

# Fundamentals Data Science with Python



**Kholed Langsari**

AI/ML Engineer, Software Architect,  
Instructor at Fatoni University

langsari@ftu.ac.th

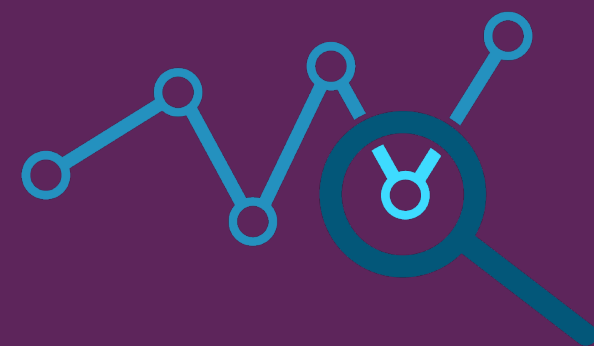
# Data Science

# Fundamentals Data Science with Python

The goal of the program is for you to learn the skills you need to perform well as a data scientist. Learn fundamental to build statistic and machine learning models, run data pipelines, design experiments and recommendation engines, communicate effectively, and to deploy data applications. Graduates of this program will be prepared for data scientist positions.

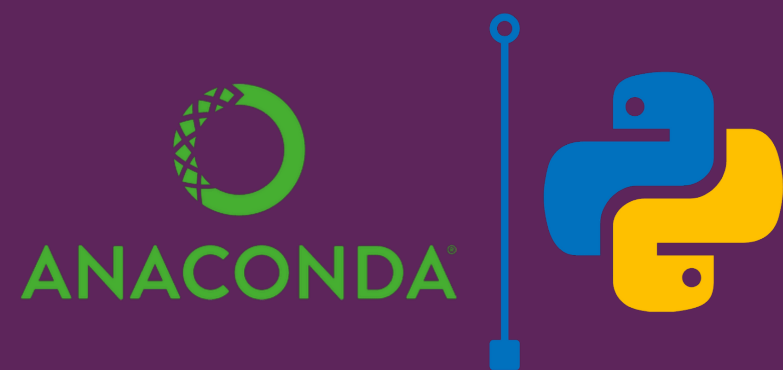
# Defining Data Science

Defining what, why and how to do data science



# Setup works environment

Checking your work environment, install and config tool of use



# Python for Data Science

Essential Python language basic



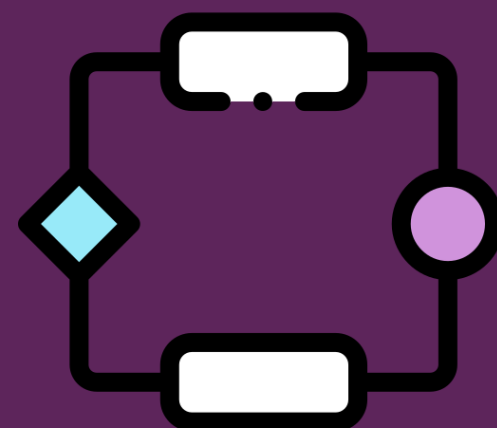
# Mathematic

Linear algebra, statistic, and probability



# Data Science Life Cycle

CRISP-DM, KDD, TSDP





# Data Design

Kinds of data, Tabular data, Multidimensional arrays, Multiple tables, Time series.



