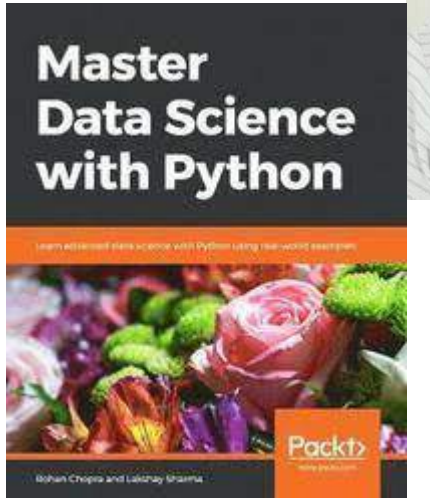
INTRODUCTION TO AI & ML

THANK YOU

WELCOME

Mohamed Noordeen Alaudeen

Lead Data Scientist



https://www.linkedin.com/in/nursnaaz/

https://github.com/nursnaaz

https://stackoverflow.com/users/6949469/nursnaaz

IS DATA SCIENCE A RISING CAREER 2022?

IS DATA SCIENCE A RISING CAREER 2020

glassdoor

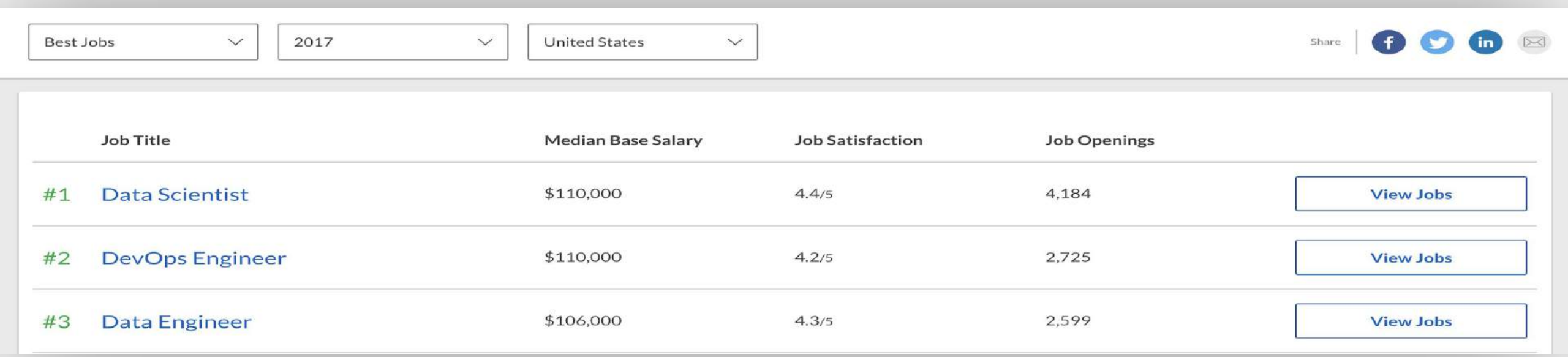
25 Best Jobs in America (2016)

Best Jobs | 2016 | United States

Share

	Job Title	Median Base Salary	Career Opportunity	Job Openings	
#1	Data Scientist	$116,840	4.1/5	1,736	View Jobs
#2	Tax Manager	$108,000	3.9/5	1,574	View Jobs
#3	Solutions Architect	$119,500	3.5/5	2,906	View Jobs

25 Best Jobs in America (2017)



	Job Title	Median Base Salary	Job Satisfaction	Job Openings	
#1	Data Scientist	$110,000	4.4/5	4,184	View Jobs
#2	DevOps Engineer	$110,000	4.2/5	2,725	View Jobs
#3	Data Engineer	$106,000	4.3/5	2,599	View Jobs

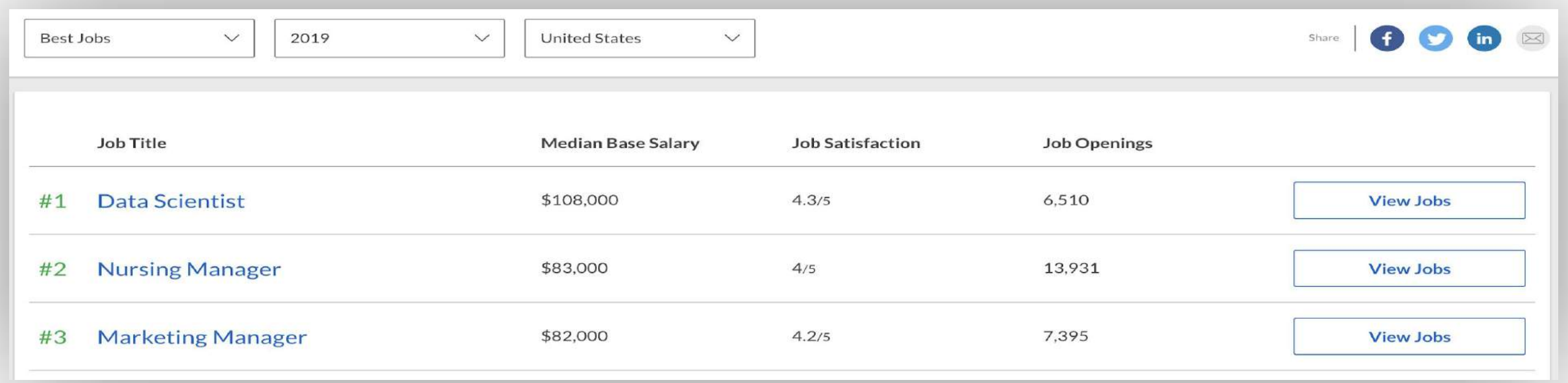
25 Best Jobs in America (2018)

Best Jobs | 2018 | United States

Share

	Job Title	Median Base Salary	Job Satisfaction	Job Openings	
#1	Data Scientist	$110,000	4.2/5	4,524	View Jobs
#2	DevOps Engineer	$105,000	4.0/5	3,369	View Jobs
#3	Marketing Manager	$85,000	4.0/5	6,439	View Jobs

