

INTRODUCTION TO AI & ML



THANK YOU

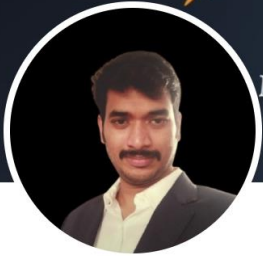
WELCOME

AUDIENCE INTRO

- Your Name
- Your Role
- Experience & Domain
- Company
- Expectation from this Course
- Why you have joined Inceptez?
- Who has referred?



Accelerate an idea to a S.T.A.R (Scalable, Trustable, Adaptable, Reliable)
Machine Learning product for Large Enterprises



Mission to transform 1 million Mid-Career IT Professionals stuck in the career ladder, up-skill to Data Science and Machine Learning

Balaji Janarthanam

Technical Lead - Machine Learning Engineer | Ex-Accenture |
Innovator - 7 Patents | Mentor

Talks about #mlops, #azureai, #gcpcloud, #datascience, and
#machinelearning



Viasat Inc.



College of Engineering,
Guindy

<https://www.linkedin.com/in/balaji-janarthanam/>

Training Credentials:

- Google Certified TensorFlow Developer
- Microsoft Certified Azure Data Scientist
- **500+ hrs** of AI/ML Training delivered to IT/Non-IT Professionals, PhDs, Professors, Students



Chockalingam Shanmugam · 1st

Supply Chain Manager / Specialist - Asia Pacific at Vestas

December 21, 2019, Chockalingam was senior to Balaji but didn't manage Balaji directly

👁 All LinkedIn members



Balaji was my Data Science instructor in a private institution. He has sound knowledge and extensive hands-on experience in this field. He has a unique ability to connect the students with a simplified example from day today life. He took an extra step to make the learning experience more enjoyable. His efforts towards making us apply the techniques learnt, in our own filed is much appreciated. I wish Balaji a great success in his Data Science journey!



Chandramouli Ramasamy · 1st

Assistant Manager (Scrum Master and Agile Coach) at Tata Consultancy Services

December 23, 2019, Chandramouli was senior to Balaji but didn't manage Balaji directly

👁 All LinkedIn members



"We search a lot of courses online to learn data science and machine learning. Trust me the subject and its application is massive. Its not a joke to learn such a subject in a short period of time. But Mr.Balaji (Trainer) makes life easy for you in this journey of getting acquainted with data science and ML. His experience is vast and the way he teaches is very easy to understand and also he relate all the algorithm and problem with real time use case and also he co-relate those concept with the day to today life example. Though i am not from non IT background, i am able to create models and understood the Data science and ML in short term and applying it. I strongly recommend Mr.Balaji to everyone who are all interested in starting their journey towards DS & ML."



ANNIE JAMES · 1st

Analyst at TAMILNADU E-GOVERNANCE AGENCY

December 22, 2019, Balaji was senior to ANNIE but didn't manage ANNIE directly

👁 All LinkedIn members



I had an opportunity to study Data Science under Balaji's guidance. Balaji is a very creative thinker, and is passionate about his responsibilities. I got amazed by his strong understanding on machine learning techniques. He makes us work hard on assignments and lectures the class with live examples. Data science is huge subject which can be lectured by anyone but none is there as Balaji to make the class entertaining and enthusiastic in studying the vague algorithms and difficult problems. I had a transission from my current responsibilities to Data science team. I strongly recommend Mr.Balaji as a best mentor to whomsoever wants to join Data Science and crack any complex real life problems .



Dr. Rajesh Kumar V R S · 1st

Director at Eishaa Communication Systems Pvt. Ltd.(Hiring C, C++, Java, Telecom, Data Networking, VLSI, Embedded, QT,QML, Cloud Professionals)

March 8, 2020, Dr. Rajesh Kumar was senior to Balaji but didn't manage Balaji directly

👁 All LinkedIn members



Balaji is a passionate data scientist who also loves teaching data science. I recommend those who are really interested to learn data science must listen his lectures which are highly motivating and thought provoking.



Balaji Venkateswaran · 1st

Data Scientist@FLEX | Doctorate in Data Science| Finance, Marketing, HR & Supply Chain | Mentor |

Author | Trainer | AlgoTrader | Growth Hacker

July 5, 2021, Balaji was senior to Balaji but didn't manage Balaji directly

👁 All LinkedIn members



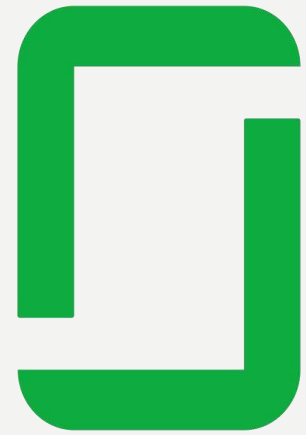
I have known and worked in same project as Balaji within Accenture. He has been into data science for the past few years and has shaped really well. He is my go-to person for any data science problem and support. He is a keen innovator trying to build new products and concepts with Data Science. He started his career in telecom and has applied data science successfully to telecom domain. His passion for machine learning and his strong attitude towards learning new algorithms are invaluable to ensuring the success of any project.