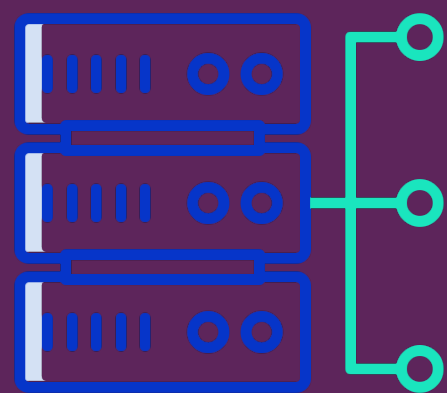
# Exploratory Data Analysis

How to explore and describe data using EDA



# Data Cleaning

How to make data ready for execution, handling missing data, data transformation



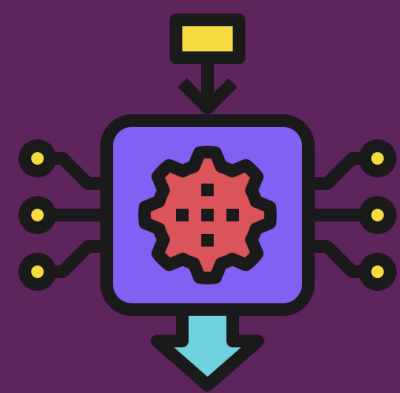
# Data Visualization

Making informative visualizations



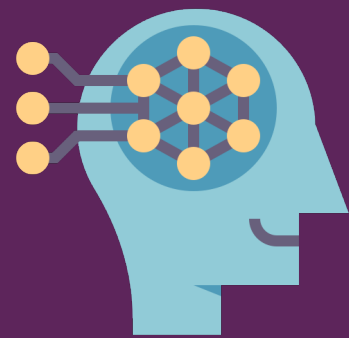
# Inference

Involves forming and testing hypotheses about our data and the processes that generate it



# Machine Learning

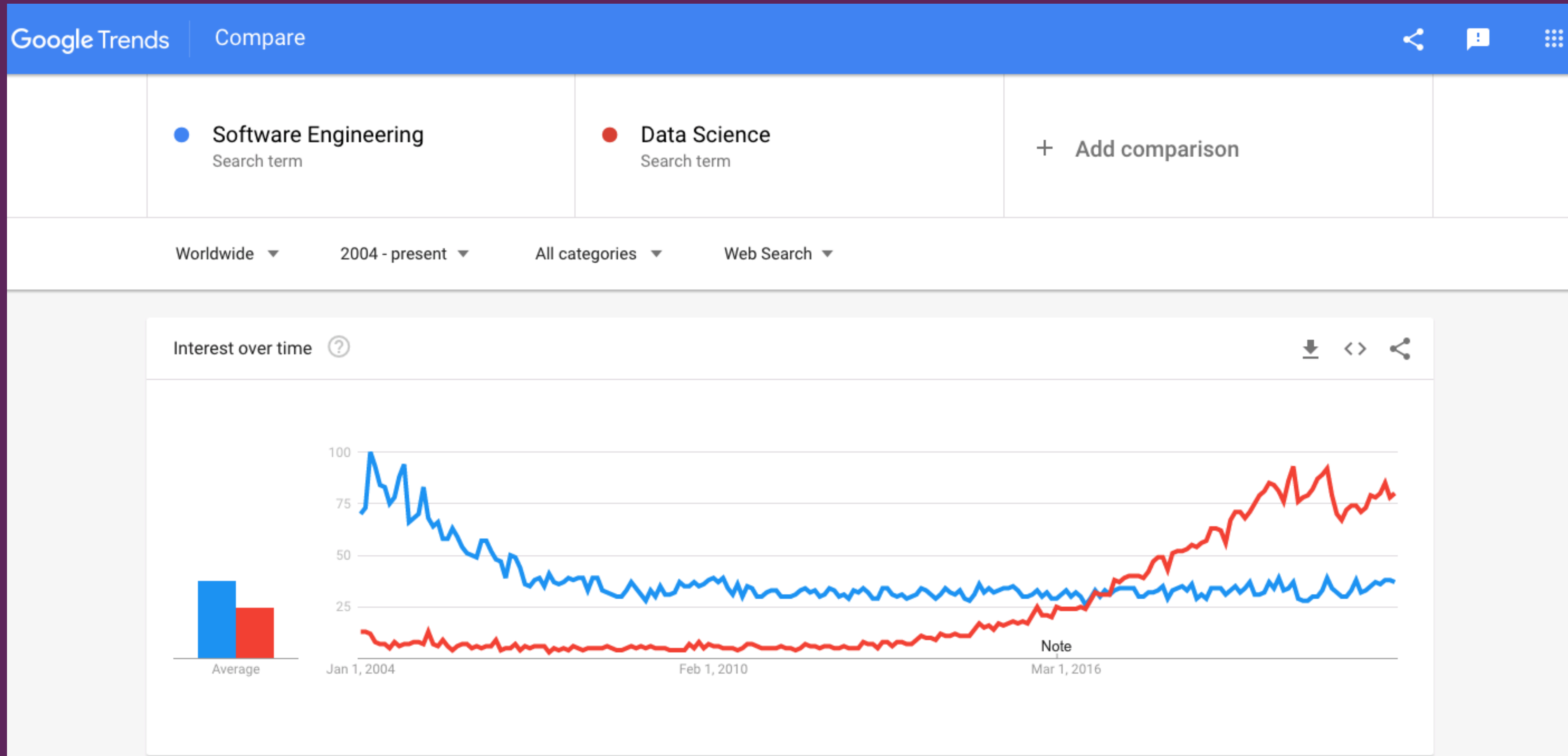
Use machine learning to creating and using models that are learned from data