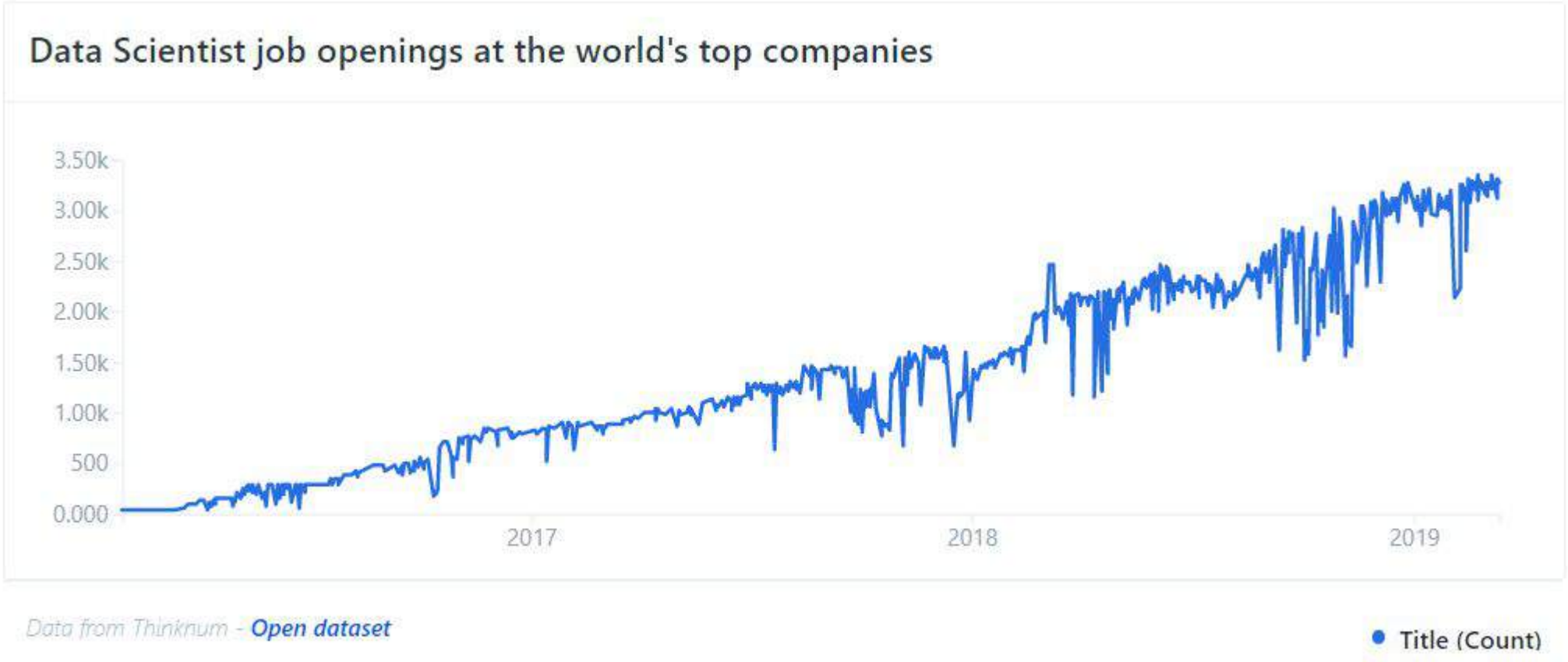
25 Best Jobs in America (2019)



	Job Title	Median Base Salary	Job Satisfaction	Job Openings	
#1	Data Scientist	$108,000	4.3/5	6,510	View Jobs
#2	Nursing Manager	$83,000	4/5	13,931	View Jobs
#3	Marketing Manager	$82,000	4.2/5	7,395	View Jobs

https://www.glassdoor.com/List/Best-Jobs-in-America-LST_KQ0,20.htm

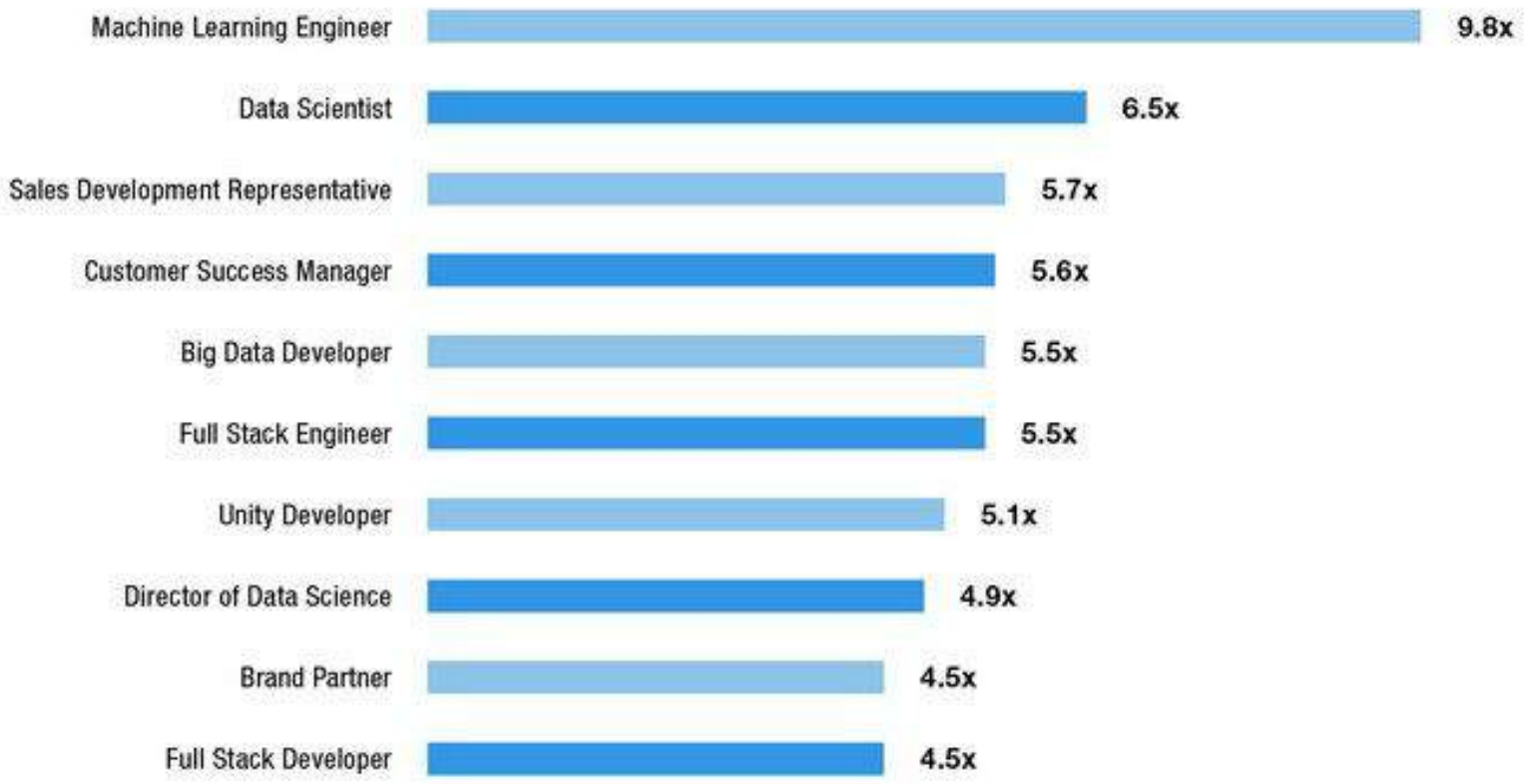
High Demand of Data Scientist



https://www.tecla.io/blog/the-high-demand-for-data-scientists-and-how-to-hire-for-them/