EXPECTATIONS

- Dedication
- Practice Daily
- Don't miss any class
- Collaborate with participants



IS DATA SCIENCE A RISING
CAREER 2022?



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)

Best Jobs



2017



United States



Share



	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)

Best Jobs



2019



United States



Share



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

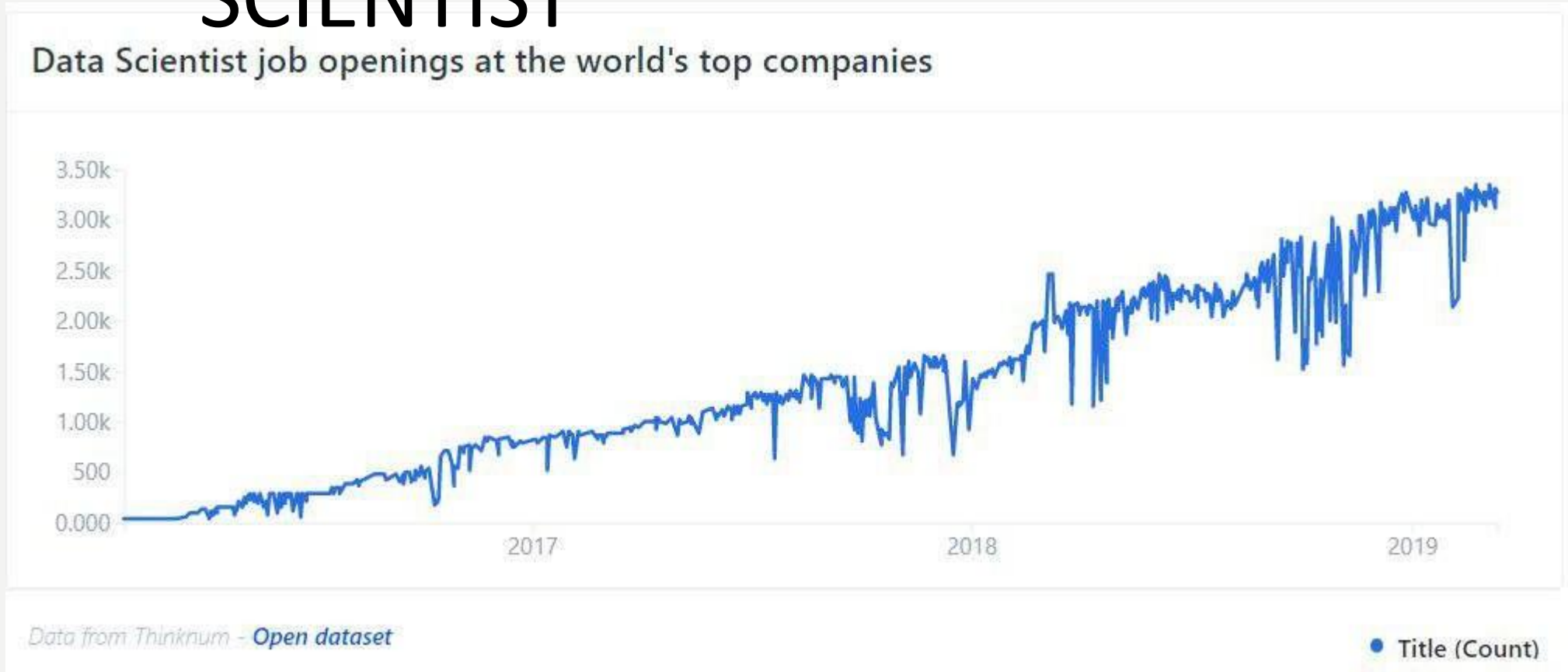
4.2/5

7,395

[View Jobs](#)

