CYCLING THROUGH THE INDEGO BIKE-SHARE API

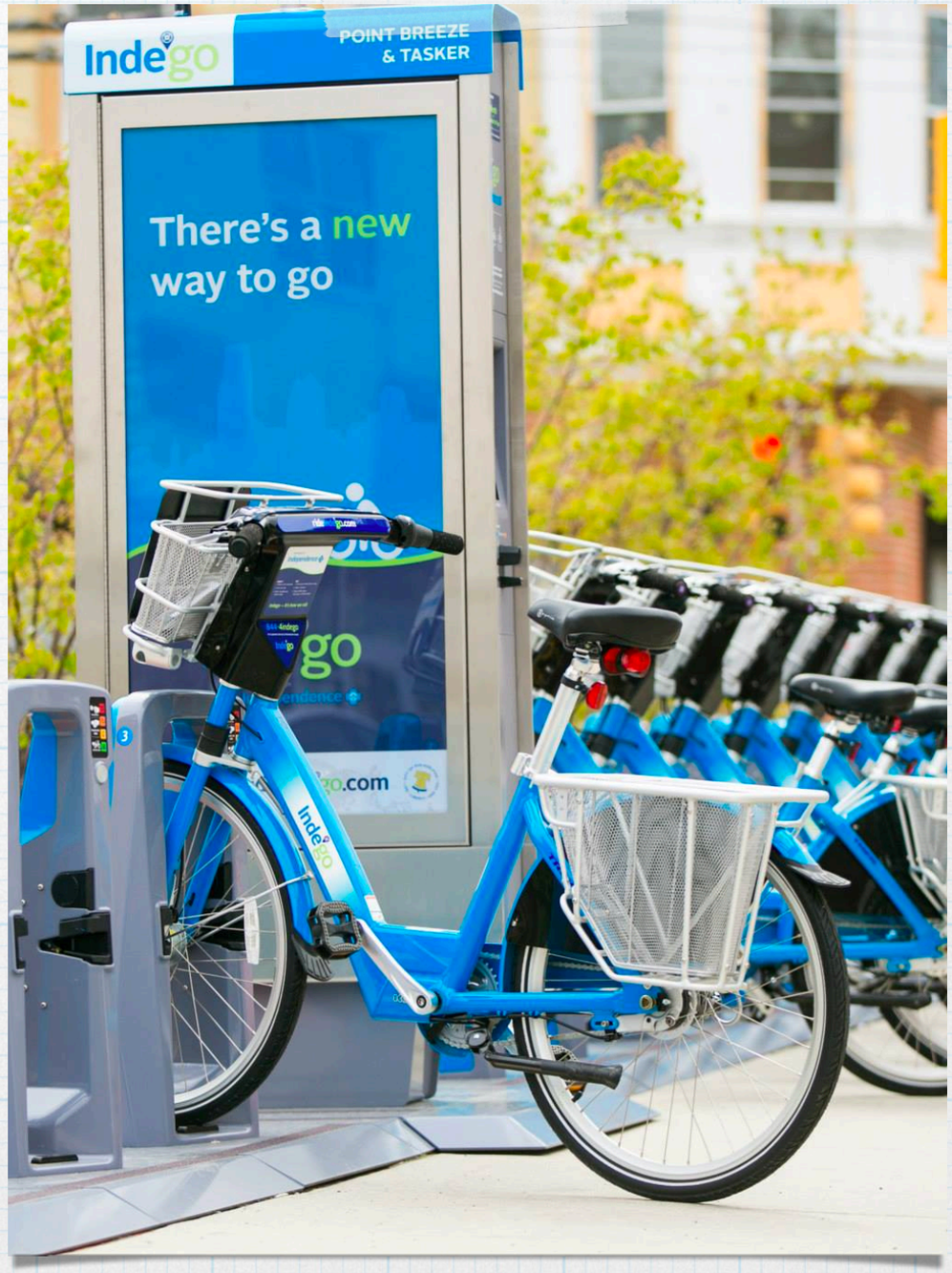
Eric O'Callaghan 🚲

What Bike-share? What API?

