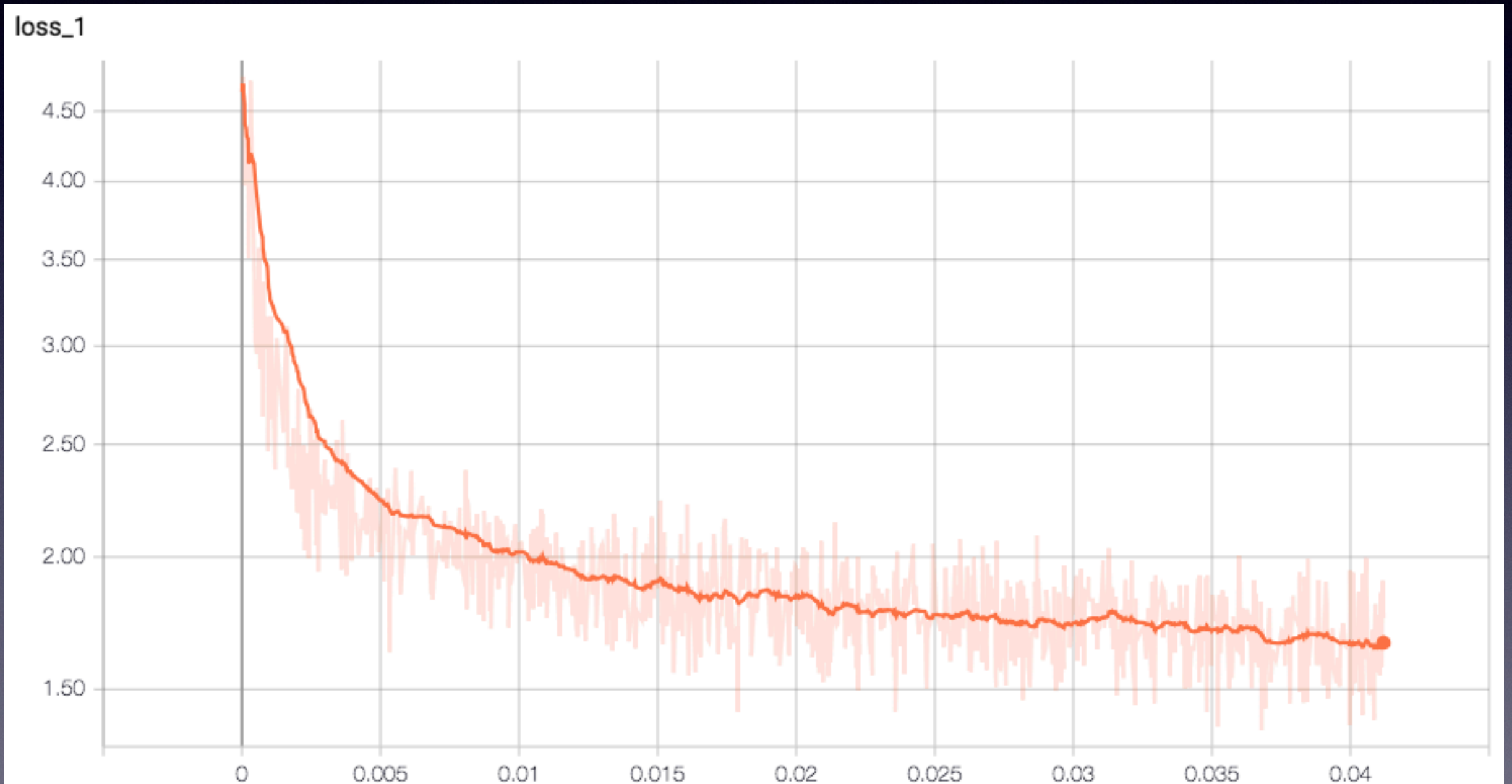
Training Step
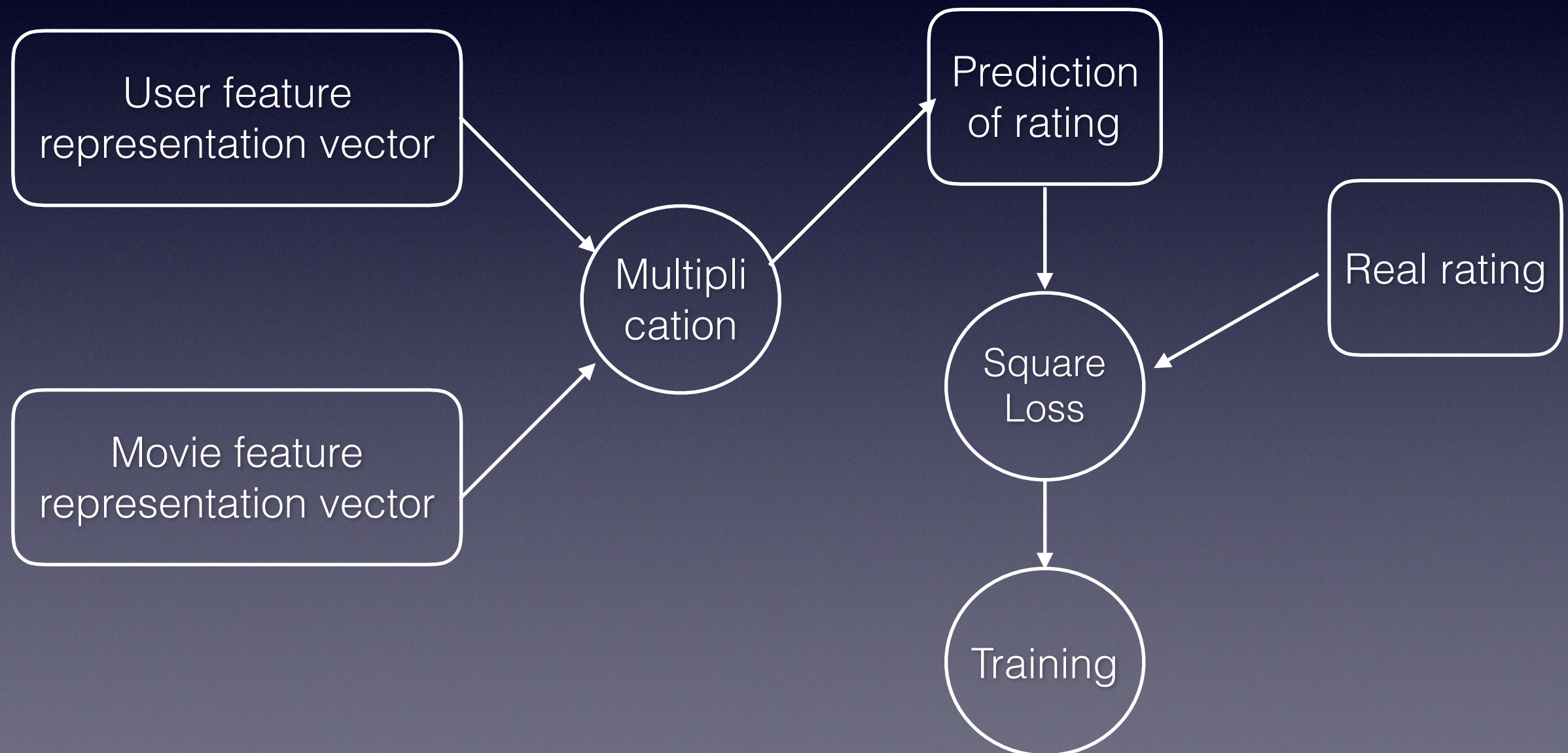
Training Loss

What can it do?

Trained Neural Networks

Generate → Movie and User Feature Matrix

Forward Propagation → 1. Rate Movie

Given movie → 2. TopK similar movies

Given user → 3. TopK similar users

Given user → 3. TopK favorite movies

Given movie → 4. TopK other favorite movies