Low Supply of Data Scientist

1. The world needs **28%** more data scientists worldwide by **2020** to meet growing demand
2. There's a shortage of **151,717** data scientists in the U.S. alone.
3. **59%** of data science job demand is in Finance, Professional Services, and IT
4. The highest demand for data skills is in the area of **machine learning.**



WHY THE DEMAND IS HIGH?

DATA SCIENCE DOMAINS

FINANCE Asset pricing, trading strategies and more	**HEALTHCARE** Epidemiology, Insurance, Image recognition	**PHARMACEUTICALS** Patient Journey, Treatment Pathways
GOVERNMENT Climate Change, Public Policy, Security	**MANUFACTURING** Supply Chain, Equipment maintenance and others	**RETAIL** Pricing, Discounts, Market Basket Analysis
OIL & GAS Drilling, Sensors, Equipment Maintenance	**TRANSPORTATION** Airline Promotions, Passenger promotions	**UTILITIES** Smart Meter Grids, Power consumption
WEB INDUSTRY Clickthrough Ads, Marketing	**INTERNET SECURITY** Log monitoring, Alerts, Detecting intrusions	**SPACE & SCIENCE** High Energy Physics, R&D and much more

https://www.indiatoday.in/education-today/jobs-and-careers/story/career-outlook-for-data-scientists-in-india-sky-high-pay-and-rising-demand-1825991-2021-07-09

https://hr.economictimes.indiatimes.com/news/industry/11-5-million-data-science-jobs-will-be-created-globally-by-2026-report/87800256

https://towardsdatascience.com/is-data-science-still-a-rising-career-in-2021-722281f7074c#:~:text=Per%20LinkedIn%2C%20there%20has%20been,in%202020%20at%20around%206500.

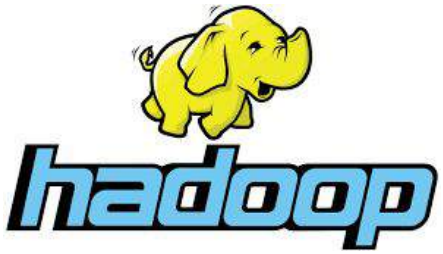
https://data-flair.training/blogs/data-science-job-trends/

