



**mobilewalla**

# Mobilewalla Predictive Modeling Features

Organizations are increasingly using artificial intelligence (AI) and machine learning (ML) to predict the outcomes they seek to drive or avoid. A subset of AI, predictive modeling, which turns historical data into insights and predictions about future behavior, is being used by teams to better understand consumer behavior. Building predictive models involves the application of AI/ML algorithms on training data and relies on an appropriate volume of data to train the algorithm and generate insights.

Data, in the form captured by enterprise systems, is not directly ingested into AI algorithms. Rather, it is massaged into artifacts called features, that are then plugged into the predictive model. In enterprise AI, this transformation process, known as feature discovery, is perhaps the most critical step in building models with high predictive power. Feature discovery is one of the most impactful, yet perhaps the most difficult step in creating predictive models using ML/AI.

Mobilewalla has built a library of features that serves as a plug-and-play platform for enterprise data scientists to discover optimal features for their specific modeling exercise and then acquire the data to implement these features in their models. This reduces feature discovery efforts massively, and simultaneously increases quality of models substantively, due to the optimality of features selected.

Category	External Name	Description
App Engagement	Apps Used	Array of bundle IDs/ASN observed for the device
App Engagement	Number of paid apps	Number of paid apps used by the device
App Engagement	Total apps	Total number of apps available on the device
App Engagement	Number of premium apps	Number of premium apps (those downloaded for a fee) used by the device
App Engagement	App Count	Number of distinct apps/bundle observed for a device
App Engagement	Most seen app category	App category receiving the most mobile signals

Category	External Name	Description
Behavior	Books and References	Device engagement across selected 21 global app categories
Behavior	Business	Device engagement across selected 21 global app categories
Behavior	Education	Device engagement across selected 21 global app categories
Behavior	Entertainment	Device engagement across selected 21 global app categories
Behavior	Finance	Device engagement across selected 21 global app categories
Behavior	Food and Drinks	Device engagement across selected 21 global app categories
Behavior	Games	Device engagement across selected 21 global app categories
Behavior	Health and Fitness	Device engagement across selected 21 global app categories
Behavior	Lifestyle	Device engagement across selected 21 global app categories
Behavior	Maps and Navigation	Device engagement across selected 21 global app categories
Behavior	Medical	Device engagement across selected 21 global app categories
Behavior	Music	Device engagement across selected 21 global app categories
Behavior	News and Magazines	Device engagement across selected 21 global app categories
Behavior	Photography	Device engagement across selected 21 global app categories
Behavior	Productivity	Device engagement across selected 21 global app categories
Behavior	Shopping	Device engagement across selected 21 global app categories
Behavior	Social	Device engagement across selected 21 global app categories

Category	External Name	Description
Behavior	Sports	Device engagement across selected 21 global app categories
Behavior	Tools	Device engagement across selected 21 global app categories
Behavior	Travel	Device engagement across selected 21 global app categories
Behavior	Weather	Device engagement across selected 21 global app categories
Behavior	Luxury Segments	Number of high value behavior segments the device is a member of
Behavior	Arts and Entertainment Affinity	Category affinity of the device as per the IAB App categories
Behavior	Books and Literature Affinity	Category affinity of the device as per the IAB App categories
Behavior	Music Affinity	Category affinity of the device as per the IAB App categories
Behavior	News Affinity	Category affinity of the device as per the IAB App categories
Behavior	Personal Finance Affinity	Category affinity of the device as per the IAB App categories
Behavior	Society Affinity	Category affinity of the device as per the IAB App categories
Behavior	Science Affinity	Category affinity of the device as per the IAB App categories
Behavior	Weather Affinity	Category affinity of the device as per the IAB App categories
Behavior	Sports Affinity	Category affinity of the device as per the IAB App categories
Behavior	Technology and Computing Affinity	Category affinity of the device as per the IAB App categories
Behavior	Entertainment Affinity	Category affinity of the device as per the IAB App categories
Behavior	Travel Affinity	Category affinity of the device as per the IAB App categories
Behavior	Business Affinity	Category affinity of the device as per the IAB App categories
Behavior	Education Affinity	Category affinity of the device as per the IAB App categories
Behavior	Health & Fitness Affinity	Category affinity of the device as per the IAB App categories
Behavior	Hobbies and Interest Affinity	Category affinity of the device as per the IAB App categories
Behavior	Photography Affinity	Category affinity of the device as per the IAB App categories
Behavior	Video & Computers Affinity	Category affinity of the device as per the IAB App categories
Behavior	Books Affinity	Category affinity of the device as per the IAB App categories
Behavior	Finance Affinity	Category affinity of the device as per the IAB App categories
Behavior	Games Affinity	Category affinity of the device as per the IAB App categories
Behavior	Lifestyle Affinity	Category affinity of the device as per the IAB App categories
Behavior	Navigation Affinity	Category affinity of the device as per the IAB App categories
Behavior	Productivity Affinity	Category affinity of the device as per the IAB App categories
Behavior	References Affinity	Category affinity of the device as per the IAB App categories
Behavior	Utility Affinity	Category affinity of the device as per the IAB App categories
Behavior	Business Affinity	Category affinity of the device as per the Appstore categories
Behavior	Weather Affinity	Category affinity of the device as per the Appstore categories
Behavior	Utilities Affinity	Category affinity of the device as per the Appstore categories
Behavior	Travel Affinity	Category affinity of the device as per the Appstore categories

