



DATA SCIENCE PROGRAM
COLUMBIAN COLLEGE OF ARTS AND SCIENCES

GW Business
MS in Business Analytics

101010
110111
101110
STEMworks
011001
010001



HIPPO HACKS

GELMAN STEMWORKS LAB | APRIL 12 | 6 PM*

*** 16 HOUR HACKATHON EVENT**

About Me

[linkedin.com/in/isaacgritz](https://www.linkedin.com/in/isaacgritz)
isaac.gritz@microsoft.com



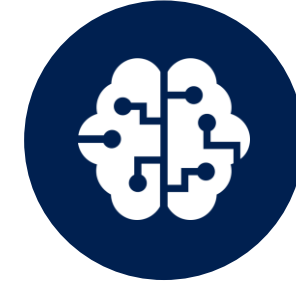
Graduated from GWU
BBA in Business Analytics and
Finance, Minor in Statistics

May 2017



Joined MACH Program
as a **Data & AI**
Consultant

July 2017



Changed roles to
Data Scientist

August 2018



Founding member &
former president



Completed Data Science
Part-Time Program

Big Data



Completed Microsoft Big
Data Professional Program

Why do Hippo Hacks?

- 1 Great opportunity to leverage your skills in data, stats, and/or coding to solve an interesting challenge
- 2 Build up your portfolio with what you create (hint: great for applying to jobs/internships)
- 3 Meet others with similar interests

Show Me The Data



DC transit data from WMTA, DC Circulator, DC Streetcar, dockless bikes/scooters, Uber, and more!

Further details and links to the data can be found here:

aka.ms/hippohacks2019

You are encouraged to use any of the data sources or combine with outside data sources as well.

What problem can I solve?

This challenge is intentionally open ended to allow you to explore the data sets, get creative, and solve the problem you care about.

What can I build?

You are encouraged to build anything that shows off analysis, visualization, or a product built using data.

Examples of outputs:

- Data Visualization / Dashboard
- Web Application
- Predictive Model
- PowerPoint Presentation
- Bot
- Application
- GIS / map

What tools do I have?

You are encouraged to use any tools you are comfortable with.
Here are some suggestions:

Statistical Programming Languages:

- R or Python
- R Shiny or Flask for building web applications

Programming Languages

- Backend languages such as C#, Java
- Frontend languages such as JavaScript/TypeScript

Data Visualization

- Power BI
- Tableau

Mapping / GIS

- ArcGIS

Bot

- Azure Bot Service

Judging Criteria

- A panel of judges will evaluate each project and pick winners. The judges will base their assessments on the 3 main categories below and award prizes to the top project in each category

Product	A data product, something used by a customer over time, will be judged upon its usefulness, interface and creativity.
Analytics	A good analysis project will apply sophisticated statistics or machine learning to derive interesting insights from the dataset. An analysis project will be judged upon technical strength, complexity, impact of derived result and innovation.
Visualization	A good visualization project will find interesting ways to consider a dataset or combine information from multiple data sources. A visualization project will be judged upon design aesthetics, value add, and complexity.

Workshop



Intro to APIs in Python

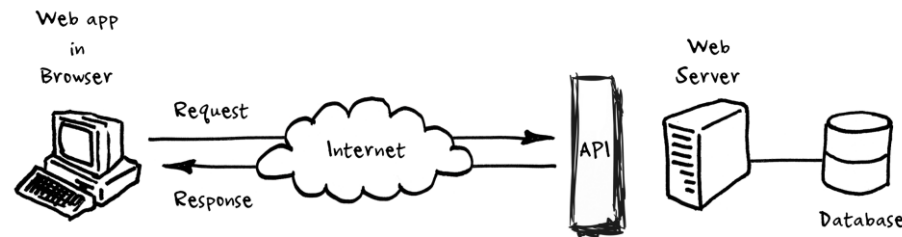
Isaac Gritz
Data Scientist | Enterprise Services



What is an API?

What is an API?