My Theory

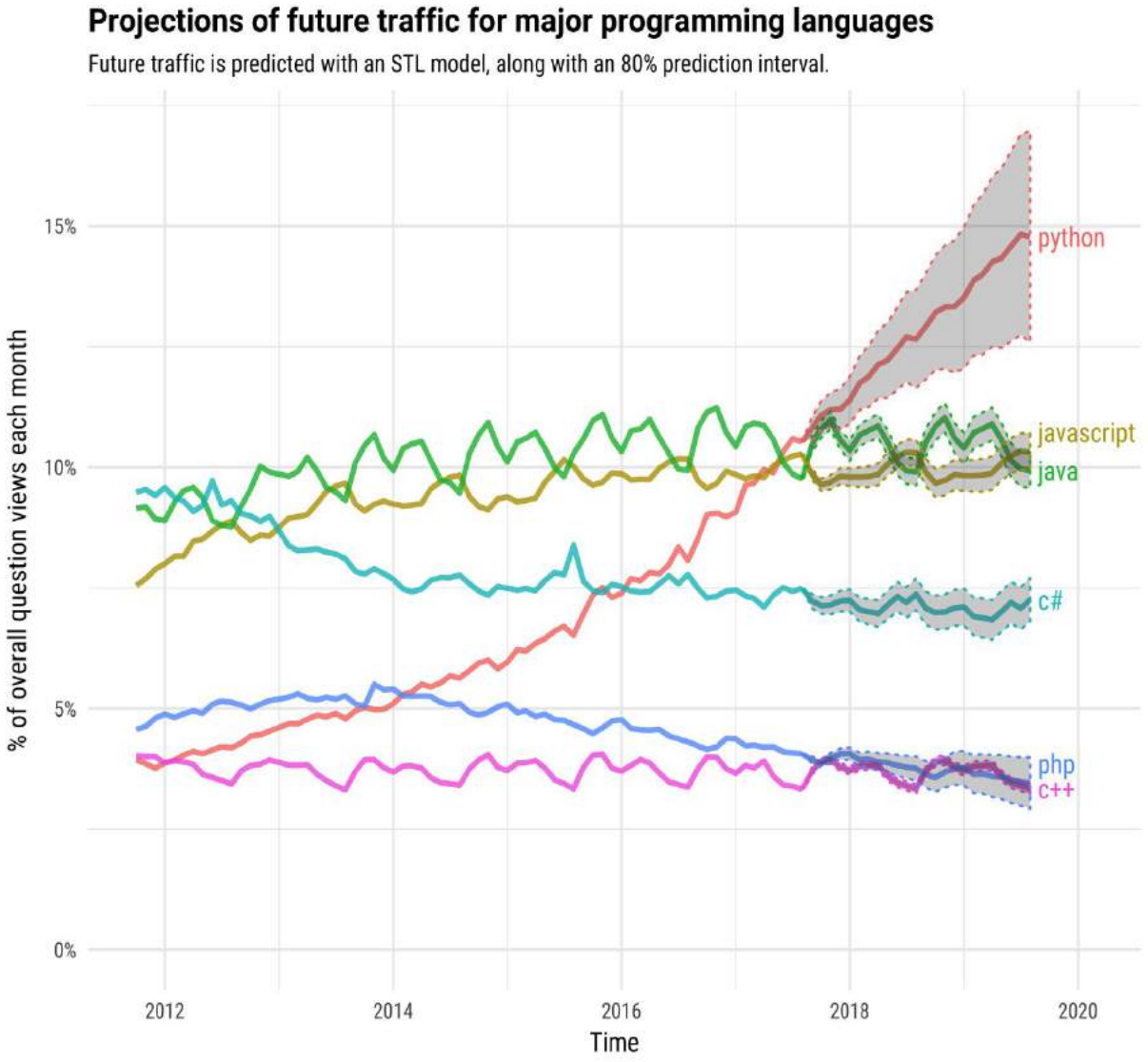
ERA 1

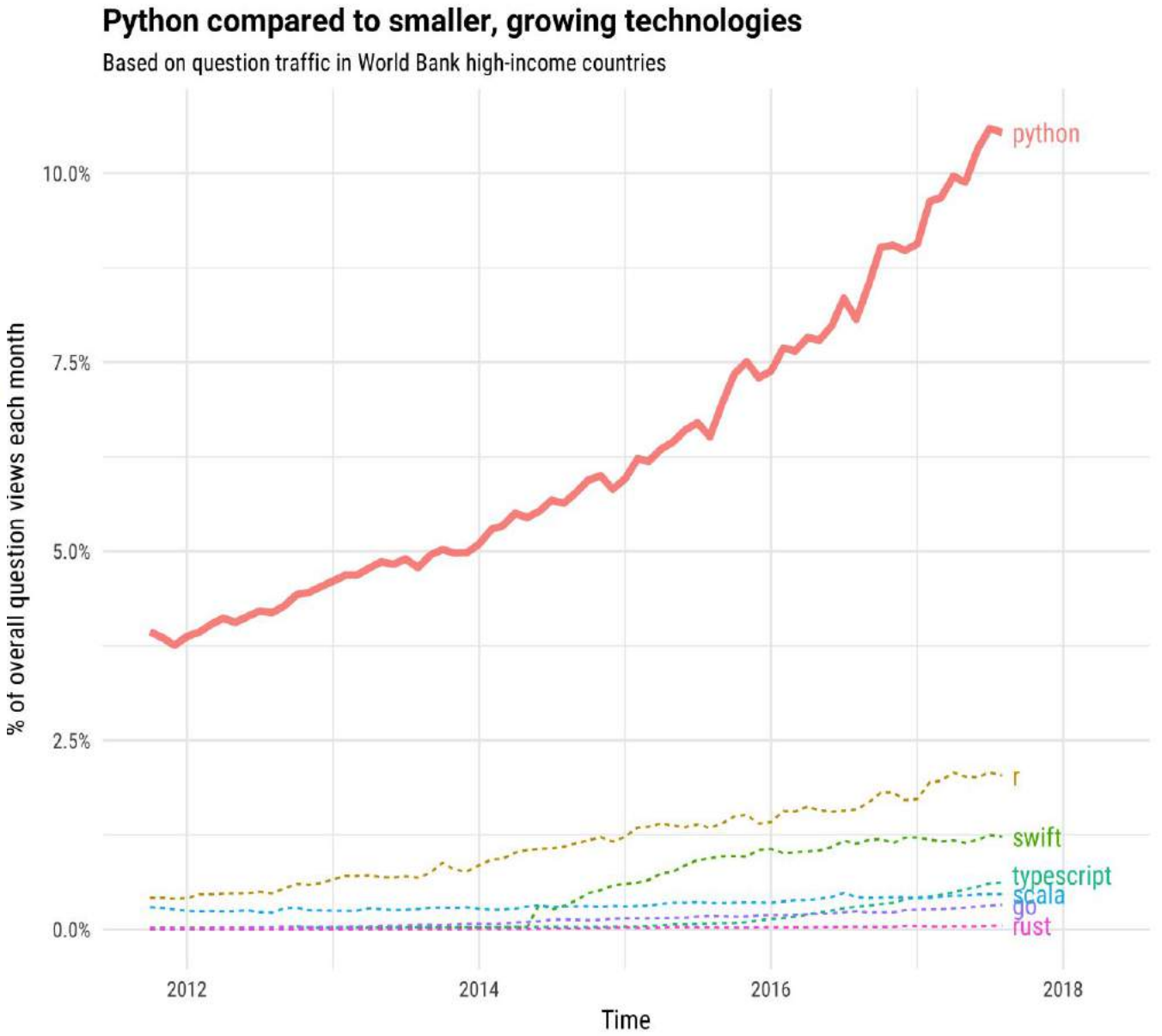
ERA 2

ERA 3



Python's Huge Demand and Popularity

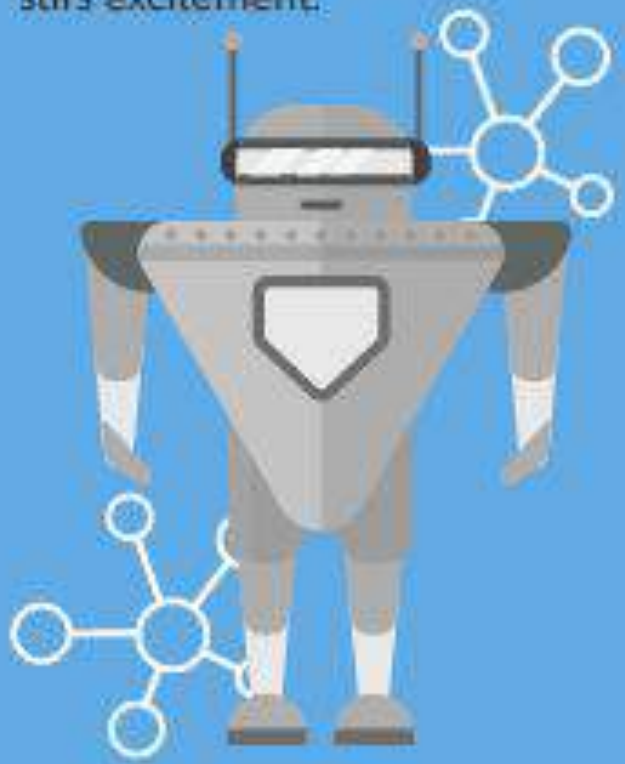




https://stackoverflow.blog/2017/09/06/incredible-growth-python/

ARTIFICIAL INTELLIGENCE

Early artificial intelligence stirs excitement.



MACHINE LEARNING

Machine learning begins to flourish.