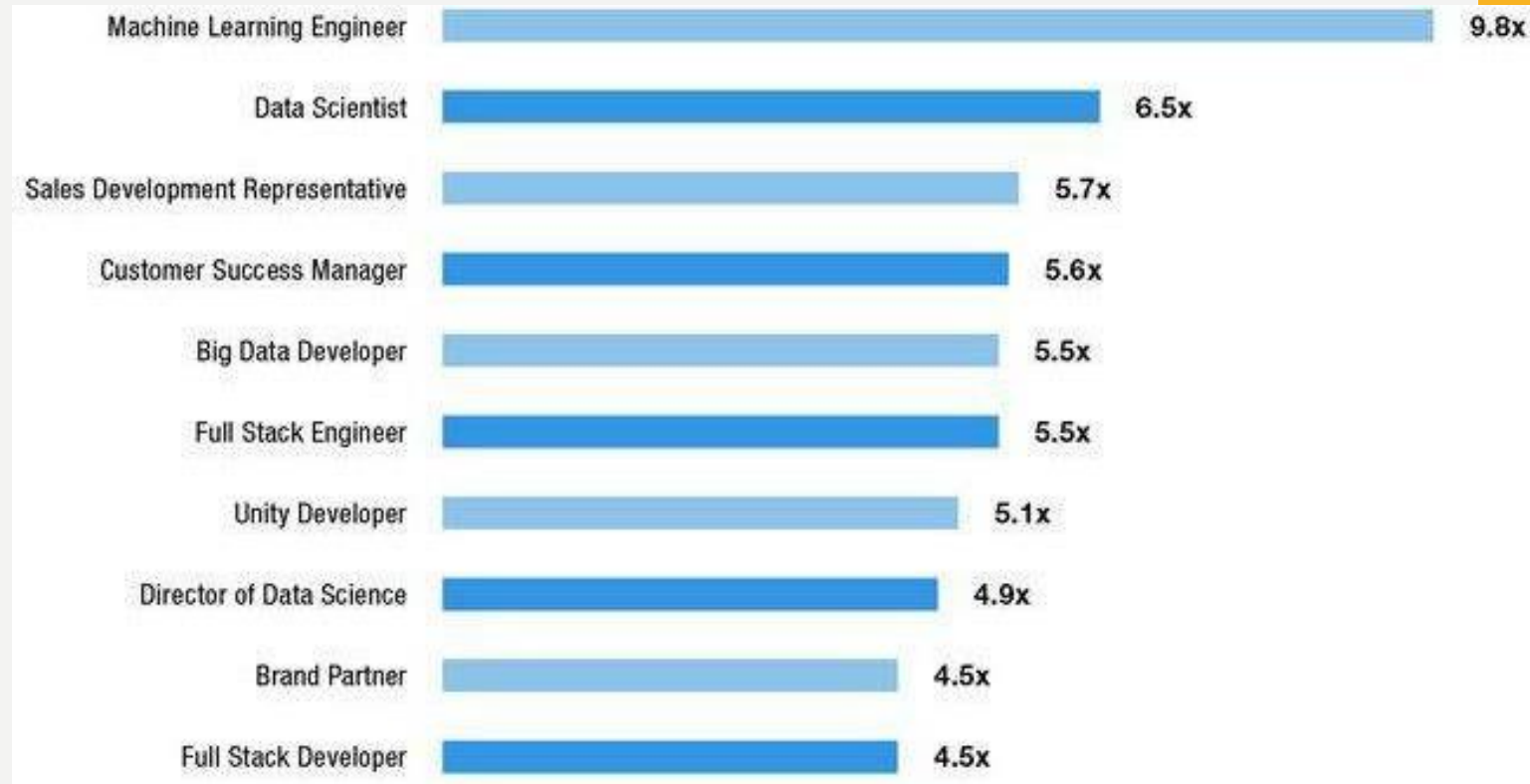
https://www.glassdoor.com/List/Best-Jobs-in-America-LST_KQ0,20.htm

HIGH DEMAND OF DATA SCIENTIST



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>

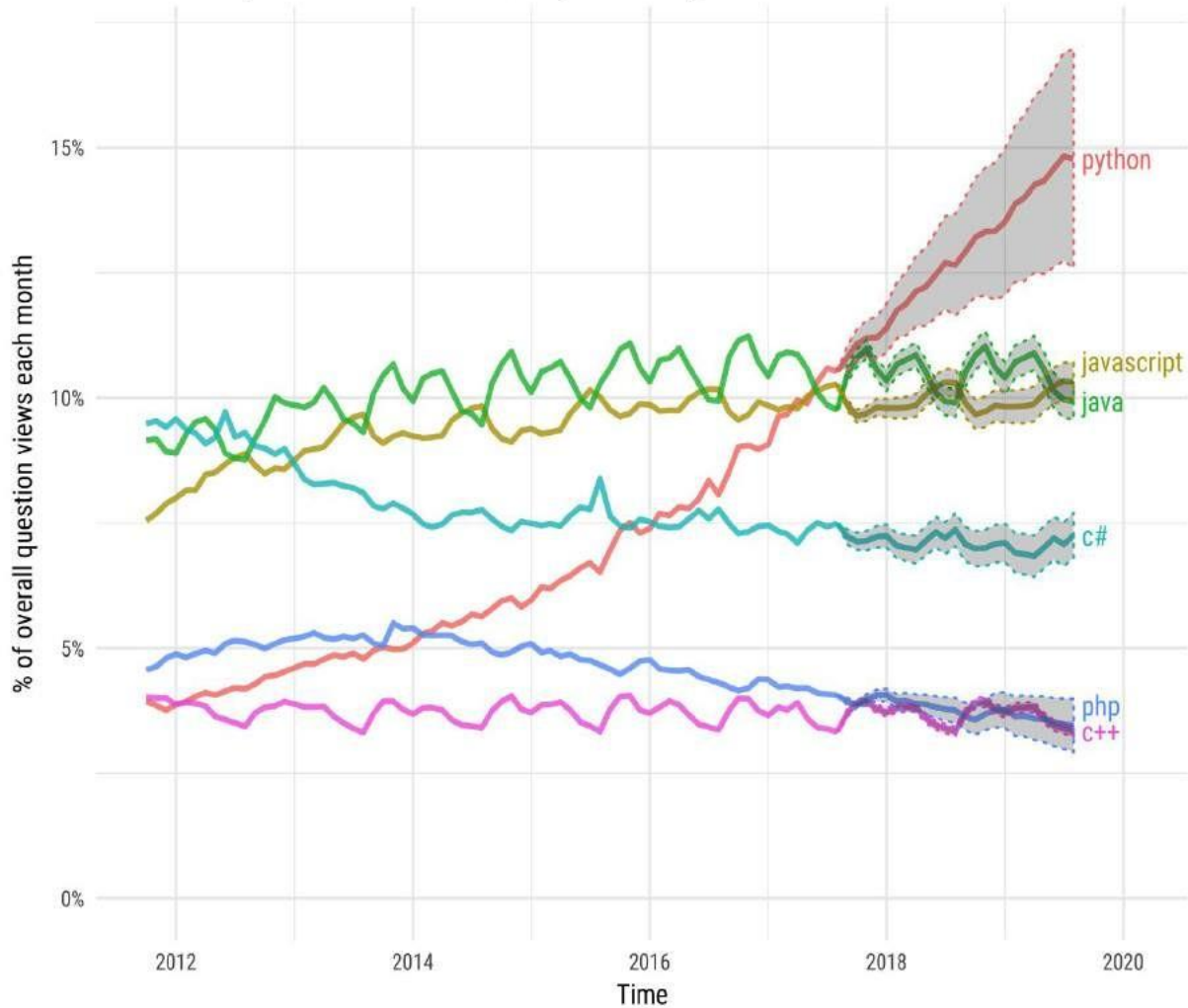
<https://towardsdatascience.com/is-data-science-still-a-rising-career-in-2021-722281f7074c#:~:text=Per%20LinkedIn%2C%20there%20has%20been,in%202020%20at%20around%206500.>