Category	External Name	Description
Behavior	Sports Affinity	Category affinity of the device as per the Appstore categories
Behavior	Social Networking Affinity	Category affinity of the device as per the Appstore categories
Behavior	References Affinity	Category affinity of the device as per the Appstore categories
Behavior	Productivity Affinity	Category affinity of the device as per the Appstore categories
Behavior	Photo and Videos Affinity	Category affinity of the device as per the Appstore categories
Behavior	News Affinity	Category affinity of the device as per the Appstore categories
Behavior	Navigation Affinity	Category affinity of the device as per the Appstore categories
Behavior	Music Affinity	Category affinity of the device as per the Appstore categories
Behavior	Lifestyle Affinity	Category affinity of the device as per the Appstore categories
Behavior	Health & Fitness Affinity	Category affinity of the device as per the Appstore categories
Behavior	Games Affinity	Category affinity of the device as per the Appstore categories
Behavior	Finance Affinity	Category affinity of the device as per the Appstore categories
Behavior	Entertainment Affinity	Category affinity of the device as per the Appstore categories
Behavior	Education Affinity	Category affinity of the device as per the Appstore categories
Behavior	Book Affinity	Category affinity of the device as per the Appstore categories
Behavior	Medical Affinity	Category affinity of the device as per the Appstore categories
Behavior	Catalogs Affinity	Category affinity of the device as per the Appstore categories
Behavior	Food and Drinks Affinity	Category affinity of the device as per the Appstore categories
Behavior	Shopping Affinity	Category affinity of the device as per the Appstore categories
Behavior	Arts and Design Affinity	Category affinity of the device as per the Playstore categories
Behavior	Automotive and Vehicles Affinity	Category affinity of the device as per the Playstore categories
Behavior	Beauty Affinity	Category affinity of the device as per the Playstore categories
Behavior	Books and References Affinity	Category affinity of the device as per the Playstore categories
Behavior	Business Affinity	Category affinity of the device as per the Playstore categories
Behavior	Comic Affinity	Category affinity of the device as per the Playstore categories
Behavior	Communication Affinity	Category affinity of the device as per the Playstore categories
Behavior	Dating Affinity	Category affinity of the device as per the Playstore categories
Behavior	Education Affinity	Category affinity of the device as per the Playstore categories
Behavior	Entertainment Affinity	Category affinity of the device as per the Playstore categories
Behavior	Events Affinity	Category affinity of the device as per the Playstore categories
Behavior	Finance Affinity	Category affinity of the device as per the Playstore categories
Behavior	Food and Drinks Affinity	Category affinity of the device as per the Playstore categories
Behavior	Action Games Affinity	Category affinity of the device as per the Playstore categories
Behavior	Adventure Games Affinity	Category affinity of the device as per the Playstore categories
Behavior	Arcade Games Affinity	Category affinity of the device as per the Playstore categories