# Data Science Trends

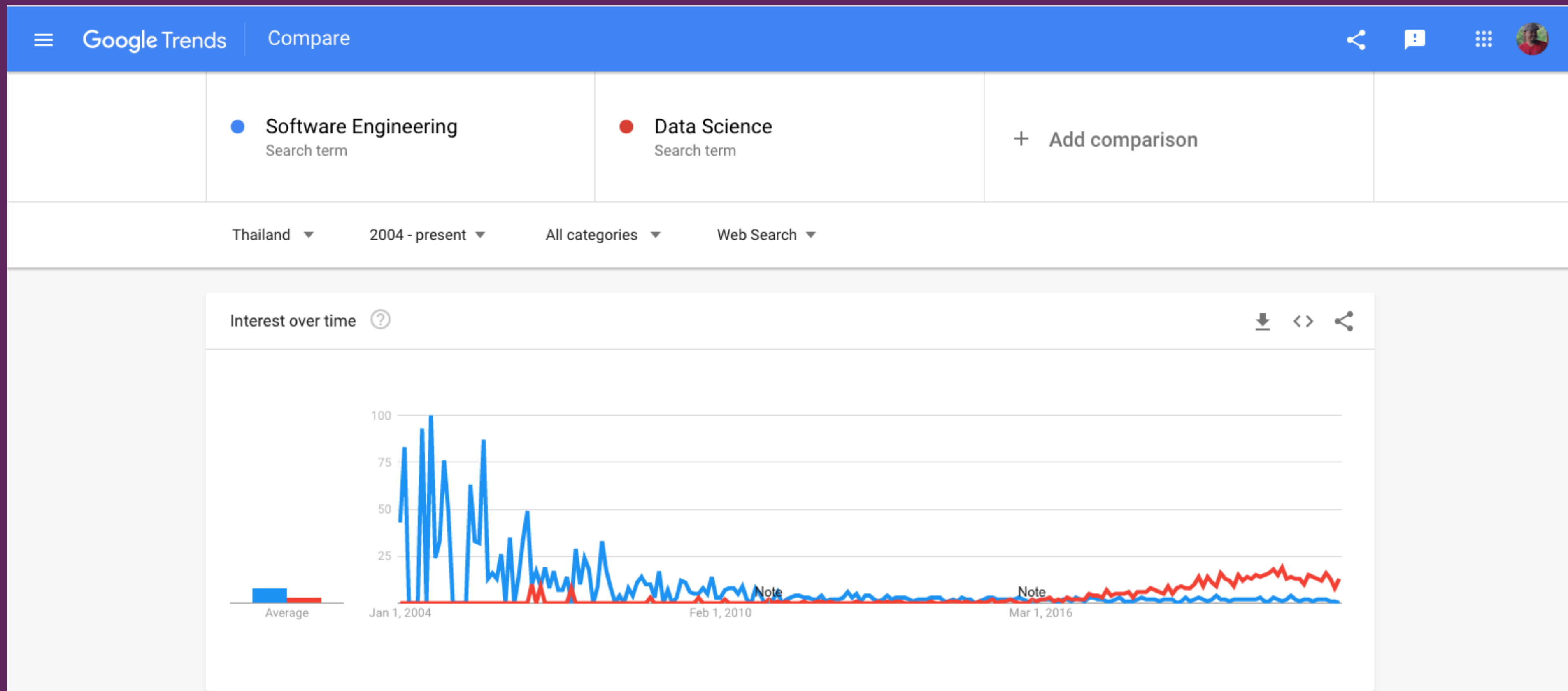
**“the volume of global data is ballooning rapidly.”**





