

WiFi LIVE ONLINE TRAINING

Minimum Viable Machine Learning

Graduating your models out of Jupyter and into Production

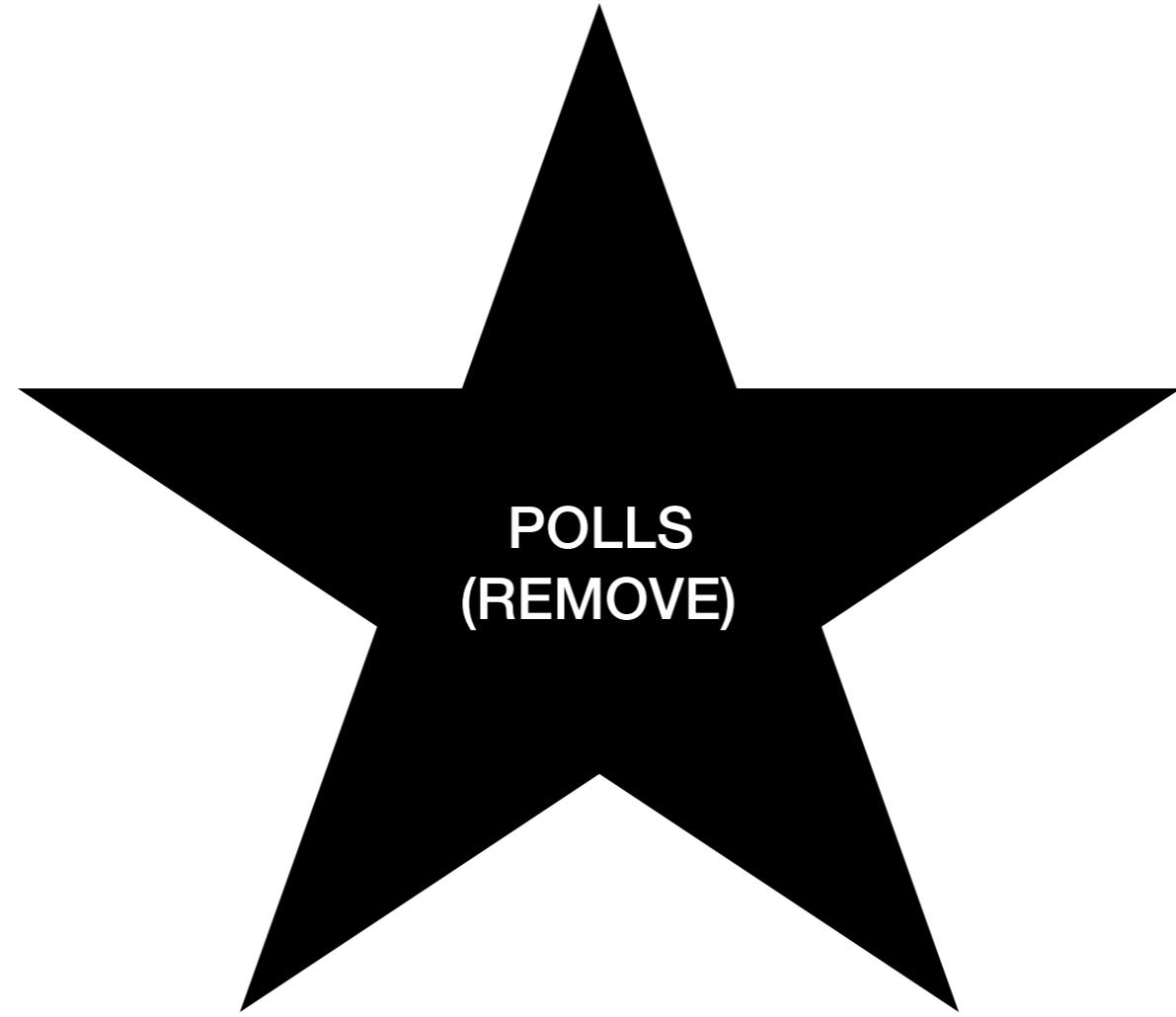


github.com/maxhumber/MVML

January 9, 2020

12:00pm – 2:00pm EST





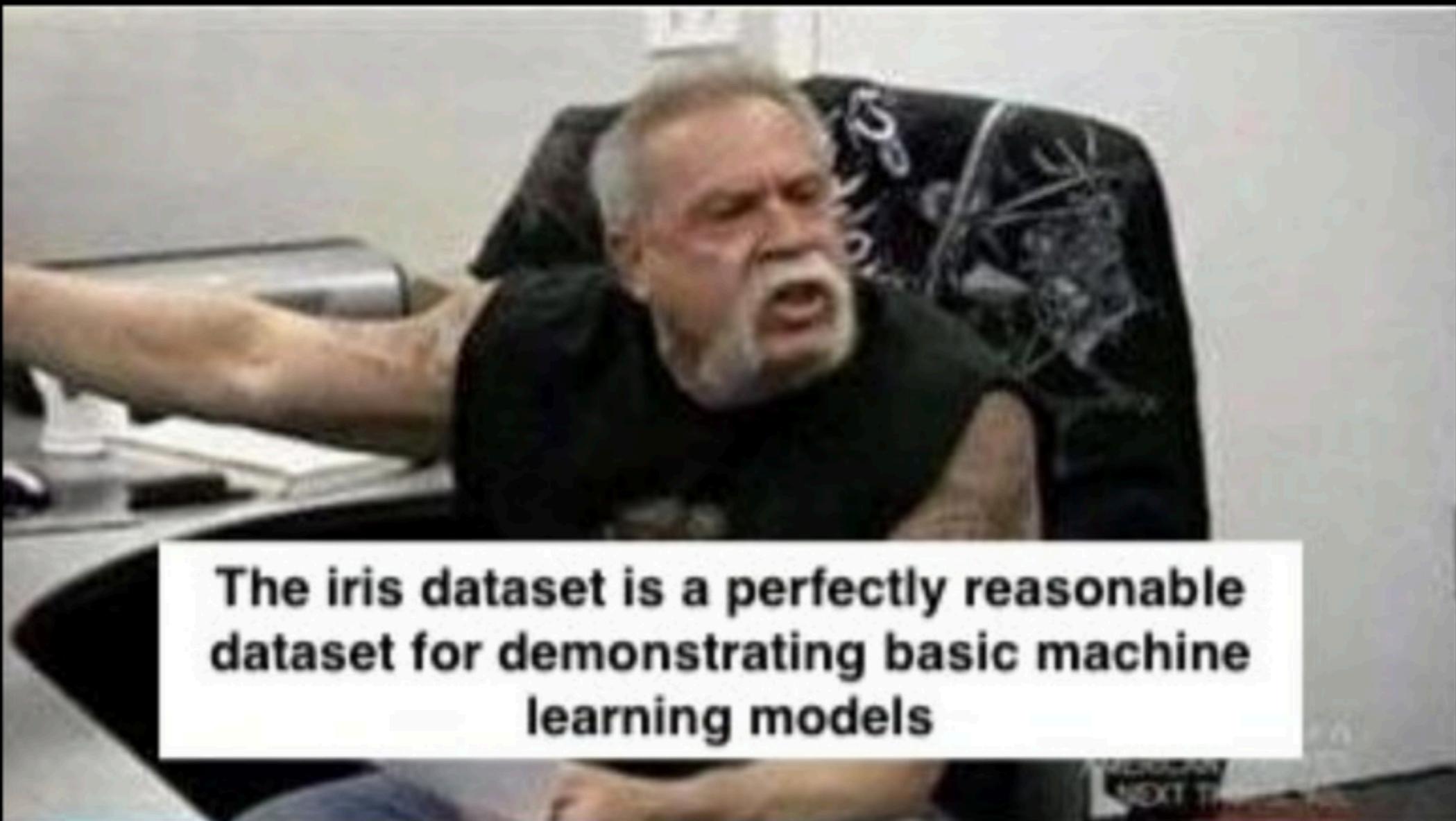
1. Have you ever done any frontend web development?
2. Have you ever deployed a machine learning model?

But first



DATA

Full
stack
developer



**The iris dataset is a perfectly reasonable
dataset for demonstrating basic machine
learning models**



**It lulls beginners into falsely
thinking working with data is
easy**



**EVERYONE NEEDS TO START
SOMEWHERE**

IT'S THE WRONG
PLACE FOR
BEGINNERS TO
START

AMERICAN DREAM
NEXT THURSDAY



**YOU DON'T
REMEMBER