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

PYTHON'S HUGE DEMAND AND POPULARITY

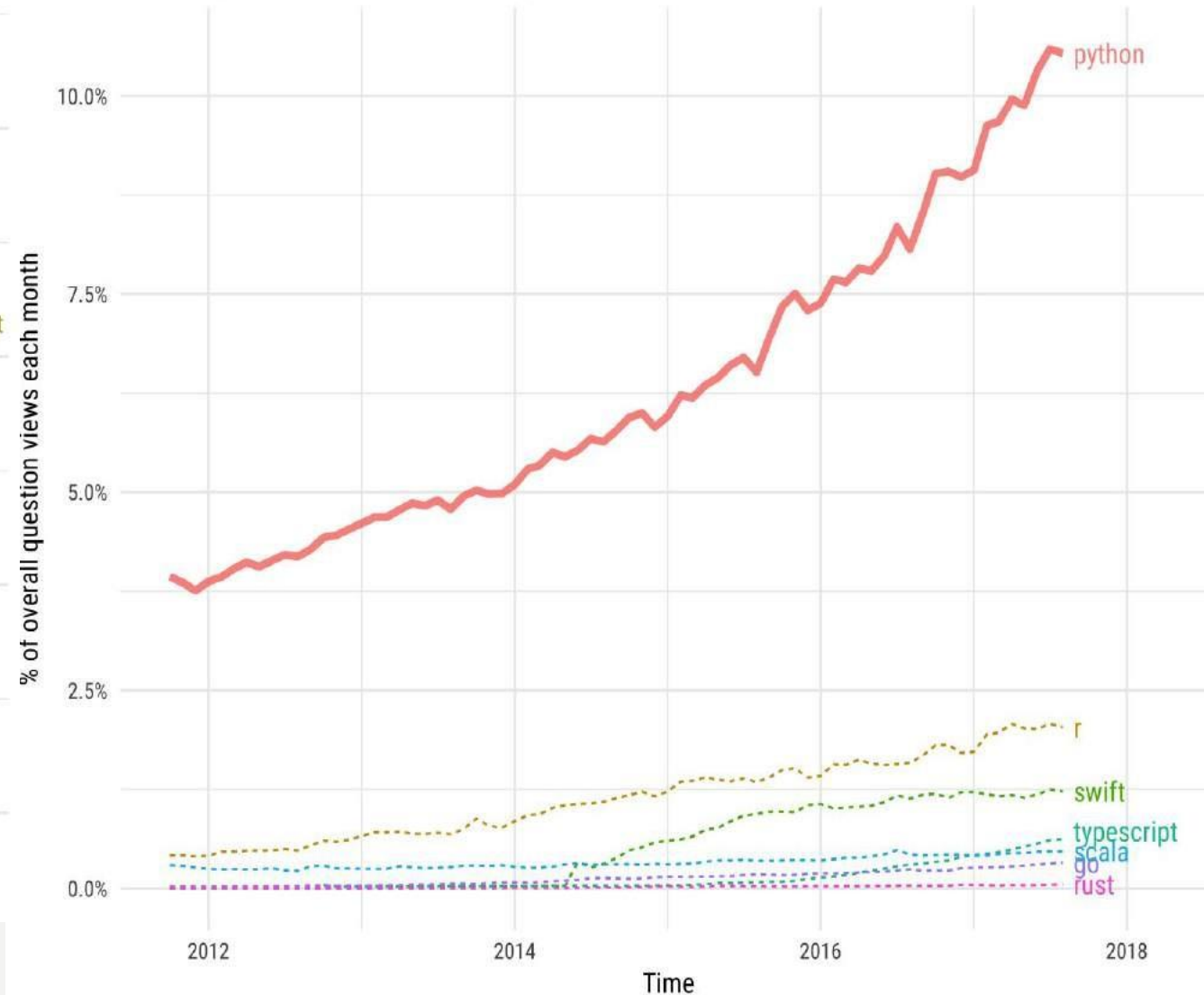
Projections of future traffic for major programming languages

