University of Colorado **Boulder**

Unsupervised Discovery of Mobile User Personas for UX Strategy

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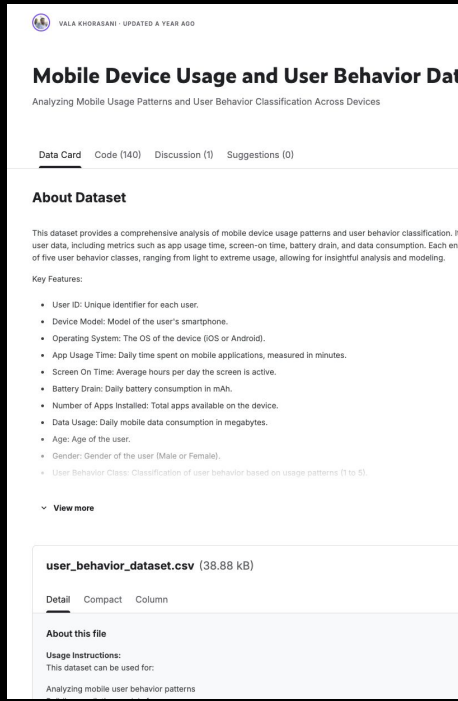
I’m a Director of User Experience at Google, and an aspiring student of Artificial Intelligence at University of Colorado Boulder. I wanted to connect these two world and work on a problem related to User Experience Design.

I found on Kaggle a fascinating data set - Mobile Device Usage and User Behavior

The dataset consists of: 700 records of individual user interaction patterns, including key features relevant to mobile behavior:

- *App Usage Time (min/day): Total daily minutes spent actively using applications.*
- *Screen On Time (hours/day): Total daily time the screen is active.*
- *Battery Drain (mAh/day): Daily battery consumption.*
- *Data Usage (MB/day): Daily mobile data consumption.*
- *Age and Gender: Demographic features used to profile the final clusters.*



The problem

While personas are often based on demographics, unsupervised learning can help us find them based on user behavior. This help mitigate biases and find actionable clusters of users.

I’m going to use unsupervised learning to find behavioral clusters!

Goal

Build an unsupervised model capable of finding personas based on user behavior.

Research Plan

1. **EAD**. After loading the data set I'm going to thoroughly evaluate it. Checking data distribution and correlations between features.
2. **Data processing.** I'll have to standardize features and run a PCA analysis.
3. **K-means training and optimization.**
4. **Hierarchical clustering training and optimization.**
5. **Summary of results.**