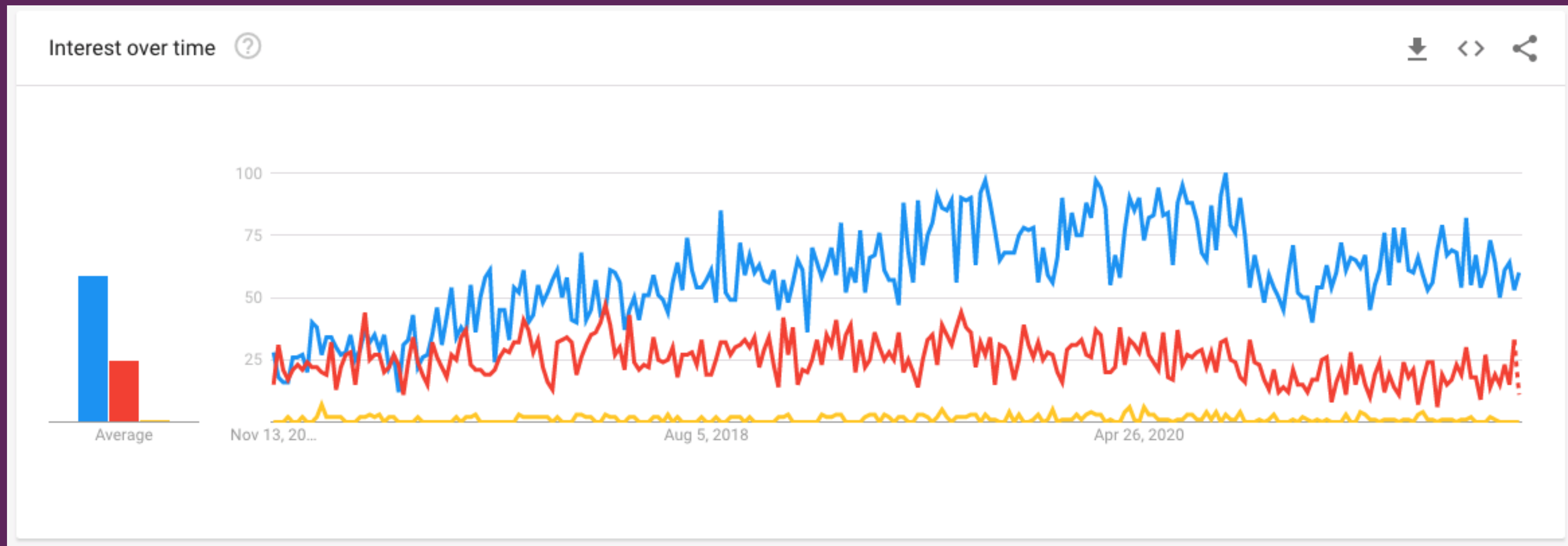
# Software Engineering vs Data Science

Google Trends 2004-2021 (retrieved 7 Nov 2021)