Future traffic is predicted with an STL model, along with an 80% prediction interval.

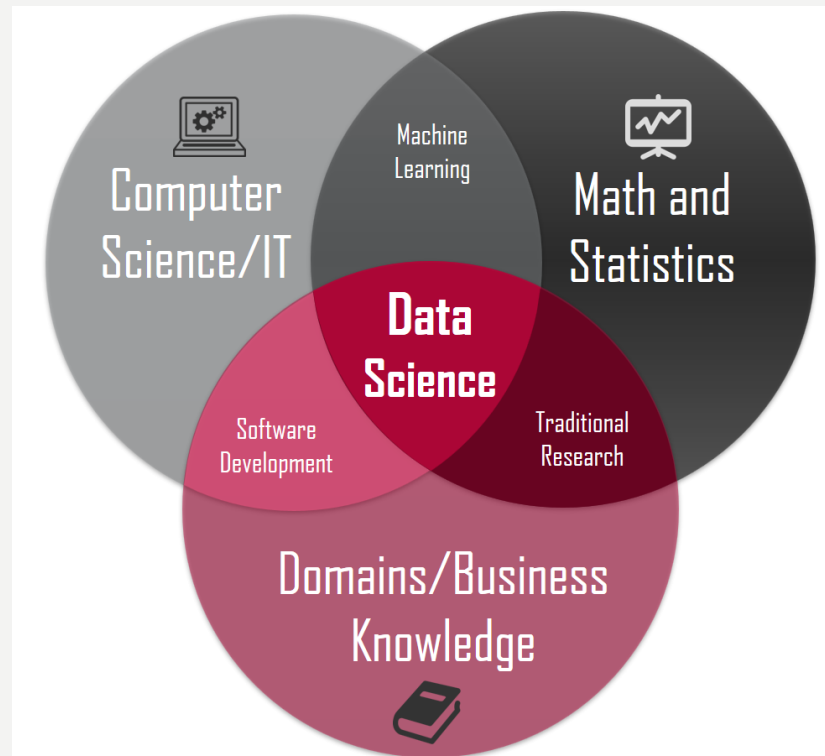


Python compared to smaller, growing technologies

Based on question traffic in World Bank high-income countries



WHAT IS DATASCIENCE





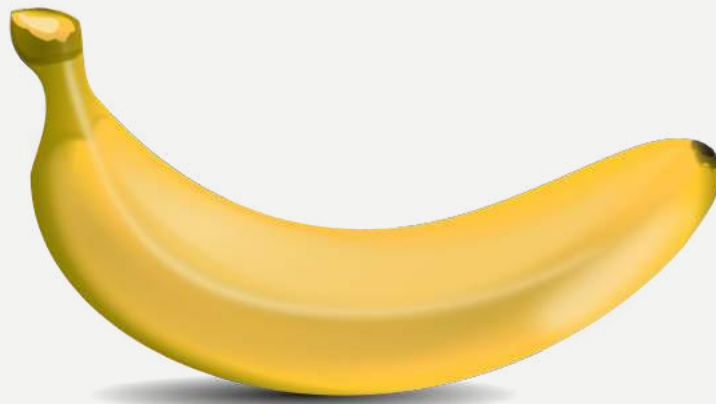
WHAT IS MACHINE LEARNING?



BABY LEARNING



?





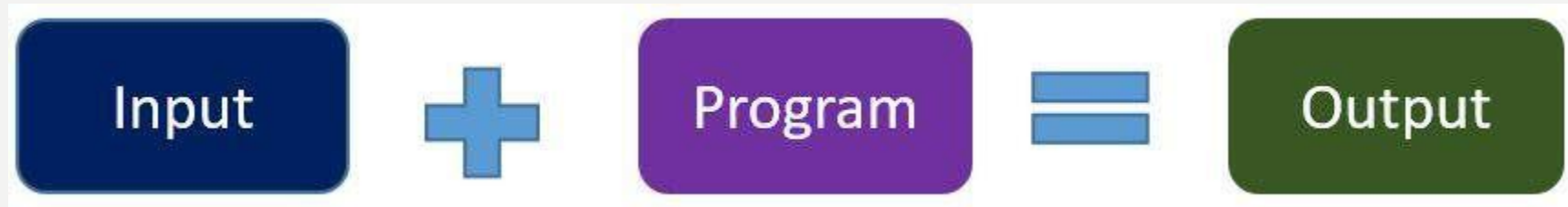
MACHINE LEARNING



?