* You know, those big blue stations full with the signs, docks, solar panels, and BICYCLES!

* There are about 120 of those stations all across the city of Philadelphia

* There is a (Geo)JSON API that returns the number of available bicycles, empty docks, and total docks at each station



Background on the API

* The primary Indego bike-share station API is available here:
    * https://www.rideindego.com/stations/json/
* The API is simply a GeoJSON file that lists each of the stations and provides some (real-time?) data on each one
* In my opinion, the most interesting things that are provided about each station by the API are:
    * kioskId (station identifier)
    * Location (GPS coordinates, address, and zip code)
    * Available number of bicycles and docks
    * Total number of docks (occasionally not equal to available bikes+docks!)

Mmmm....
JSON!

https://curl.haxx.se/

https://stedolan.github.io/jq/

```
curl -s 'https://www.rideindego.com/stations/json/'
          | jq '.features[].properties |
{name,latitude,longitude,addressStreet,addressZipCo
   de,bikesAvailable,docksAvailable,totalDocks}'
```

🤢 ~~XML~~ 🤮


```
{
  "name": "Municipal Services Building Plaza",
  "latitude": 39.95378,
  "longitude": -75.16374,
  "addressStreet": "1401 John F. Kennedy Blvd.",
  "addressZipCode": "19102",
  "bikesAvailable": 5,
  "docksAvailable": 25,
  "totalDocks": 30
}
{
  "name": "Welcome Park, NPS",
  "latitude": 39.94733,
  "longitude": -75.14403,
  "addressStreet": "191 S. 2nd St.",
  "addressZipCode": "19106",
  "bikesAvailable": 12,
  "docksAvailable": 1,
  "totalDocks": 13
}
{
  "name": "40th & Spruce",
  "latitude": 39.9522,
  "longitude": -75.20311,
  "addressStreet": "246 S. 40th St.",
  "addressZipCode": "19104",
  "bikesAvailable": 3,
  "docksAvailable": 14,
  "totalDocks": 17
}
```