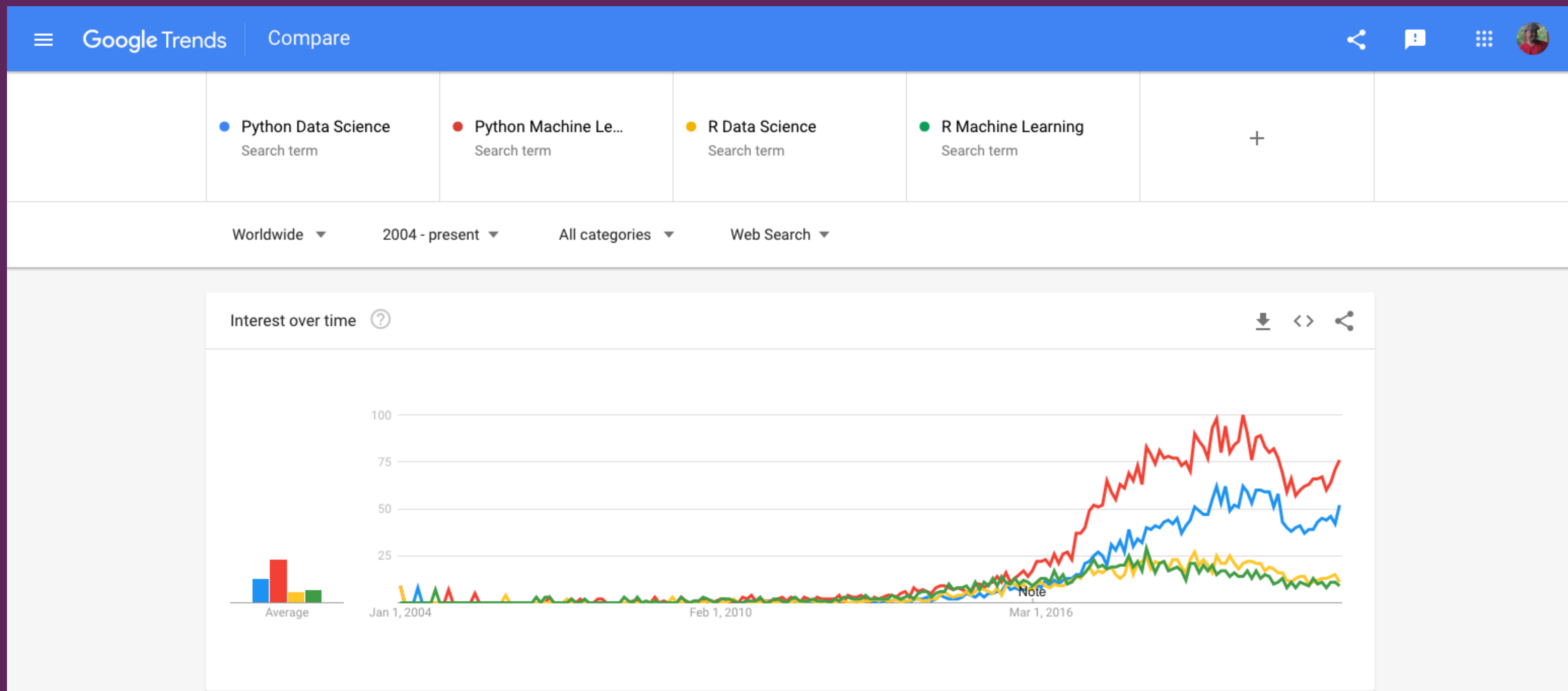
# Software Engineering vs Data Science

Thailand Google Trends 2004-2021 (retrieved 7 Nov 2021)



# Python vs R vs Matlab for Data Science

Google Trends 2016-2021 (retrieved 7 Nov 2021)