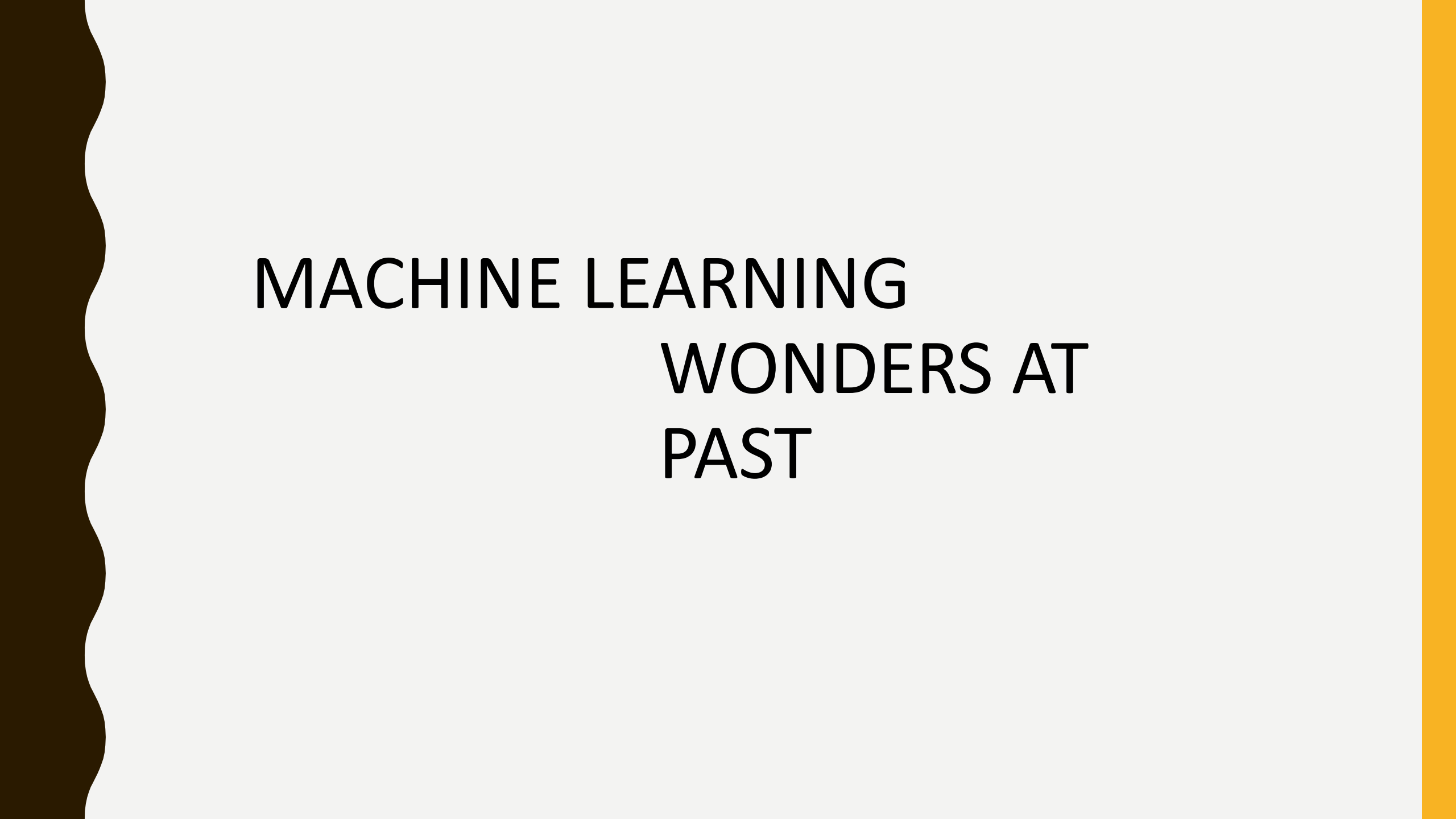
TRADITIONAL PROGRAMING VS MACHINE LEARNING





**“In God we trust.
All others must bring data.”**

- Dr. W. Edwards Deming



MACHINE LEARNING WONDERS AT PAST

Google



Google Search

I'm Feeling Lucky

Facebook Profile Info

[Edit your Facebook profile](#)Birthday:
June 10Current 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

12 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:

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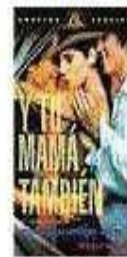
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[Y Tu Mama Tambien](#)

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[Guys and Balls](#)

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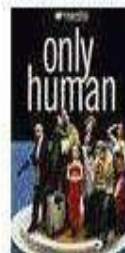
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People You May Know

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Dianne Green

Author + Speaker

[Connect](#)

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a4booth@acs.rye...

