

Find your business audiences by their behavior in Foursquare

Introduction:

Any time we want to run a new business, we have to find our audiences, our potential customers. But there is a question how to find people interested in our business or our product. One of the ways is to find them from their behavior in social networks. In this case we are going to find people may interest in our Online Jewelry Store.

Data:

As we knew Foursquare social network is about places and peoples. They tell stories about places visited and they are talking about it. In the other hand we have access to search venues, users and their interests. So we are going to find user that like jewelry stores in our territory. They are our very possible customers and their friends may be our potential audiences.

Methodology:

Our search starts with few known parameters:

- What is about our business or our product? How to find venues related to us?
One of the accurate ways to find related venues is to indicate it categories. By this [link](#) provided by Foursquare, we can easily found our categories to search venues.
As you can see we find out category for Jewelry Store (4bf58dd8d48988d111951735), it will be used later in search requests.
- Where we are going to find peoples? a City, a brought or a neighborhood?
We chose New York city as our territory to find our audiences. By a geocoders library we will find the geographical location of our territory as a latitude and a longitude.
- A logical range in meters to find people? How far we want to go to find them?
As described by Foursquare there is a [search API](#) to find venues. There are some ways to search an area. One of them is search by a latitude and a longitude and a radius in a circle, it can be easily used but there is a limit of 50 venues in result set. The second way to search venues will help us to overcome this limitation, search by SW (south-west corner) and NE (north-east corner) it has limitation of 50 but we can easily divide our area to many squares and search them by this way. But we face a new problem: “who we can convert latitude and longitude to meaningful dividing squares?” this problem is considered in many [navigation documents](#); each meter displacement is about 0.00001 in latitude or longitude. So we are going to found shape our grid and search in made squares one by one.

Because of the daily limitation of Foursquare API calls it is better to store harvested data into a database. I decided to use online IBM DB2 service as we learned in “[Databases and SQL for Data Science](#)” course.

Now it's time to find peoples who liked jewelry stores. It can be obtained by [likes API](#), in this API by a venue id we can get users who liked a venue, we store venue id and user id in our database.

To get details about each person we are going to use [get details of a user API](#) by a user id stored in previous step. We are going to obtain first name, last name, gender, home city and page URL of these people.

Main concept of finding peoples is here, the business owner can follow those people and there is a high probability of follow back and she can explain her business for those related audiences.

Results:

As we searched New York City Area we found 1,144 jewelry stores registered in Foursquare. We found 853 likes that those stored are get and we found 758 unique users interested in jewelry.

So we can present these users page links to business owner to follow and inform them about her business.

The interesting part of this project is this independent form business type or location by changing this two parameter we can use it anywhere and for any field.

Recommendation:

If you want to find more people, there is a chance that friends of found user may have similar interests.