DEEP LEARNING

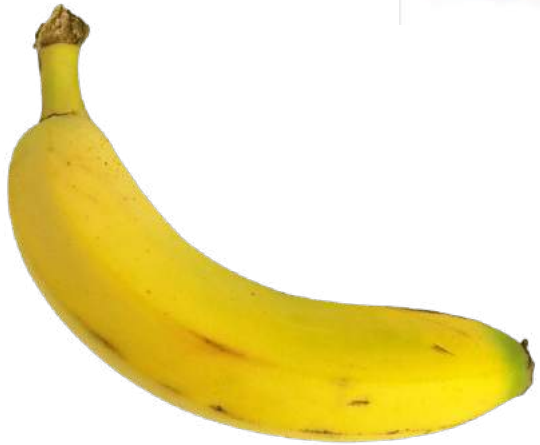
Deep learning breakthroughs drive AI boom.

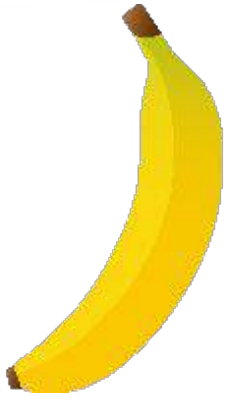
1950's 1960's 1970's 1980's 1990's 2000's 2010's

What is Machine Learning?

Baby Learning

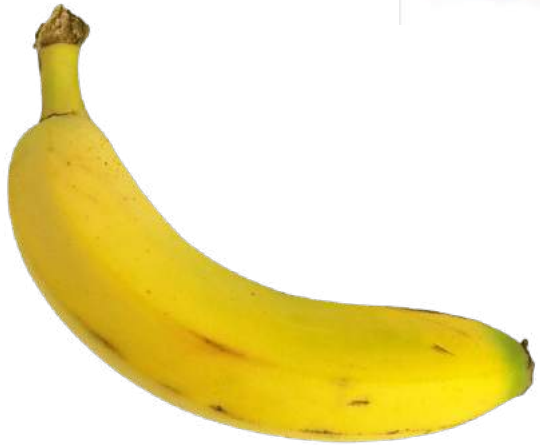
?

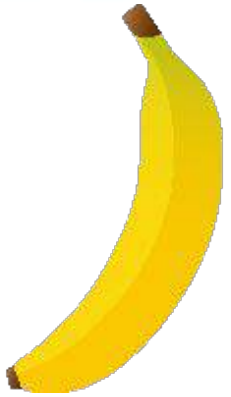




Machine Learning

?





Traditional Programing Vs Machine Learning

"In God we trust.
All others must bring data."

- Dr. W. Edwards Deming

Machine learning wonders at past

Google Search I'm Feeling Lucky

amazon.com

Hello, Gil Starkey. We have recommendations for you. (Not Gil?)

Gil's Amazon.com | Today's Deals | Gifts & Wish Lists | Gift Cards

Shop All Departments | Search All Departments

Your Amazon.com › Your Amazon Facebook Page

Facebook Profile Info

Edit your Facebook profile

Birthday:
June 10

Current City:
Chicago, Illinois

You don't have any information about favorite books, music, or movies on Facebook. Edit your Facebook profile and add your favorites to get personalized recommendations on this page.

Birthday and Gift Suggestions for Your Friends on Facebook

November 1
(in 3 weeks)
See gift suggestions

November 23
See gift suggestions

December 8
See gift suggestions

December 27
See gift suggestions

Janu
See

› See all friends on Facebook and their birthdays

Popular Among Your Friends on Facebook

The Godfather DVD Collection... DVD ~ Marlon Brando
(630) $41.49
2 friends like this:
› See more

Back in Black ~ AC/DC
(677) $9.99
2 friends like this:
› See more

Goldfinger DVD ~ Sean Connery
(239) $12.49
1 friend likes this:
› See more

The Beatles Stereo Box Set ~ The Beatles
(383) $188.00
2 friends like this:
› See more

As a Man Thinketh by James Allen
(261) $3.50
1 friend likes this:
› See more

Close

Other Movies You Might Enjoy

Amelie

Add

Not Interested

Y Tu Mama Tambien

Add

Not Interested

Eiken has been added to your Queue at position 2.

This movie is available now.