Category	External Name	Description
Behavior	Board Games Affinity	Category affinity of the device as per the Appstore categories
Behavior	Card Games Affinity	Category affinity of the device as per the Appstore categories
Behavior	Casino Games Affinity	Category affinity of the device as per the Appstore categories
Behavior	Casual Games Affinity	Category affinity of the device as per the Appstore categories
Behavior	Education Games Affinity	Category affinity of the device as per the Appstore categories
Behavior	Musical Games Affinity	Category affinity of the device as per the Appstore categories
Behavior	Puzzles Affinity	Category affinity of the device as per the Appstore categories
Behavior	Racing Games Affinity	Category affinity of the device as per the Appstore categories
Behavior	Role Playing Games Affinity	Category affinity of the device as per the Appstore categories
Behavior	Simulation Games Affinity	Category affinity of the device as per the Appstore categories
Behavior	Sports Games Affinity	Category affinity of the device as per the Appstore categories
Behavior	Strategy Games Affinity	Category affinity of the device as per the Appstore categories
Behavior	Trivia Games Affinity	Category affinity of the device as per the Appstore categories
Behavior	Word Games Affinity	Category affinity of the device as per the Appstore categories
Behavior	Health and Fitness Affinity	Category affinity of the device as per the Appstore categories
Behavior	House and Home Affinity	Category affinity of the device as per the Appstore categories
Behavior	Library and Demos Affinity	Category affinity of the device as per the Appstore categories
Behavior	Lifestyle Affinity	Category affinity of the device as per the Appstore categories
Behavior	Maps and Navigation Affinity	Category affinity of the device as per the Appstore categories
Behavior	Medical Services Affinity	Category affinity of the device as per the Playstore categories
Behavior	Music and Audio Affinity	Category affinity of the device as per the Playstore categories
Behavior	News and Magazines Affinity	Category affinity of the device as per the Playstore categories
Behavior	Parenting Affinity	Category affinity of the device as per the Playstore categories
Behavior	Personlization Affinity	Category affinity of the device as per the Playstore categories
Behavior	Photography Affinity	Category affinity of the device as per the Playstore categories
Behavior	Productivity Affinity	Category affinity of the device as per the Playstore categories
Behavior	Shopping Affinity	Category affinity of the device as per the Playstore categories
Behavior	Social Affinity	Category affinity of the device as per the Playstore categories
Behavior	Sports Affinity	Category affinity of the device as per the Playstore categories
Behavior	Tools Affinity	Category affinity of the device as per the Playstore categories
Behavior	Travel Affinity	Category affinity of the device as per the Playstore categories
Behavior	Videos Affinity	Category affinity of the device as per the Playstore categories
Behavior	Weather Affinity	Category affinity of the device as per the Playstore categories
Behavior	Travelled Countries	Number of countries visited by the user
Behavior	International Travel Days	Number of days the device is seen in an international location

Category	External Name	Description
Behavior	Premium POIs Visited	Number of high value POIs (premium brand stores, golf clubs, 5-star hoteles, etc. by country) where the device is seen
Behavior	High Value Brand Engagement Score	Engagement score for devices based on engagement with high value brands
Behavior	High Value Brand Engagement (Days)	Cumulative number of days a device is seen at premium brand locations
Behavior	Premium Brands Visited	Number of premium brand locations where a device has been seen
Behavior	Automotive Brand Engagement	Automotive POI engagement score for the device
Behavior	Business Services Brand Engagement	Business services POI engagement score for the device
Behavior	Food & Beverage Brand Engagement	Food Service POI engagement score for the device
Behavior	Retail Brand Engagement	Retail POI engagement score for the device
Behavior	Travel Brand Engagement	Travel POI engagement score for the device
Behavior	Normalized High Value Brand Engagement	Normalized high value brand engagement scores for the devices in the country
Behavior	Premium Brands Visit Score	Normalized premium brand visit score for the devices with respect to the devices in the country
Behavior	Normalized Travelled Countries	Normalized countries traveled to for the device with respect to the devices in the country
Behavior	Normalized Travelled Days	Normalized travel days for the device with respect to the devices in the country
Behavior	Premium POIs Visit Score	Normalized visit score to premium POIs for the device with respect to devices in the country
Behavior	Luxury Segments Engagement	Normalized engagement score with luxury segments for the device with resepect to devices in the country