- API stands for Application Programming Interface
- APIs are web-based calls that allow an application to access data and specific functionality from a server
- Most major companies have APIs that you can use to access their data without scraping the web
- Examples:
 - Twitter APIs for analyzing tweets on a topic: <https://developer.twitter.com/en/docs.html>
 - Dark Sky API for accessing weather data: <https://darksky.net/dev>
 - Microsoft's Cognitive Services APIs for pre-configured AI (computer vision, text analytics): <https://azure.microsoft.com/en-us/services/cognitive-services/>



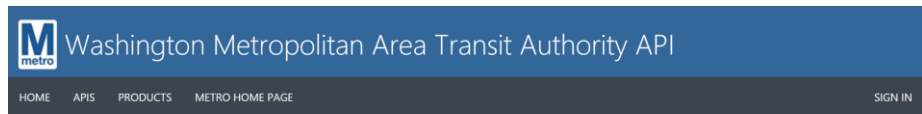
What is an API?

- Generally web APIs are built on RESTful
- Allows you to use HTTP “requests” **GET, POST, PUT, DELETE** to a URL
 - GET – retrieve data from a server
 - PUT – update/replace an item from a server
 - POST – create a new item in the server
 - DELETE – delete an item from a server
- A request will return a JSON or XML “response” with info you requested
- APIs are generally rate limited on number of calls or calls/time period
- APIs often require you to register your application and use a token to authorize API calls
 - Server token – used for simple API calls
 - Bearer token – used for applications to access APIs, user has to accept permissions

What Tools Can I Use?



- Postman is a great app for testing APIs: <https://www.getpostman.com/>
- API calls can be made from programming languages such as Python, C# and more

