# Notification Heavy Ranker Model

## Model Context

There are 4 major components of Twitter notifications recommendation system: 1) candidate generation 2) light ranking 3) heavy ranking & 4) quality control. This notification heavy ranker model is the core ranking model for the personalised notifications recommendation. It's a multi-task learning model to predict the probabilities that the target users will open and engage with the sent notifications.

## Directory Structure

- BUILD: this file defines python library dependencies

- deep\_norm.py: this file contains how to set up continuous training, model evaluation and model exporting for the notification heavy ranker model

- eval.py: the main python entry file to set up the overall model evaluation pipeline

- features.py: this file contains importing feature list and support functions for feature engineering

- graph.py: this file defines how to build the tensorflow graph with specified model architecture, loss function and training configuration

- model\_pools.py: this file defines the available model types for the heavy ranker

- params.py: this file defines hyper-parameters used in the notification heavy ranker

- run\_args.py: this file defines command line parameters to run model training & evaluation

- update\_warm\_start\_checkpoint.py: this file contains the support to modify checkpoints of the given saved heavy ranker model

- lib/BUILD: this file defines python library dependencies for tensorflow model architecture

- lib/layers.py: this file defines different type of convolution layers to be used in the heavy ranker model

- lib/model.py: this file defines the module containing ClemNet, the heavy ranker model type

- lib/params.py: this file defines parameters used in the heavy ranker model