Category	External Name	Description
Carrier Connectivity	Wifi carrier	The wifi carrier most often seen through the course of a day
Carrier Connectivity	Wifi Engagement	Mobile signal distribution by wifi connection type
Carrier Connectivity	Cellular Engagement	Mobile signal distribution by carrier connection type
Carrier Connectivity	Cellular carrier	Last seen cellular carrier
Carrier Connectivity	Tenure of cellular carrier [Days]	Tenure of the current cellular carrier of the device
Carrier Connectivity	Secondary cellular carrier	Second current cellular carrier name for the device [in dual sim devices]
Carrier Connectivity	Tenure of secondary cellular carrier [Days]	Tenure of the second current cellular carrier of the device [in dual sim devices]
Carrier Connectivity	Previous Cellular Carrier	Immediate prior cellular carrier for the device
Carrier Connectivity	Tenure of previous cellular carrier	Tenure of the Immediate prior cellular carrier for the device
Carrier Connectivity	Median of all cellular carrier	Median tenure of the device across all cellular carriers
Carrier Connectivity	Total cellular carrier	Total cellular carriers seen for the device
Carrier Connectivity	All previous cellular carriers	Array of all previous cellular carrier names

Category	External Name	Description
Demographics	Gender	The device users gender {Female, Male}
Demographics	Age Group	Age group of the device user {either 18-24, 25-34, 35-44, 45-54 or 55+}
Demographics	Gender Confidence Bucket	Confidence bucket for gender [High, Medium or Low]
Demographics	Gender Confidence Score	Probability score for the gender

Category	External Name	Description
Device Engagement	First seen timestamp	Date and time of the first received signal from the device
Device Engagement	Last seen timestamp	Date and time of the last received signal from the device
Device Engagement	Observation period (in days)	Total length of time (in days) that the device was observed
Device Engagement	Inactive period (in days)	Total number of days the device has been inactive
Device Engagement	Active period (in days)	Number of active days for the device
Device Engagement	Total signal counts	Number of mobile signals observed for the device
Device Engagement	Home Signals	The mobile signal distribution from 8PM - 6AM (home hours)
Device Engagement	Other Signals	The mobile signal distribution across the day
Device Engagement	Work Signals	The mobile signal distribution from 10AM-5PM (work hours)
Device Engagement	Daily Engagement	Average mobile signal count per active day
Device Engagement	Active Day Percentage	Percentage of active days during the device observation period
Device Engagement	Daily commute engagement	Mobile signal distribution during commuting hours [7AM-10AM AND 5PM-8PM]
Device Engagement	Daily early hour engagement	Mobile signal distribution for the early morning hours [4AM-7AM]
Device Engagement	Daily late hour engagement	Mobile signal distribution for the late evening hours [11PM-4AM]
Device Engagement	Daily other hour engagement	Mobile signal distribution for the day not including commuter hours, late evening hours, early morning hours or work hours
Device Engagement	Daily work hour engagement	Mobile signal distribution for work hours [ 10AM-5PM]
Device Engagement	Weekday Engagement	Mobile signal distribution for weekdays [ Monday-Thursday]
Device Engagement	Weekend Engagement	Mobile signal distribution for the weekend [ Friday-Sunday]
Device Engagement	Average Daily Active Hours	Average number of active hours per active day
Device Engagement	Median Daily Active Hours	Median number of active hours per active day
Device Engagement	Normalized Daily Engagement	Normalized average mobile signal count per active day for the country
Device Engagement	Device observation period engagement	Normalized device observation period of the device with respect to the devices in the country
Device Engagement	Device Inactive Engagement Period	Normalized inactive period of the device with respect to the devices in the country
Device Engagement	Device Active Engagement Period	Normalized active engagement period of the device with respect to the devices in the country