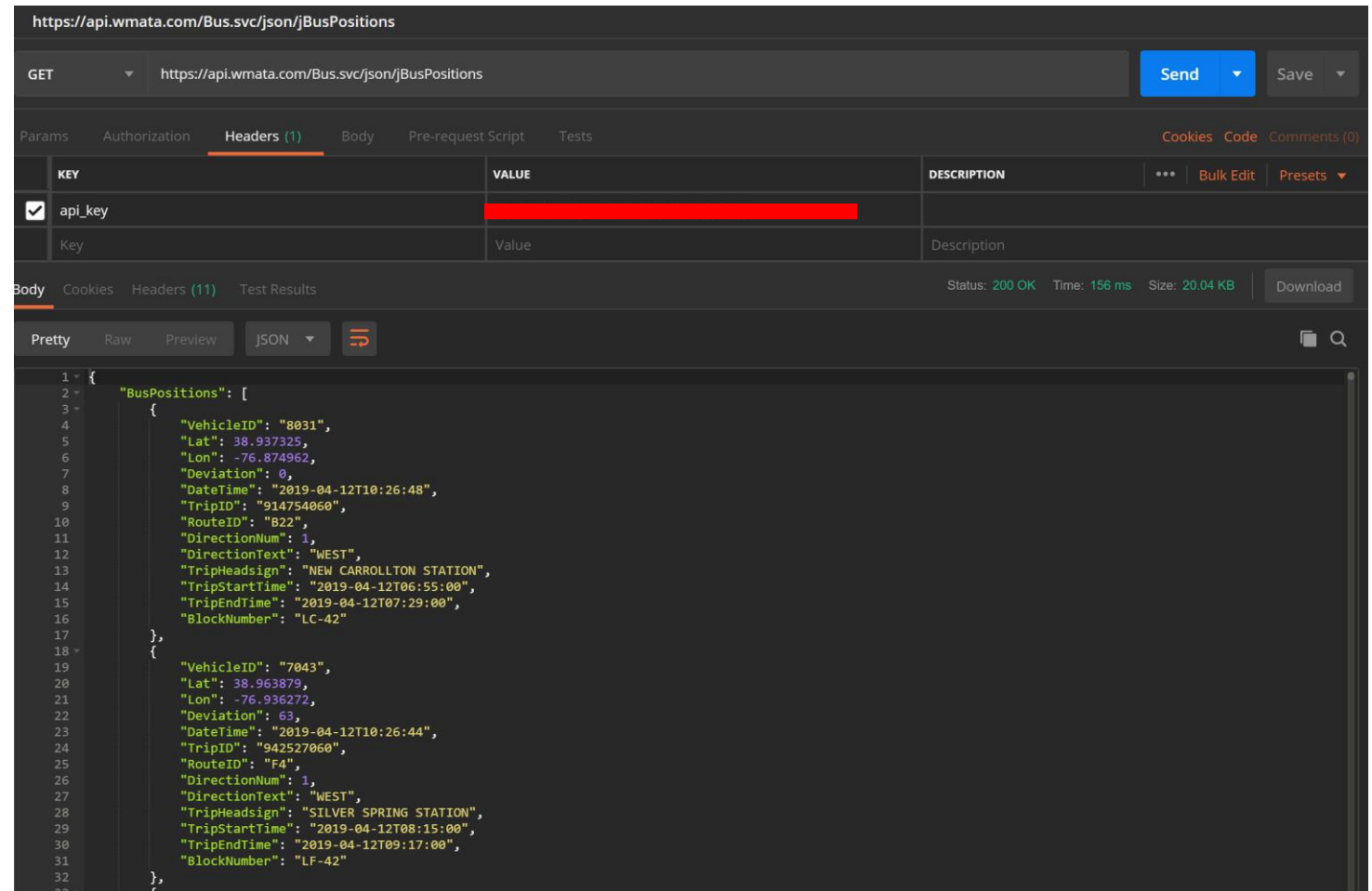


Your subscriptions

Subscription details		Product	State	Action
Subscription name	Default Tier	Default Tier	Active	Rename Cancel
Started on	04/10/2019			
Primary key	XXXXXXXXXXXXXXXXXXXXXXXXXXXX			Show Regenerate
Secondary key	XXXXXXXXXXXXXXXXXXXXXXXXXXXX			Show Regenerate

Looking to close your account?

[Close account](#)



Where Can I Find APIs?

- Programmable Web is a great website for finding APIs:

<https://www.programmableweb.com/>

The screenshot displays the Programmable Web website interface. At the top, the browser address bar shows the URL <https://www.programmableweb.com>. Below the address bar is a navigation menu with a blue puzzle piece icon, followed by links: [LEARN ABOUT APIS](#), [WHAT IS AN API ?](#), [API NEWS](#), and [API DIRECTORY](#). A search bar is located on the right side of the navigation menu.

The main content area is divided into three columns:

- LATEST APIS** (with a link [Add Your API](#)):
 - Goalserve Sports Data Feeds Cricket
 - Goalserve Sports Data Feeds NFL Football
 - Yale Buildings
 - Yale UMessages
 - Quantone Music
 - Heat Wallet
 - Platforme
 - RainViewer
 - VidGrid
 - Bulksmsplans[More APIS](#)
- API NEWS**:
 - 42Crunch Introduces API Security Platform
 - Scrapinghub Announces AI-Driven Web Scraping API
 - Google Announces Apigee Hybrid API Management
 - Daily API RoundUp: Globalhop, Remove.bg, Targomo...
 - Looker Introduces New Developer Tools
 - Google Adds Smart Replies and Language...[More API News](#)
- API TUTORIALS**:
 - How to Build Twilio Appointment Reminders with...
 - How to Make a Heatmap with Mapbox GL JS
 - How to Build a Store Locator Using Mapbox GL JS
 - How to Switch from Google Maps to Mapbox
 - Beginning Machine Learning: The "Hello World..."
 - How to Discover Channel IDs with the YouTube Data...[More API Tutorials](#)

Below the main content area, there is a section titled **LEARN ABOUT APIS** with a link [SEE ALL API UNIVERSITY COURSES](#). This section features three video thumbnails:

- APIs 101** (with a blue puzzle piece icon)
- Real World API Business Models!** (with a blue puzzle piece icon)
- Maximizing the ROI on Your API** (with a blue puzzle piece icon)

Demo