Move To Top Of My Queue

< Continue Browsing | Visit your Queue >

Guys and Balls

Add

Not Interested

Mostly Martha

Add

Not Interested

Only Human

Add

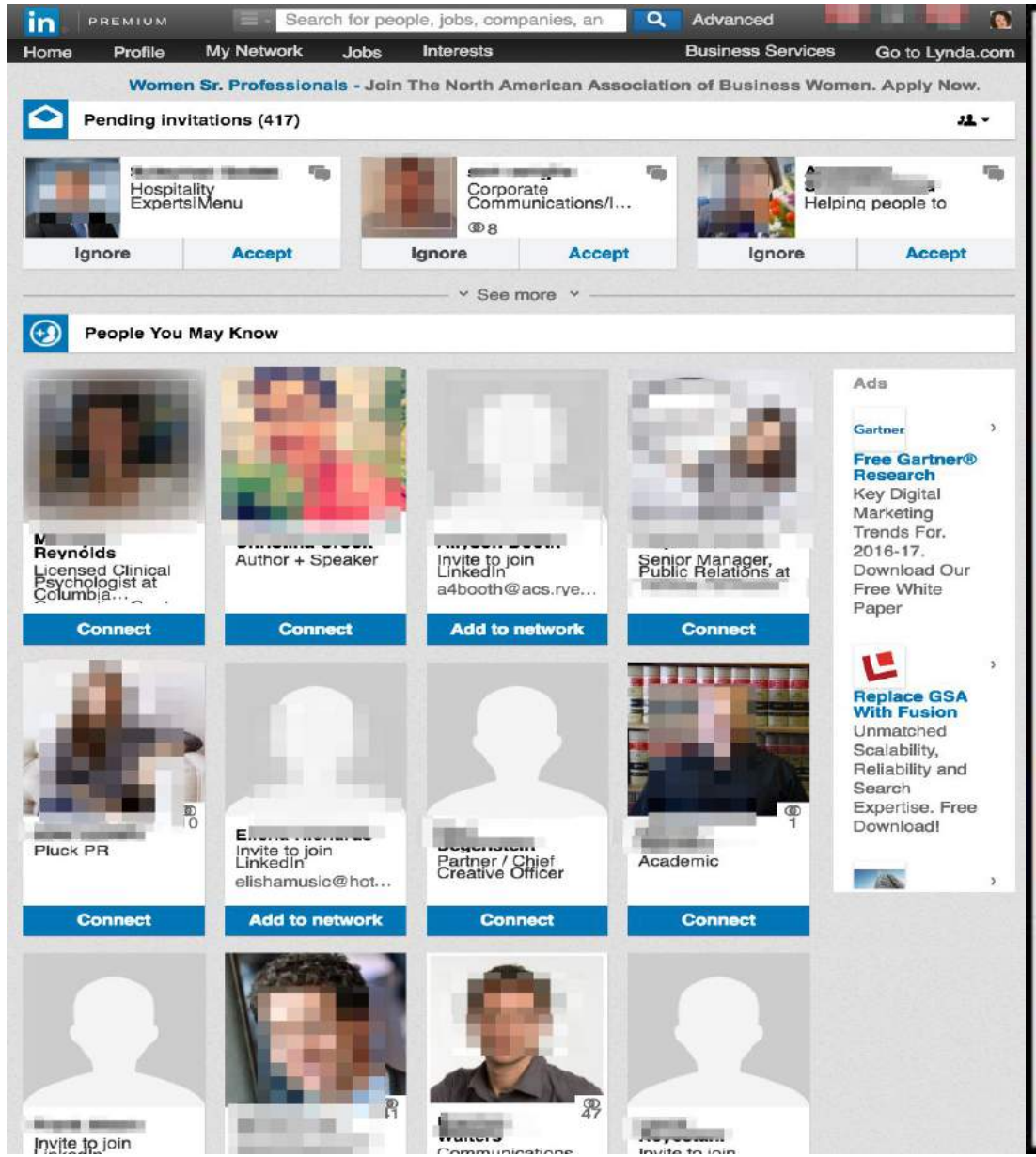
Not Interested

Russian Dolls

Add

Not Interested

Close


PREMIUM
Search for people, jobs, companies, an
Advanced
Home
Profile
My Network
Jobs
Interests
Business Services
Go to Lynda.com
Women Sr. Professionals - Join The North American Association of Business Women. Apply Now.
Pending invitations (417)
Hospitality Experts|Menu
Ignore
Accept
Corporate Communications/I...
8
Ignore
Accept
Helping people to
Ignore
Accept
See more
People You May Know
Reynolds
Licensed Clinical Psychologist at Columbia...
Connect
Author + Speaker
Connect
Invite to join LinkedIn
a4booth@acs.rye...
Add to network
Senior Manager, Public Relations at
Connect
Pluck PR
0
Connect
Invite to join LinkedIn
elishamusic@hot...
Add to network
Partner / Chief Creative Officer
Connect
Academic
1
Connect
Invite to join
47
Ads
Gartner
Free Gartner® Research
Key Digital Marketing Trends For. 2016-17. Download Our Free White Paper
Replace GSA With Fusion
Unmatched Scalability, Reliability and Search Expertise. Free Download!

People You May Know
See All
Denise Ruehrschneck Jacobson
Add as Friend
John Mullis
Add as Friend
Travis Johnson
Add as Friend
Invite Your Friends
Invite friends to join Facebook.

Google
self-driving car

Computers can listen and understand

https://www.youtube.com/watch?v=Nu-nlQqFCKg

Computers can see

ID 907963294696
ID 898973289478
ID 984093591409
[MATCH]
John Doe
AGE 35
HEIGHT 5'11"
Occupation Manager
Interests Technology, VR, Travel
Location London
ID 34593457834 HASHCODE 2AB4 CF23 EF98 DA57
CHECKSUM 893428657843578265785 DB GeneralPublic2A
MATCH 99%

16:37:38
11832
11866
11816
11811
11875
11869
11796
11840
11862
11876
11863
11808
11858
11845
11872
11865
11829
11786
11765
11750

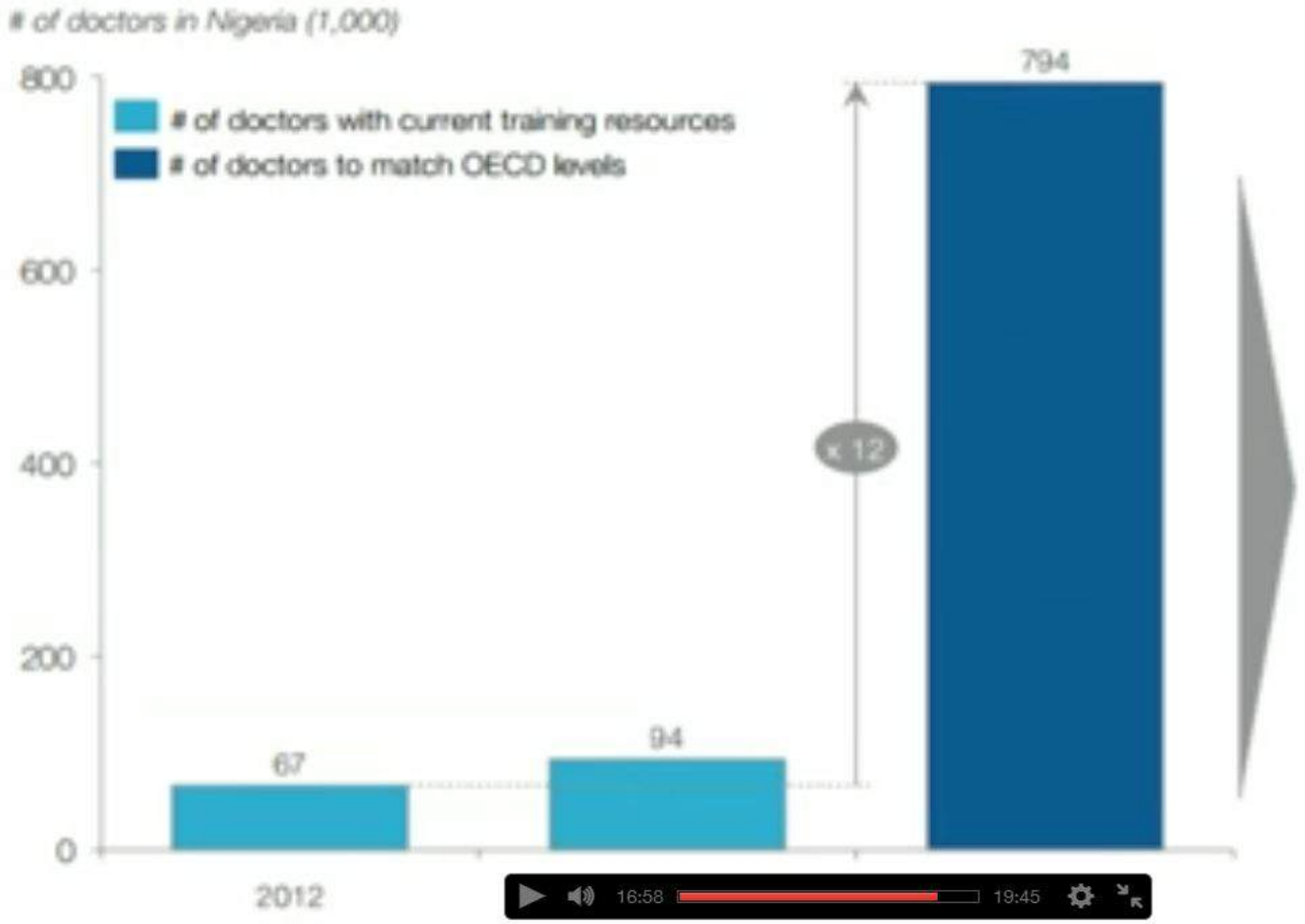
7655
peanut butter
picante sauce
picante sauce
peanut butter
Final inventory
and checkout