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Senior Manager, Public Relations at

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Pluck PR

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Elisha Williams

Invite to join LinkedIn

elishamusic@hotmail.com

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Deborah Partner / Chief Creative Officer

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Add as Friend

Invite Your Friends

Invite friends to join Facebook.





COMPUTERS CAN LISTEN AND UNDERSTAND





COMPUTERS CAN
SEE





FOR
FUTURE

Exhibit 1: Imitating Traditional Development Paths Is Impossible for Emerging Economies

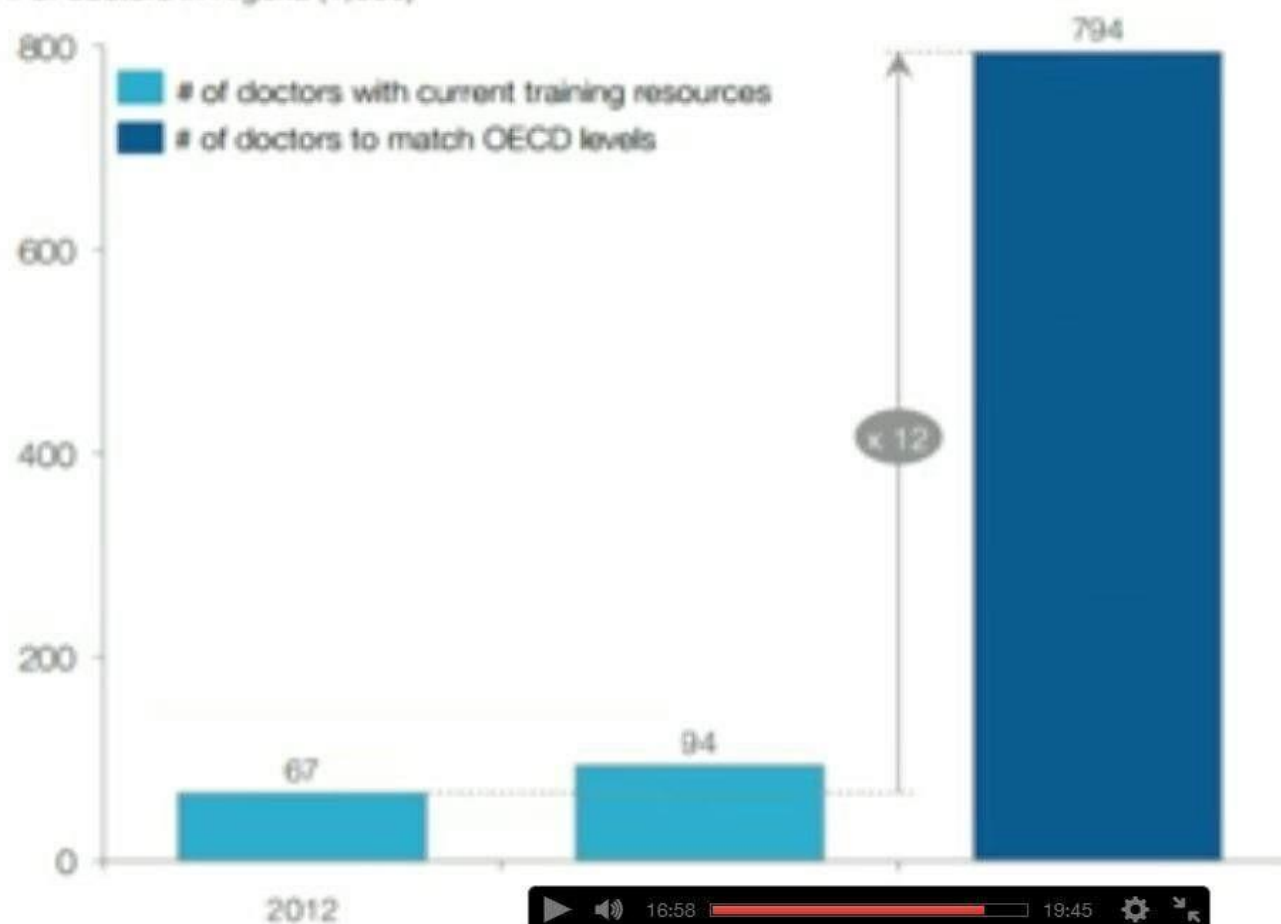
Nigeria would need over 700,000 additional doctors to reach OECD levels by 2030



COMMITTED TO
IMPROVING THE STATE
OF THE WORLD

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

of doctors in Nigeria (1,000)