Finding stations

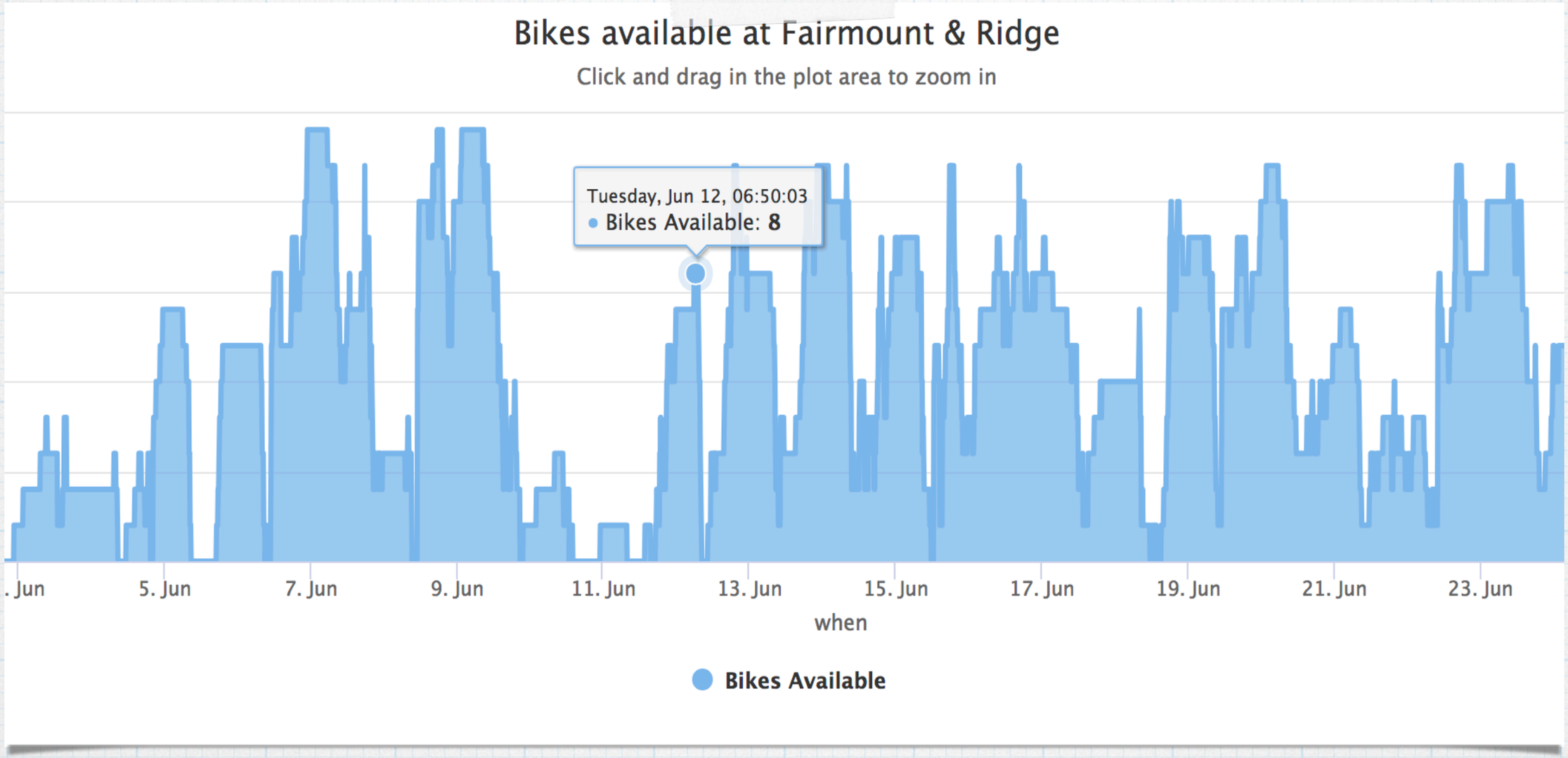
* The primary Indego bike-share API GeoJSON file lists all stations. It is not RESTful and does not offer any way to search for specific stations :(

* However, I created both a PHP and a Python library for accessing the API that sort of lets you "search" the stations:

  * PHP: https://github.com/ericoc/indego-php-lib

  * Python: https://github.com/ericoc/indego-py-lib

* I would love to see expanded documentation of the API and a proper search feature though!



^ This is a chart

It shows the availability of bicycles at a single station over a thirty (30) day period.

Conclusion

* I really like the idea of making charts of the availability of bicycles
    * It looks especially cool during commuting hours, in my opinion
* This is just one idea of what to use the Indego API for
* It's so much cool data that is straight from the real-world as people move throughout the city!

More information

* Here's a big dump of links if you found any of this presentation at all interesting:
* me:
    * https://ericoc.com/ - my website
    * https://indego.ericoc.com/ - my Indego page with block charts of each station and historical graphs made using Highcharts
    * https://github.com/ericoc - my github with indego-php-lib and indego-py-lib
    * https://www.highcharts.com/blog/post/250-tracking-bike-share-usage-in-philadelphia/ - blog post that I wrote for Highcharts
* Indego:
    * https://gbfs.bcycle.com/bcycle_indego/gbfs.json - a more minimal API for the Philadelphia bike-share
    * https://www.opendataphilly.org/organization/city-of-philadelphia?q=indego - open data philly list with a tiny bit more information about the API(s)
* these two blog posts, by Randal Olson, were my first inspiration for visualizing bike-share usage:
    * http://www.randalolson.com/2015/07/18/visualizing-indego-bike-share-usage-patterns-in-philadelphia/
    * http://www.randalolson.com/2015/09/05/visualizing-indego-bike-share-usage-patterns-in-philadelphia-