For Future

Exhibit 1: Imitating Traditional Development Paths Is Impossible for Emerging Economies
Nigeria would need over 700,000 additional doctors to reach OECD levels by 2030

WORLD ECONOMIC FORUM
COMMITTED TO IMPROVING THE STATE OF THE WORLD

Sources: World Bank, WHO, Africa Health Workforce Observatory, BMI, IFC, BCG



Cost:
US$ 51 billion, equalling 20% of GDP (2012) or 10 times public health expenditure (2012)

Duration:
300 years with existing training infrastructure

Reading & Writing
Speaking & Listening
Looking at things
Integrating knowledge
• Driving cars
• Preparing food
• Diagnosing disease
• Finding legal precedents
• …

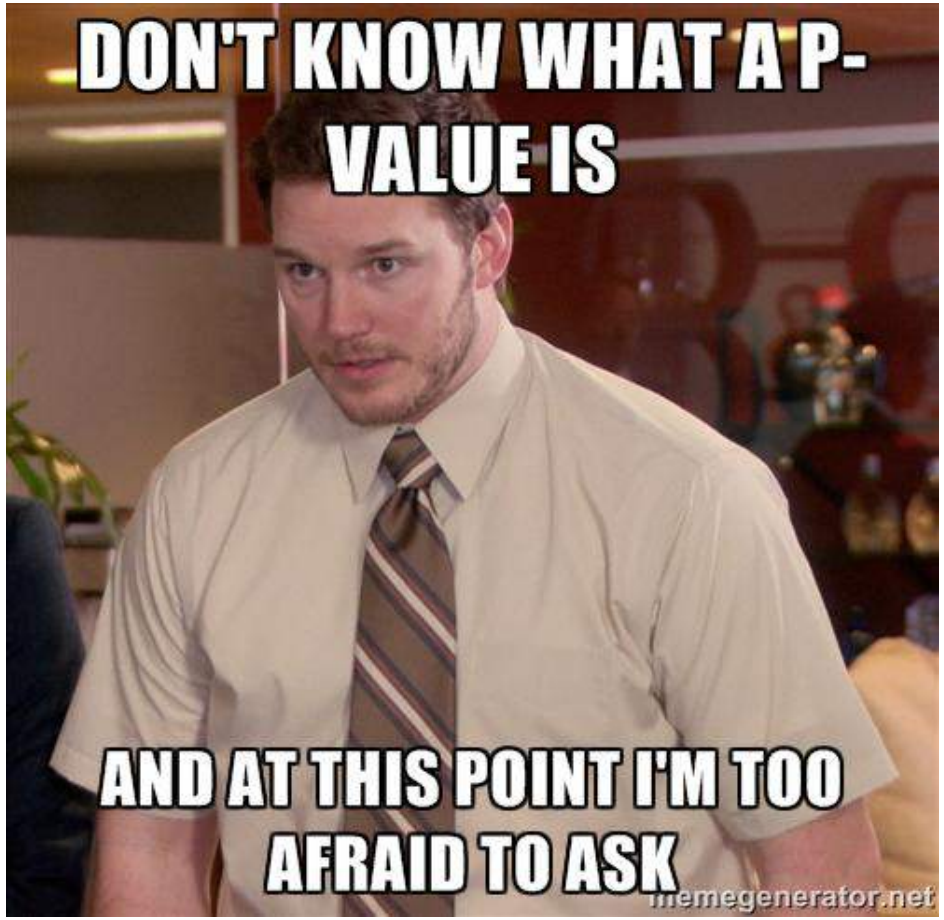
Future Jobs - Michio Kaku - Physicist

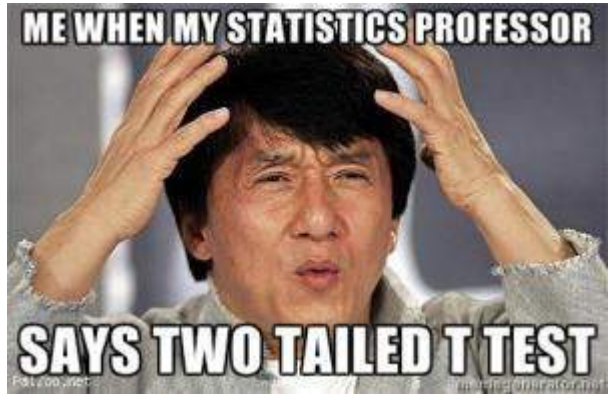
- Those of Artificial intelligence can’t do
- Pattern recognition and common sense are big problem of AI
- Repetitive jobs will be wiped off

- Jobs involved in intellectual capitalism will shine like
- Leadership
- Creativity
- Analysis
- Imagination
- Telling joke
- Writing a story, script

How to tame it?