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

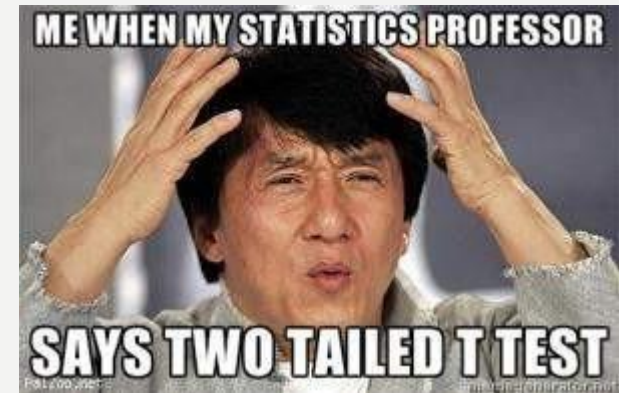
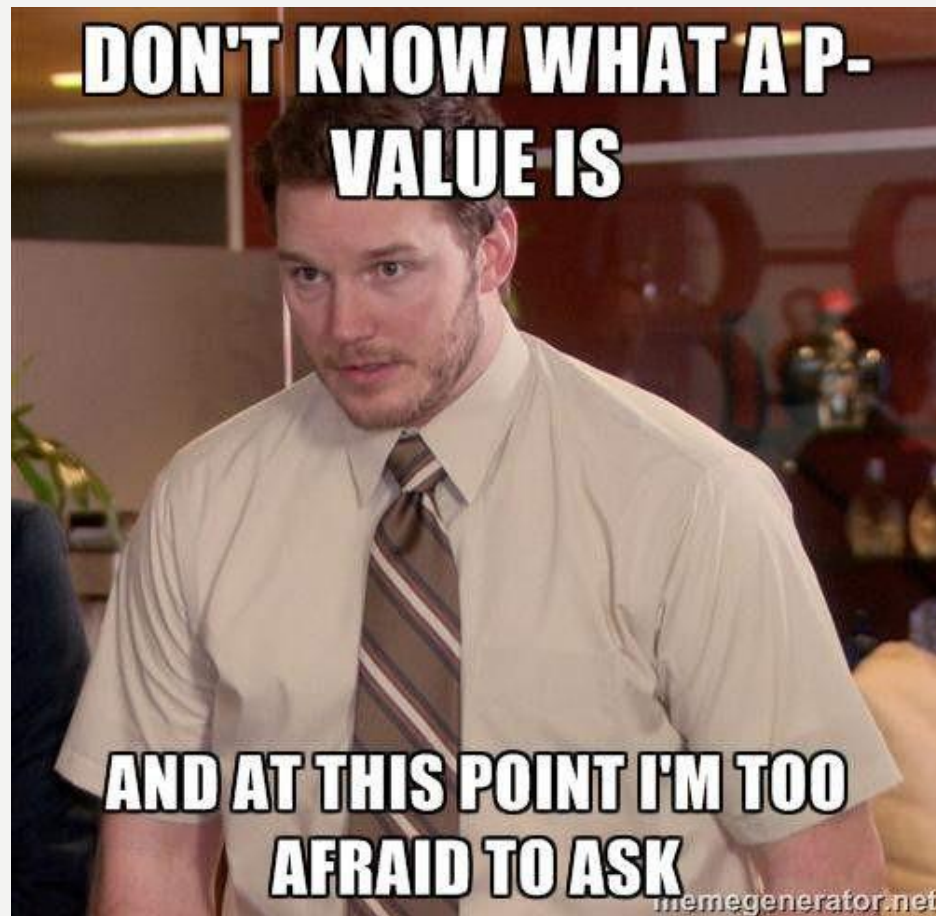
- Jobs involved in intellectual capitalism will shine like
 - Leadership
 - Creativity
 - Analysis
 - Imagination
 - Telling joke
 - Writing a story, script





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



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. Adapt 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 Analyst, 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



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

PERSONAL PROFILE

Lorem ipsum dolor sit amet, consectetur adipiscing elit, sed do eiusmod tempor incididunt ut labore et dolore magna aliqua. Ut enim ad minim veniam, quis nostrud exercitation ullamco laboris nisi ut aliquip ex ea commodo consequat. Duis aute irure dolor in reprehenderit in voluptate velit esse cillum dolore eu fugiat nulla pariatur.

WORK EXPERIENCE

LOREM IPSUM DOLOR
1991 - 2004

Lorem ipsum dolor sit amet, consectetur adipiscing elit, sed do eiusmod tempor incididunt ut labore et dolore magna aliqua. Ut enim ad minim veniam, quis nostrud exercitation ullamco laboris nisi ut aliquip ex ea commodo consequat.

DOLOR SIT AMET
2004 - 2017

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

EDUCATION

HIGH SCHOOL
1983 - 1987: **LOREM IPSUM DOLOR**

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UNIVERSITY
1987 - 1991: **LOREM IPSUM DOLOR**

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HOBBIES

MUSIC, FISHING, SKING, COVING, READING BOOKS, MOUNTAINEERING

LANGUAGES

ENGLISH
GERMAN
SPANISH
FRENCH

REFERENC ES

- [https://www.ted.com/playlists/310/talks on artificial intelligen](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