WHAT IT'S LIKE
TO BE A
BEGINNER**



Trending

See what the GitHub community is most excited about today.

[Repositories](#)[Developers](#)

Spoken Language: Any ▾

Language: Python ▾

Date range: Today ▾

[google-research / ALBERT](#)

[★ Star](#)

ALBERT: A Lite BERT for Self-supervised Learning of Language Representations

 Python  711  87 Built by 

 167 stars today

[vinta / awesome-python](#)

[★ Star](#)

A curated list of awesome Python frameworks, libraries, software and resources

 Python  77,622  15,256 Built by 

 73 stars today

[rq / rq](#)

[★ Star](#)

Simple job queues for Python

 Python  6,420  1,081 Built by 

 195 stars today

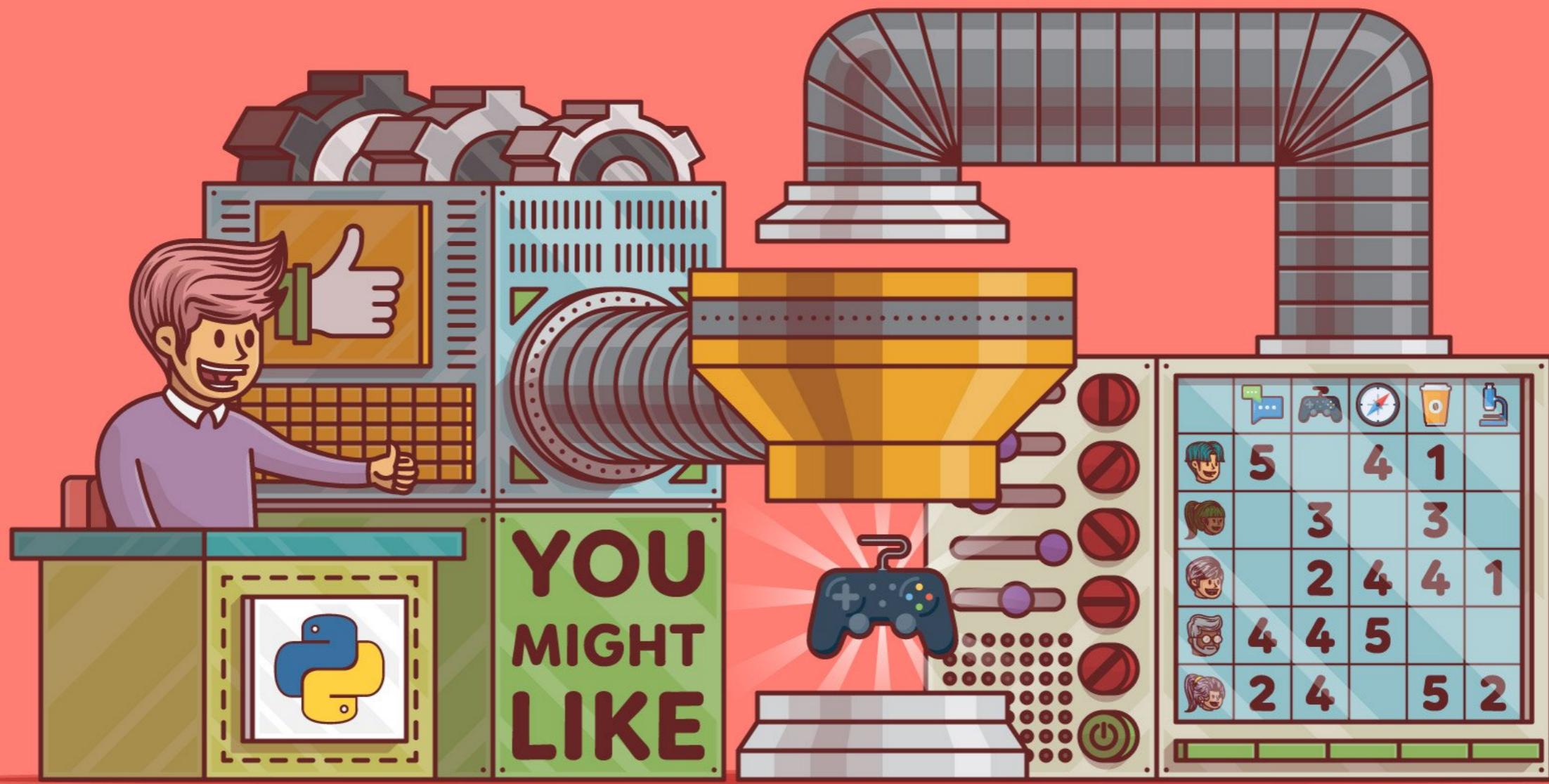
[huggingface / transformers](#)

