Google Map API

Yong Zhuang

https://yong-zhuang.github.io

About Me

Yong Zhuang

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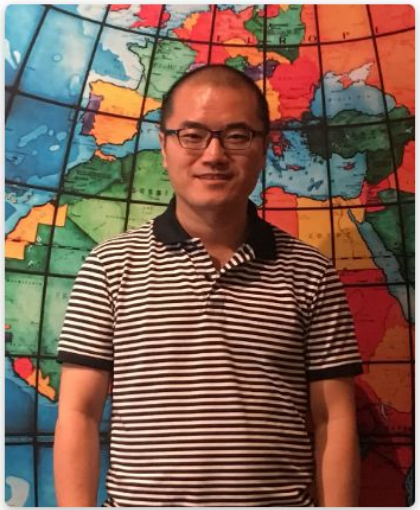

I am a Senior data scientist at Constant Contact. I received my Ph.D. degree in applied machine learning at the Knowledge Discovery Lab in Computer Science Department at UMass Boston, advised by Prof. Ding Wei.

My Ph.D. research focused on developing applied machine learning algorithms to solve real-world computational problems, mainly focused on Spatio-temporal analysis and time series forecasting. I am also passionate about applying causal analysis techniques in feature selection to study how to identify the principal features from the original feature space.

Before UMass Boston, I had been a software engineer in China for over five years in map-based web application design. I obtained my M.S. degree in Computer Science from the University of Massachusetts, Boston, in 2016. Prior to that, I received my B.E. degree in Computer Science from Harbin Engineering University in Harbin, China.

In my spare time, I enjoy traveling and hiking with friends and family.

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Background

ABOUT GOOGLE MAPS API

- launched in 2005.
- is a set of application programming interfaces that allow developers to call its services. It will allow developers to build complex location-based applications for the web, iOS, and Android.

Map API

Using Maps API, you can:

- Show Google Maps on the browser, iOS, or Android devices.
- Place or pin a Marker on the map when you want to indicate a specific geographic coordinate (latitude and longitude).
- Show an InfoWindow which is a popover so you can show more information about a place above the marker when clicked.
- Draw a polygon that covers a specific area on the map based on a number of coordinates specified in an ordered sequence.
- Create a polyline which is a path on the map based on a number of coordinates specified in an ordered sequence. The path line will be created between first and second points, then the second to the third, and so on.

Geocoding API

Using Geocoding API, you can:

- Geocoding: Convert a street address to geographic coordinates (latitude & longitude).
- Reverse Geocoding: is the opposite, which can convert geographic coordinates to an actual human-readable address.
- Example: Uber.

Places API

Using Places API, you can:

- Nearby Search Request allows user to get different places based on:

  ➔ *Location:* could be either the user's current location or any other location that you want to get nearby places from.
  ➔ *Type:* could be restaurants, bars, etc
  ➔ *Radius:* determines how far you want to get the places from.

  The response object will have most of the information about places such as name, address and coordinates.

- Text Search Request allows user to get different places based on the text string. For example: "restaurants in Lexington."

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Places API

Using Places API, you can:

- Place Details Request will provide more information about a place such as a website url, phone number, opening hours for a week or reviews, and many more.

  To get specific place information, we need to use place_id that you can get from Nearby Search Request or Text Search Request.

- Autocomplete API will allow user to show suggested street addresses in a drop-down list under the input field as the user types, which is very handy when a user denies sharing a location or location service is not supported by his/her browser or device.

Street View Service API

Using Places API, you can:

- Add interactive Street View to your application,
- Set the position of the view,
- Change the Street View camera (point of view).

Directions Service API and Distance Matrix API

- Directions Service API can get directions data from origin to destination using various forms of transport: walking, driving, cycling, public transit.

- Distance Matrix API can calculate the travel distance and travel time for multiple origins and destinations, optionally specifying various forms of transport: walking, driving, cycling.

More APIs

API Picker:

- https://developers.google.com/maps/documentation/api-picker

Usage limits

Is it free?

- Pricing: https://mapsplatform.google.com/pricing/
- JavaScript API Pricing:
  https://developers.google.com/maps/documentation/javascript/usage-and-billing?hl=en
- Using an API key enables you to monitor your application's Maps API usage
- Create An API Key:
  https://developers.google.com/maps/documentation/javascript/get-api-key?hl=en

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Thank You!

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