Revise Statistics and Probability





Learn algorithm how it works rather concentrating on output

HOW IT WORKS

Learn and practice a programming language

Big data and Data science are happily married

Practice all algorithm with each use case

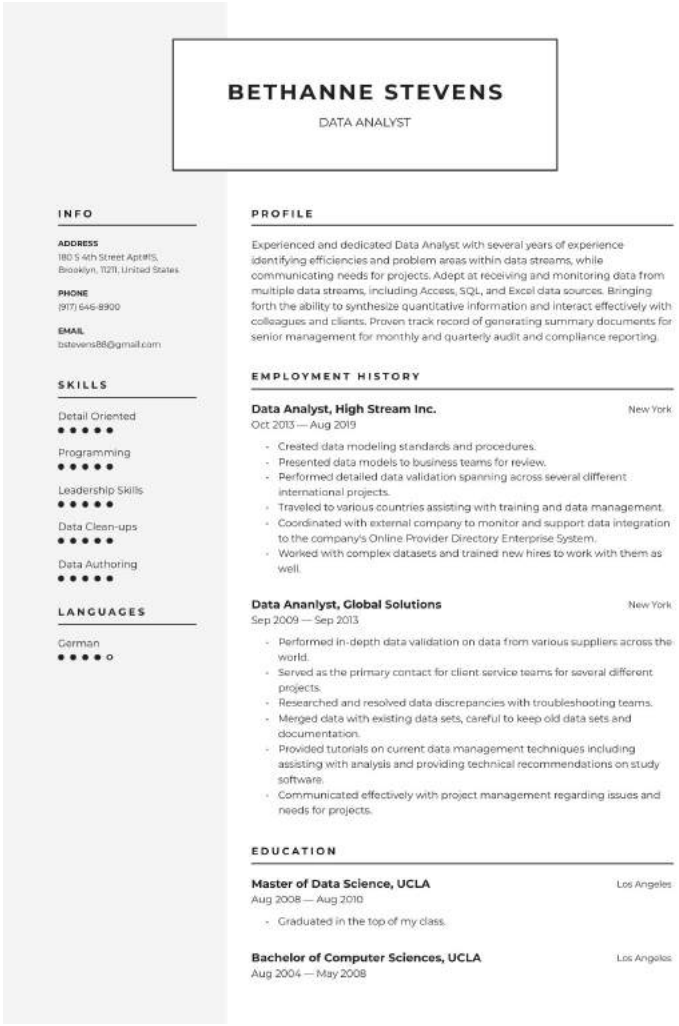
Make use of Kaggle and Analytics vidhya

Contribute your work to Opensource

Write a blog

blog
blogs
content
posts
online
MABs
blogging
Web
individual
many
single
bloggers
interactive
particular
subject
comments
readers
function
social
media
others
used
art
leave
post
web
1990s
also

Make your resume attractive



BETHANNE STEVENS

DATA ANALYST

INFO

ADDRESS
180 S 4th Street Apt#15,
Brooklyn, 11211, United States

PHONE
(917) 646-8900

EMAIL
bstevens88@gmail.com

SKILLS

Detail Oriented
Programming
Leadership Skills
Data Clean-ups
Data Authoring

LANGUAGES

German

PROFILE

Experienced and dedicated Data Analyst with several years of experience identifying efficiencies and problem areas within data streams, while communicating needs for projects. Adept at receiving and monitoring data from multiple data streams, including Access, SQL, and Excel data sources. Bringing forth the ability to synthesize quantitative information and interact effectively with colleagues and clients. Proven track record of generating summary documents for senior management for monthly and quarterly audit and compliance reporting.

EMPLOYMENT HISTORY

Data Analyst, High Stream Inc. New York
Oct 2013 — Aug 2019

- Created data modeling standards and procedures.
- Presented data models to business teams for review.
- Performed detailed data validation spanning across several different international projects.
- Traveled to various countries assisting with training and data management.
- Coordinated with external company to monitor and support data integration to the company's Online Provider Directory Enterprise System.
- Worked with complex datasets and trained new hires to work with them as well.

Data Ananlyst, Global Solutions New York
Sep 2009 — Sep 2013

- Performed in-depth data validation on data from various suppliers across the world.
- Served as the primary contact for client service teams for several different projects.
- Researched and resolved data discrepancies with troubleshooting teams.
- Merged data with existing data sets, careful to keep old data sets and documentation.
- Provided tutorials on current data management techniques including assisting with analysis and providing technical recommendations on study software.
- Communicated effectively with project management regarding issues and needs for projects.

EDUCATION

Master of Data Science, UCLA Los Angeles
Aug 2008 — Aug 2010

- Graduated in the top of my class.

Bachelor of Computer Sciences, UCLA Los Angeles
Aug 2004 — May 2008

HANNAH PANIZARES

Environmental
Science Researcher

SUMMARY

Supporting our ecosystem and reversing the effects of climate change are the reasons I get up in the morning. International cooperation is necessary, but I believe it begins with uncovering new findings and developing exciting technologies through dedication and innovation.

QUALIFICATIONS

Strong academic performance in environmental biology and natural sciences.

Experienced with professional lab settings, experimenting and reporting.

High grasp of biochemistry, ecosystem structures, and energy conservation methods.

CLUBS & ASSOCIATIONS

Dragon Rowing Club
Rower
2021-2022

Writing Help Center
Writing Guide
2022-2023

8001 Tilda Lane, Monseil, NY

1-905-509-5900

afournier@uwaterloo.com

EDUCATION

UNIVERSITY OF WATERLOO
2020-2024
Bachelor of Sciences, Environmental Sciences Specialist

CO-OP PLACEMENT EXPERIENCE

Lyfe Science Co-op
2022 Lab Technician

- Carried out everyday tasks as part of ongoing research study
- Reported findings, contributed hypothesis and helped co-author a professional findings report

Geology Point
2023 Field Technician

- Tested water samples around the world
- Drew conclusions based on highly-controlled experimentation
- Presented findings at a Water Stewardship Conference

SKILLS & EXPERTISE

Report Findings
Lab Research
Lab Testing
Presentation
Analysis
Test Proposals
Chemistry
Experimentation

YOUR NAME

TITLE

Lorem ipsum dolor sit amet, consectetur adipiscing elit, sed do eiusmod tempor incididunt ut labore et dolore magna aliqua.

012 345 678 901

contact@email.xx

www.yoursite.xx

SKILLS

SKILL ONE
SKILL TWO
SKILL THREE
SKILL FOUR

LANGUAGES

ENGLISH
GERMAN
SPANISH
FRENCH

PERSONAL PROFILE

WORK EXPERIENCE

LOREM IPSUM DOLOR
1991 - 2004

DOLOR SIT AMET
2004 - 2017

EDUCATION

HIGH SCHOOL
1983 - 1987; LOREM IPSUM DOLOR

UNIVERSITY
1987 - 1991; LOREM IPSUM DOLOR

HOBBIES

MUSIC, FISHING, SKIING, DIVING, READING BOOKS, MOUNTAINEERING

References

- https://www.ted.com/playlists/310/talks_on_artificial_intelligen
- http://www.kdnuggets.com/
- https://www.youtube.com
- https://www.cubs100.org/GetImage.aspx?IDMF=ea11fbcd-1eb1-4829-9276-41f91b5bd75a&w=900&h=600&src=mc
- https://securityledger.com/wp-content/uploads/2016/05/IBM-Watson.jpg

Thank You