[★ Star](#)

 Transformers: State-of-the-art Natural Language Processing for TensorFlow 2.0 and PyTorch.

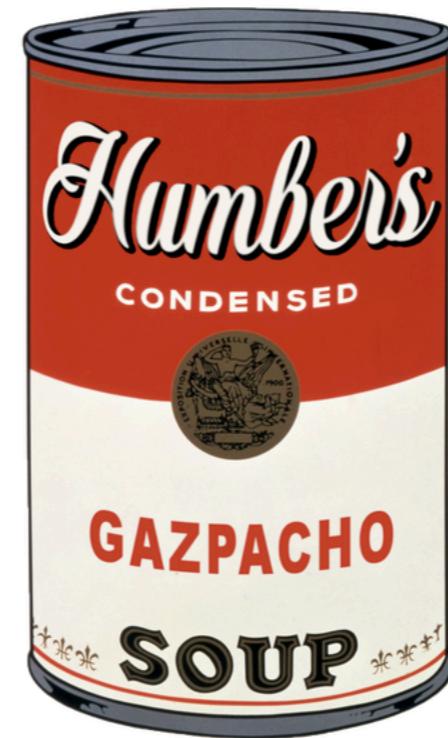
 Python  20,029  4,504 Built by 

 82 stars today



	A	B	C	D	E
1	description	language	repo	stargazers	user
2	Repository for data structure and algorithms	Python	prabhupant/python-ds	621	garrychan
3	Python/PyMC3 port of the examples in " Stat Jupyter Notebook	Python	aloctavodia/Statistical-Rethinking-with	636	garrychan
4	TensorFlow Neural Machine Translation Tuto	Python	tensorflow/nmt	4996	garrychan
5	Apple's gazpacho is a web scraping library	Python	maxhumber/gazpacho	123	garrychan
6	Apple's Transformers: State-of-the-art Natural Language Processing	Python	huggingface/transformers	15063	garrychan
7	HDF5 for Python -- The h5py package is a Pyt	Python	h5py/h5py	1205	garrychan
8	Tensors and Dynamic neural networks in PyTorch	C++	pytorch/pytorch	32418	garrychan
9	TensorFlow code and pre-trained models for Python		google-research/bert	18595	garrychan
10	Simple, Pythonic, text processing--Sentiment	Python	sloria/TextBlob	6579	garrychan
11	Code for the paper "Language Models are Universal"	Python	openai/gpt-2	8258	garrychan
12	Fast and memory-efficient ANN with a subset of TensorFlow	Python	matsui528/rii	60	garrychan
13	Fast topic modeling platform	C++	bigartm/bigartm	455	garrychan
14	Missing data visualization module for Python	Python	ResidentMario/missingno	1815	garrychan
15	Ensemble topic modelling with pLSA	Python	lmcinnes/enstop	56	garrychan
16	Python 3 Spelling Corrector	Python	phatpiglet/autocomplete	120	garrychan
17	Pure Python Spell Checking http://pyspellche	Python	barrust/pyspellchecker	137	garrychan
18	Fuzzy String Matching in Python	Python	seatgeek/fuzzywuzzy	6117	garrychan
19	GloVe model for distributed word representations	C	stanfordnlp/GloVe	4104	garrychan
20	A list of useful resources to learn Data Engineering from scratch	Python	adilkhash/Data-Engineering-HowTo	1002	garrychan
21	Natural Language Processing Tutorial for Deep Learning	Jupyter Notebook	graykode/nlp-tutorial	4573	garrychan
22	Apple's Charts with pure python	Python	maxhumber/chart	35	garrychan
23	Scalable, Portable and Distributed Gradient Boosting	C++	dmlc/xgboost	17407	garrychan
24	Apache Airflow	Python	apache/airflow	14223	garrychan
25	A series of Jupyter notebooks that walk you through machine learning	Jupyter Notebook	ageron/handson-ml	17156	garrychan
26	GraphQL framework for Python	Python	graphql-python/graphene	5068	garrychan
27	Markov Chain is a small, but flexible Markov chain	Python	maxhumber/marc	30	garrychan
28	Code for the book Grokking Algorithms (http://grokkingalgorithms.com)	JavaScript	egonSchiele/grokking_algorithms	3156	garrychan
29	Jupyter notebooks for the code samples of the book Deep Learning	Jupyter Notebook	fchollet/deep-learning-with-python-notebooks	8468	garrychan
30	A list of tech employers located in Toronto or who hire remote workers	Python	toriagibbs/toronto-tech-scene	306	garrychan
31	Luigi is a Python module that helps you build complex data pipelines	Python	spotify/luigi	12316	garrychan
32	How likely is a team to make the Final Four	Jupyter Notebook	garrychan/marchmadness	1	garrychan
33	Python Machine Learning - Second Edition, part 1	Jupyter Notebook	PacktPublishing/Python-Machine-Learning	257	garrychan
34	A Bayesian A/B Test: Are the Warriors better than the Cavaliers?	Jupyter Notebook	garrychan/ab_kd	1	garrychan
35	Recipe Recommender System	Python	garrychan/recipe_recommender_system	3	garrychan
36	The "Python Machine Learning (1st edition)" book	Jupyter Notebook	rasbt/python-machine-learning-book	10225	garrychan