Category	External Name	Description
Device Mobility	Common Day Location (State)	The state location where the highest count of mobile signals are recorded during work hours
Device Mobility	Common Evening Location	Geohash for the latitude-longitude where the most signals are received during home hours
Device Mobility	Home Zip Code	Zipcode for the location where the highest count of mobile signals are recorded between 8PM - 6AM
Device Mobility	Work Zip Code	Zipcode for the location where highest count of mobile signals are recorded between 10AM-5PM
Device Mobility	Most Seen Zip Code	Zipcode for the location where highest count of mobile signals are recorded for the day
Device Mobility	Location count	Number of distinct locations observed for a device
Device Mobility	Radius of gyration	The mean of the average distance from the centroid, for all locations found for a device. to each location
Device Mobility	Average daily distance	Average daily distance travelled by the device (in meters)
Device Mobility	Common Day Location	Geohash for the latitude-longitude where the most signals are received during work hours
Device Mobility	Common Day Location (City)	The city location where the highest count of mobile signals are recorded during work hours
Device Mobility	Common Evening Location (City)	The city location where the highest count of mobile signals are recorded during home hours
Device Mobility	Common Evening Location (State)	The state location where the highest count of mobile signals are recorded during home hours
Device Mobility	Most Seen Location	Geohash for the latitude-longitude receiving the most signals
Device Mobility	Most Seen location (City)	The city location where the highest count of mobile signals are recorded for the day
Device Mobility	Most Seen Location (State)	The state location where the highest count of mobile signals are recorded for the day
Device Mobility	Commute	Commute distance from home to work location (in meters)
Device Mobility	Normalized ROG	Normalized radius of gyration for the country
Device Mobility	Normalized Daily Average Distance	Normalized average daily distance travelled by the devices in the country
Device Mobility	Normalized Daily Commute	Normalized daily commute for the devices in the country
Device Mobility	Normalized Daily Median Distance	Normalized daily median distance travelled by the devices in the country
Device Mobility	Locations Count	Number of distinct locations observed for a device

Category	External Name	Description
Householding	Household Size	Number of IFAs seen with that IFA during household engagement hours, household engagement is defined as mobile signals received during the time between 8 PM – 6 AM on weekdays and all hours on weekends
Householding	Household Phone Price	Weighted average of prices for all the devices seen in the household size
Householding	Household Phone Age	Weighted average of all phone ages seen for all devices in the household size

Category	External Name	Description
Phone Specific	Mobile Advertising ID (MAID)	Advertising ID assigned to the device
Phone Specific	Platform	Mobile operating system (iOS or Android) used by the device
Phone Specific	Year released	Year of release for the device model
Phone Specific	Device Model Age	Age of the device model in years
Phone Specific	Device Price	List price of the device
Phone Specific	Device Category	Category of the device {Smartphone or Tablet}
Phone Specific	Device Manufacturer	Device manufacturer/phone brand /vendor
Phone Specific	Device Model	Model number of the device
Phone Specific	Normalized Phone Model Age	Normalized phone model age of the device with respect to the devices in the country
Phone Specific	Normalized phone price	Normalized phone price of the device with respect to the devices in the country

Category	External Name	Description
Relationship Network	Social Size	No. of IFAs seen with that IFA during social engagement hours, social engagement is defined as mobile signals received during the time between 6 PM – 10 AM on weekdays and all hours on weekends
Relationship Network	Social Phone Price	Weighted average of prices for all the devices seen in social size
Relationship Network	Social Phone Age	Weighted average of all phone ages seen for all devices in social size
Relationship Network	Work Size	No. of IFAs seen with that IFA during work engagement hours, work engagement is defined as mobile signals received during daily time between 8 AM – 6 PM on weekdays
Relationship Network	Work Phone Price	Weighted average of prices for all the devices seen in work size
Relationship Network	Work Phone Age	Weighted average of all phone ages seen for all devices in work size

## About Mobilewalla

Mobilewalla is a leader in consumer intelligence solutions, combining the industry's most robust data set with deep artificial intelligence expertise to help organizations better understand, model and predict customer behavior. With rich insights into consumer behavior, our proprietary solutions help organizations get more out of their AI investments by making more informed business decisions and effectively acquiring, understanding and retaining their most valuable customers. To learn more, go to [www.mobilewalla.com](http://www.mobilewalla.com).