data/stars.csv



scraper [gazpacho](#) dependencies 0 build [passing](#) pypi v0.9 downloads 5k

gazpacho.xyz

1

Develop



model/model.ipynb

Q&A

2

Design



Create a file called hello.py

```
from flask import Flask
app = Flask(__name__)

@app.route("/")
def hello():
    return "Hello World!"

if __name__ == "__main__":
    app.run()
```

Finally run the web app using this command:

```
$ python hello.py
* Running on http://localhost:5000/
```

Open <http://localhost:5000/> in your webbrowser, and “Hello World!” should appear.

Create a file called hello.py:

```
from flask import Flask
app = Flask(__name__)

@app.route("/")
def hello():
    return "Hello World!"

if __name__ == "__main__":
    app.run()
```

Finally run the web app using the command:

```
$ python hello.py
* Running on http://localhost:5000
```

Open <http://localhost:5000> in your browser. You should see "Hello World!" appear.

untitled - Paint

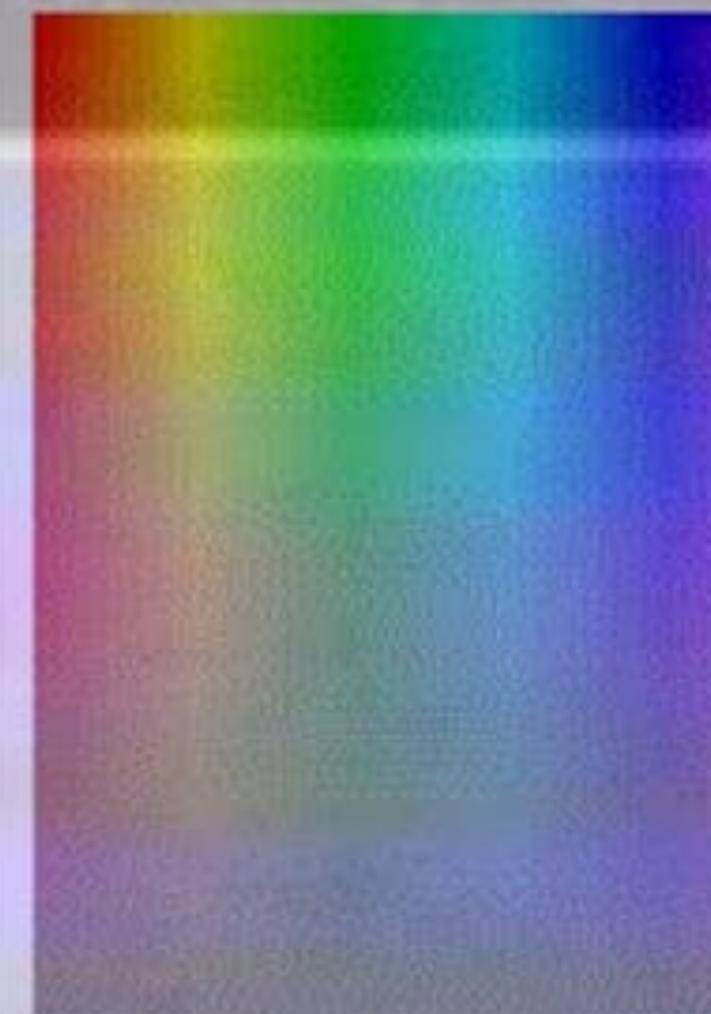


PaintWinCE

File Edit View Image Options Help



raised by
the internet



Tutorial 1



CONGRATULATIONS!

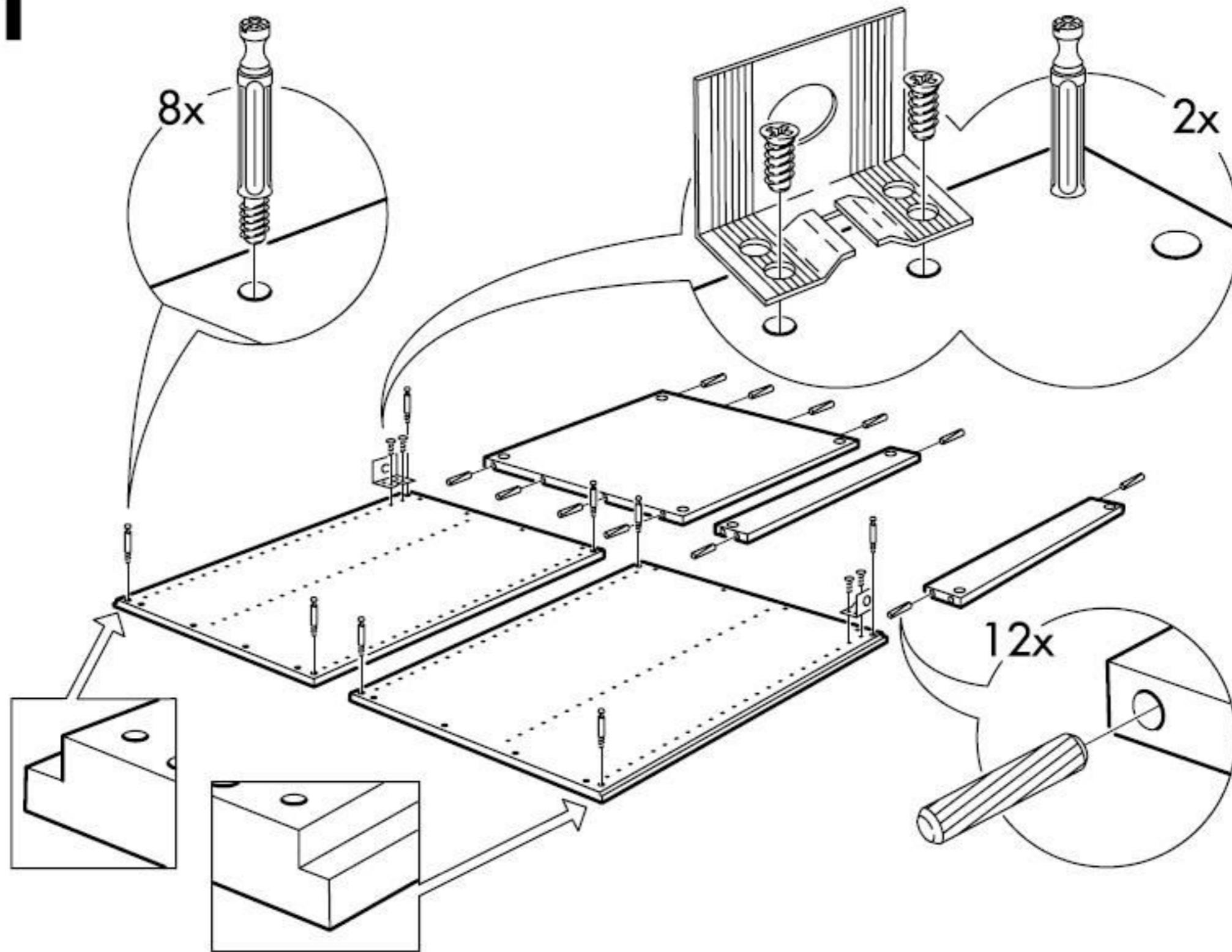


This IS NOT A JOKE!

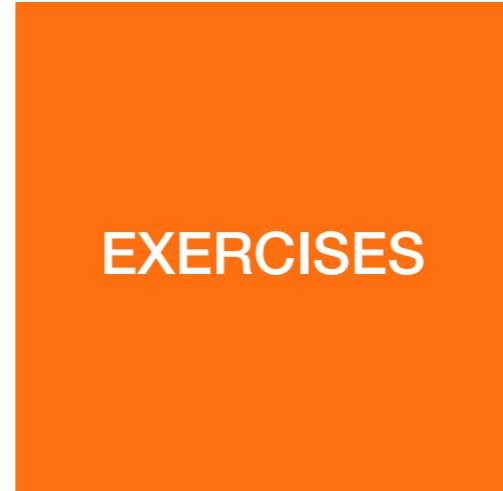






1





EXERCISES

exercises/fmodel.py

Q&A

3

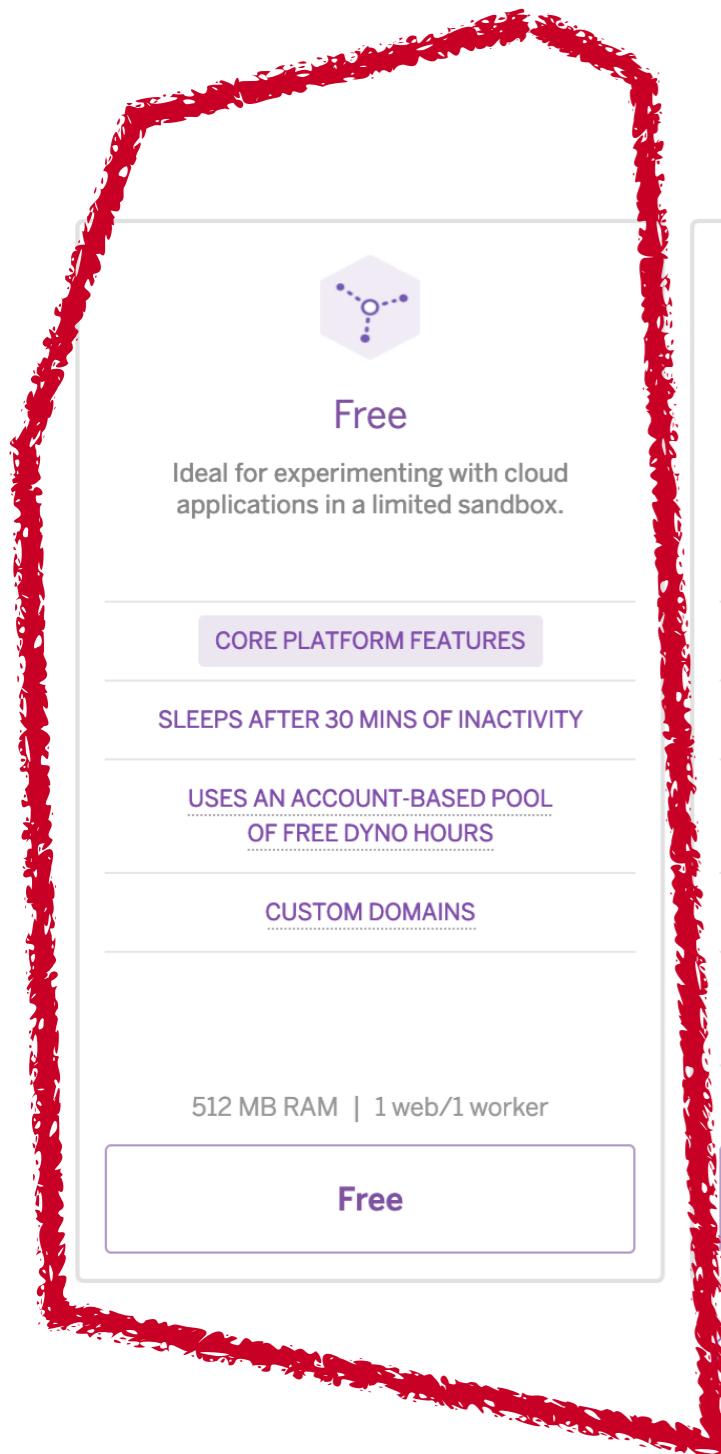
Deploy





HEROKU

CITY OF
GRANBO



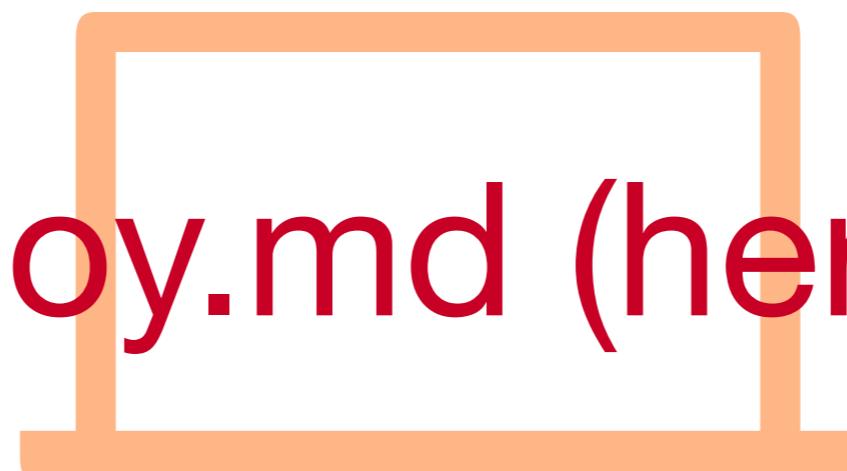
Plan	Core Platform Features	Memory & Process Types	Price
Free	CORE PLATFORM FEATURES SLEEPS AFTER 30 MINS OF INACTIVITY USES AN ACCOUNT-BASED POOL OF FREE DYNOS CUSTOM DOMAINS	512 MB RAM 1 web/1 worker	Free
Hobby	CORE PLATFORM FEATURES NEVER SLEEPS FREE SSL & AUTOMATED CERTIFICATE MANAGEMENT FOR CUSTOM DOMAINS APPLICATION METRICS MULTIPLE WORKERS FOR MORE POWERFUL APPS	512 MB RAM 10 Process Types	\$7 per dyno/month <small>prorated to the second</small>

PROFESSIONAL	
Standard <small>1X 2X</small>	Performance <small>M L</small>
Enhanced visibility, performance, and availability for powering your professional applications.	Superior performance when it's most critical for your super scale, high traffic apps.

ALL HOBBY FEATURES +	ALL STANDARD FEATURES +
SIMPLE HORIZONTAL SCALABILITY	MIX WITH STANDARD 1X, 2X DYNOS
THRESHOLD ALERTS	DEDICATED
PREBOOT	AUTOSCALING
LANGUAGE RUNTIME METRICS	2.5GB OR 14GB RAM
512MB OR 1GB RAM	∞ Process Types

	\$25 - \$500 per dyno/month <small>prorated to the second</small>
--	---

To start using a Professional plan, select the plan inside the Heroku Dashboard.



deploy.md (heroku)

LEVEL
UP!



Moisey Uretsky, Cofounder DigitalOcean

Originally Answered: What are the advantages and disadvantages of using heroku?

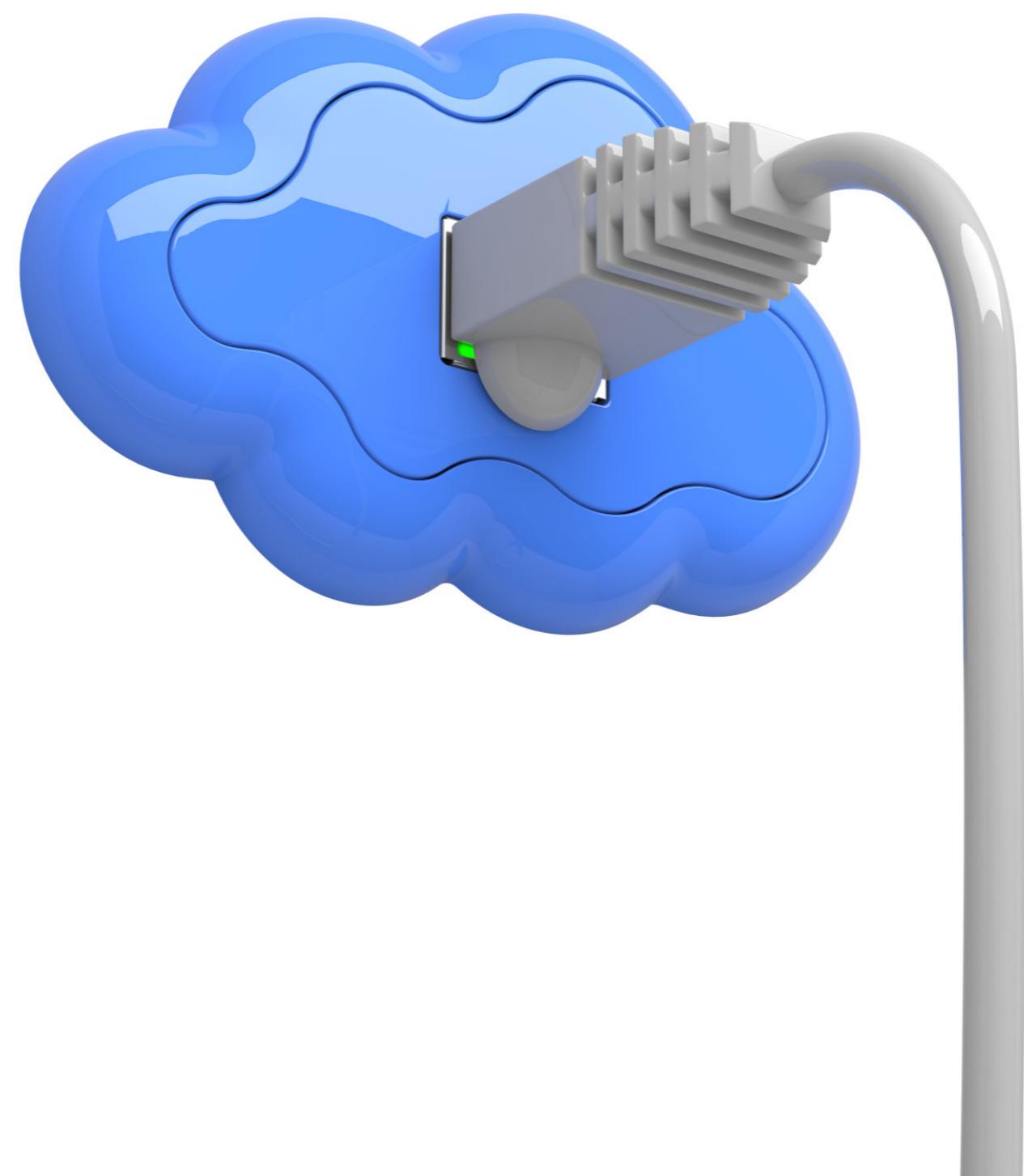
Advantages

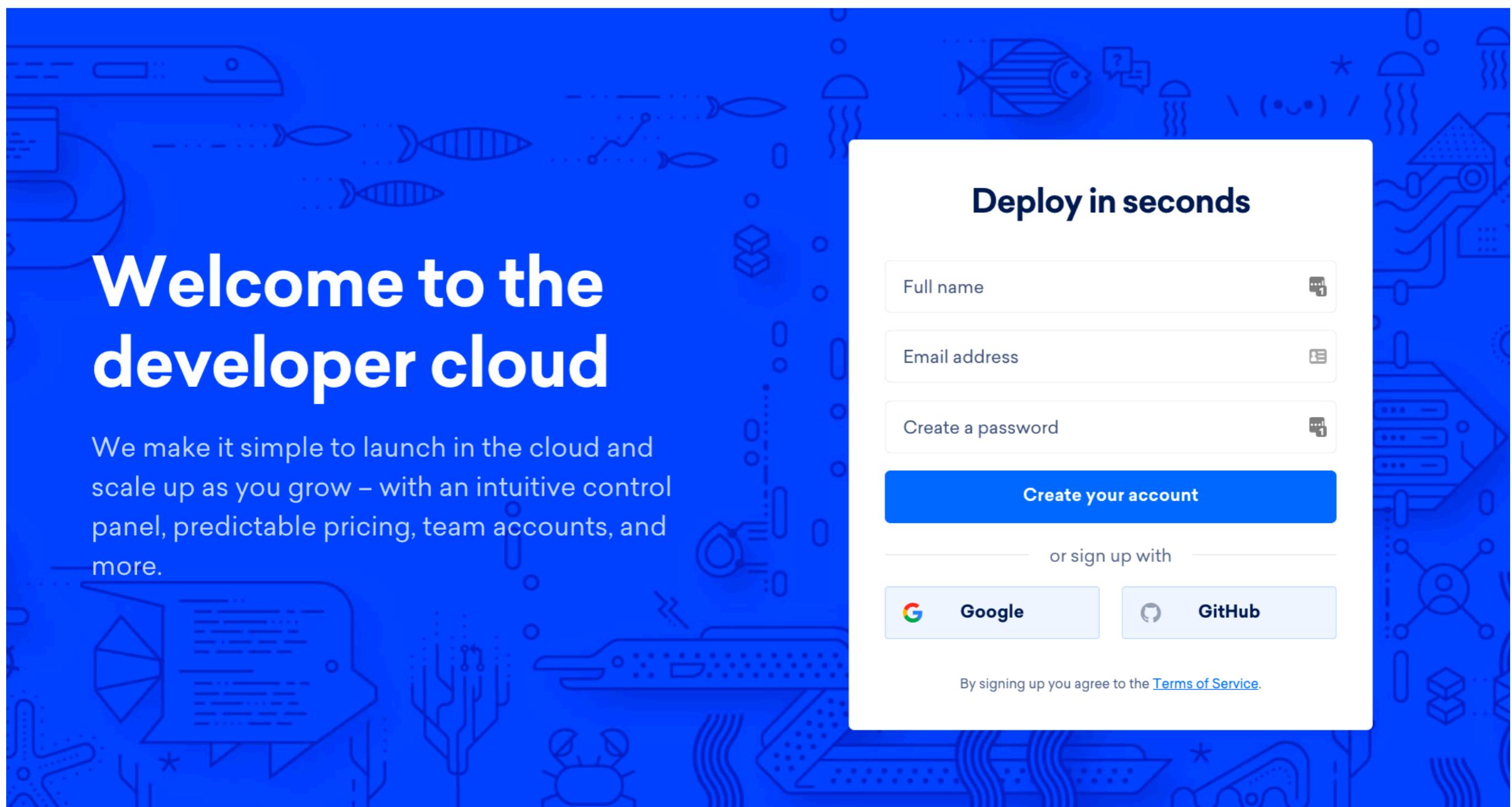
- Easy setup - as a PaaS you don't need to know how to install and configure Apache, nginx, unicorn, passenger, MySQL, Postgres etc
- Easier to scale initially - spin up more dynos, size up DBs etc
- Great plugin support for third party apps

Disadvantages

- Pricey - after the free tier the pricing is steep, you will pay literally 3x - 5x more than a comparable performing setup through an IaaS
- Performance - as highlighted by rap genius recently the switch away from being purely a Rails PaaS and the updates to the routing engine has worse performance which translates to more dynos and still higher costs
- Lock-In - since you aren't managing your infrastructure you can't move it to take advantage of savings
- Single point of failure - granted it happens rarely but it's there. Architecting around this on your own requires a lot of experience but you'll be glad once you get past the learning curve.

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INNOVATIVE BUSINESSES TRUST DIGITALOCEAN



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Compute

Databases

Storage

Tools

Included services

Support

FAQs

⑥ Droplets

Droplets are virtual machines available in multiple configurations of CPU, memory and SSD.

SHARED CPU

DEDICATED CPU

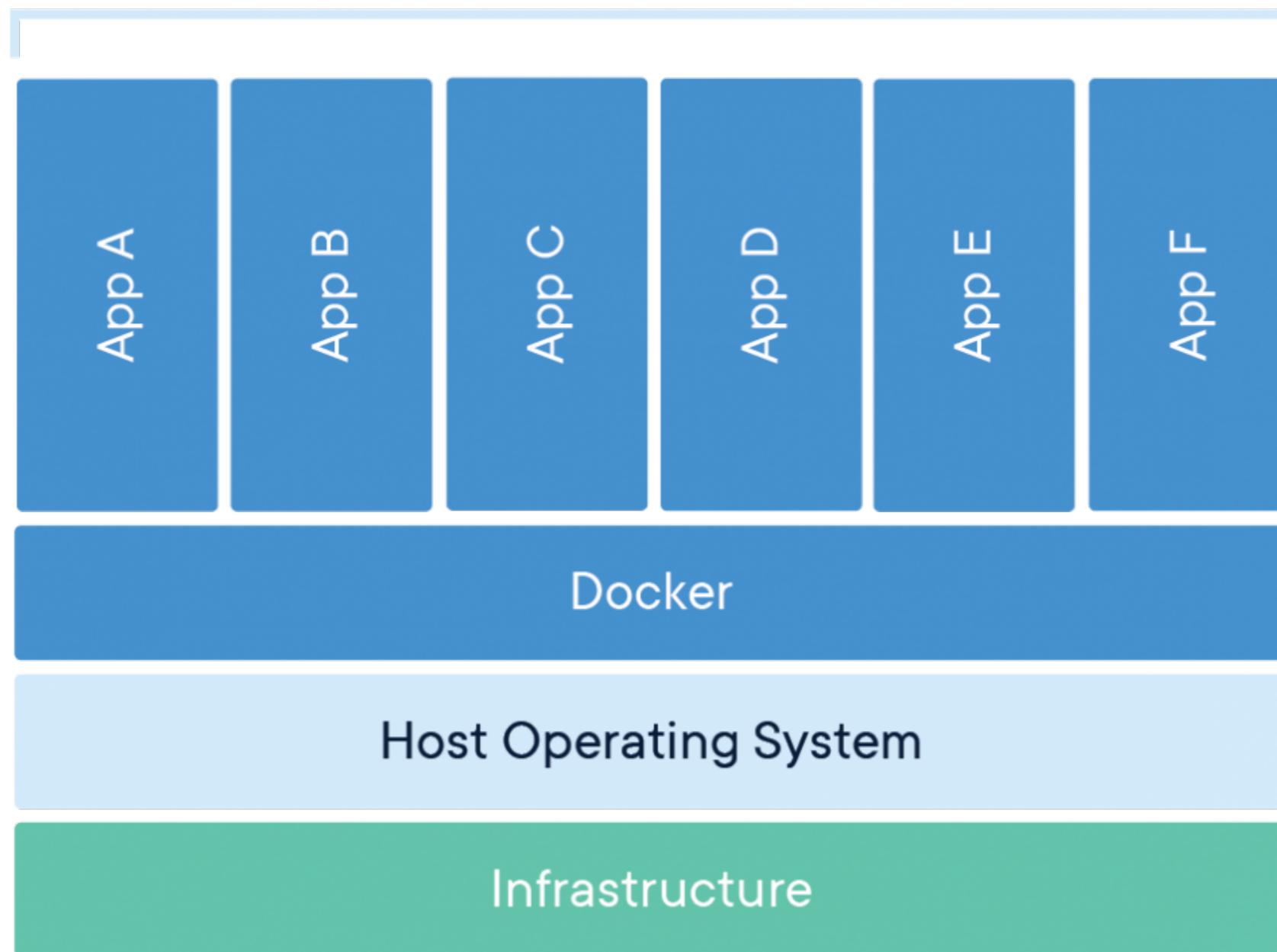
Standard	General Purpose	CPU-Optimized	Memory-Optimized <small>NEW</small>	
MEMORY	VCPUS	TRANSFER	SSD DISK	PRICE
1 GB	1 vCPU	1 TB	25 GB	\$5/mo \$0.007/hr
2 GB	1 vCPU	2 TB	50 GB	\$10/mo \$0.015/hr
3 GB	1 vCPU	3 TB	60 GB	\$15/mo \$0.022/hr





Getting started

Containerized Applications



deploy.md (digitalocean)



HOMEWORK

deploy.md playbook

Q&A

That's all Folks!



packages

MARC

dependencies zero build passing pypi v2.0 downloads 3k

<https://github.com/maxhumber/marc>



dependencies zero build passing pypi v1.0.2 downloads 8k

<https://github.com/maxhumber/mummify>



scraper gazpacho dependencies 0 build passing pypi v0.8.1 downloads 2k

<https://github.com/maxhumber/gazpacho>

Press:

[PythonBytes](#) (Episode 152)

[Awesome Python](#)



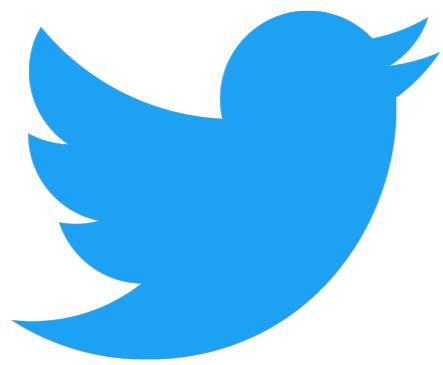
February 6, 2020

Data Engineering for Data Scientists

Presented by Max Humber

152 SPOTS REMAINING

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