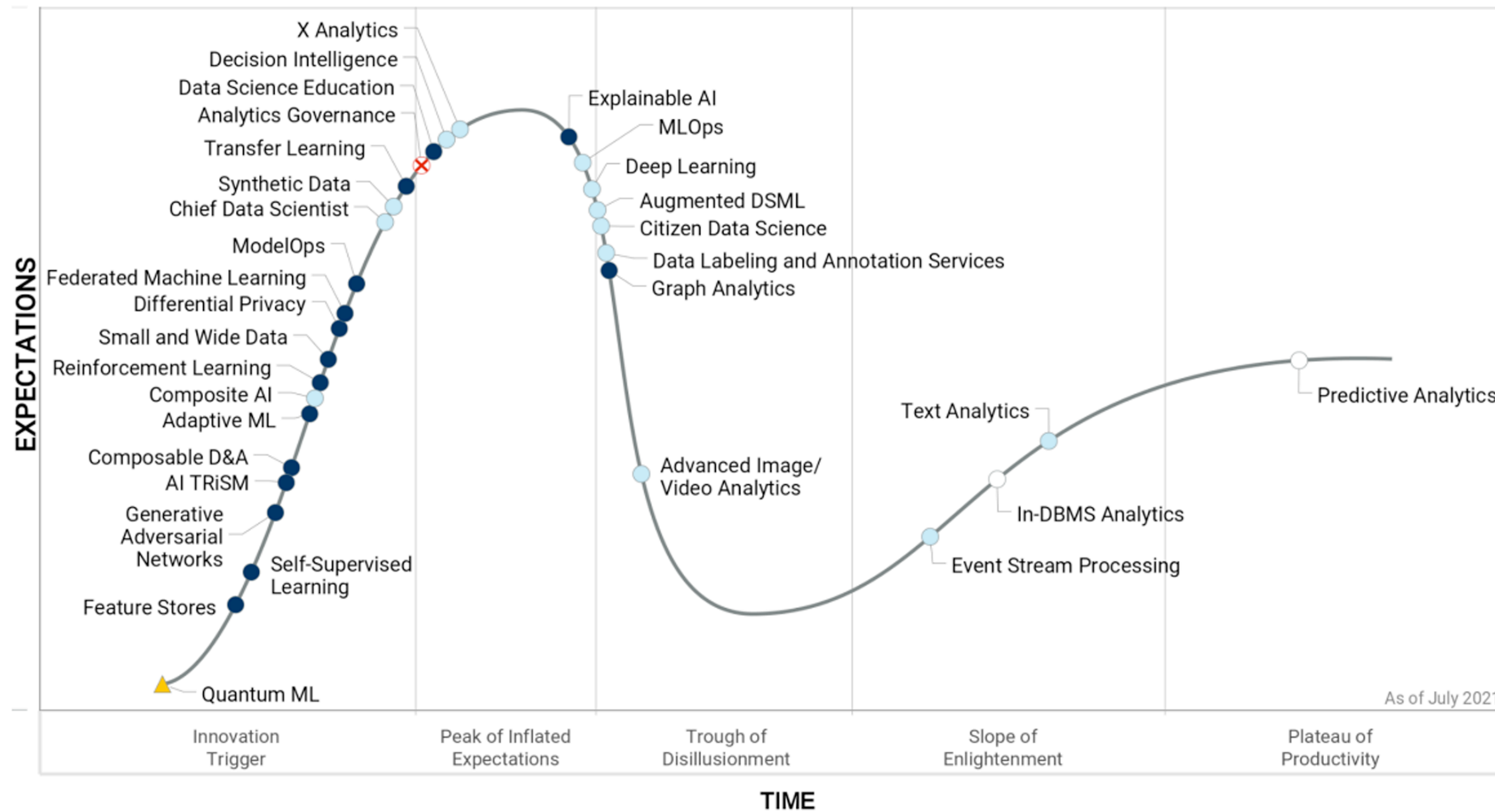
# Python vs R (Data Science and Machine Learning)

Google Trends 2004 - Present (retrieved 7 Nov 2021)



# Gartner Top 10 Data and Analytics Trends for 2021





Gartner Hype Cycle Data Science and Machine Learning, 2021

# Data Science Opportunity

**“the sexiest job of the 21st century.”**

*– Harvard Business Review, 2012*



Title	0-1 Years	1-2 Years	2-4 Years	4-6 Years	6+ Years
Tech Management	-	-	\$131K	\$144K	\$174K
Product Management	\$80K	\$95K	\$113K	\$126K	\$150K
Data Science	\$103K	\$110K	\$119K	\$135K	\$155K
DevOps/Infrastructure	\$83K	\$102K	\$120K	\$132K	\$158K
QA Engineer	\$86K	\$90K	\$94K	\$102K	\$118K
Design	\$68K	\$84K	\$99K	\$119K	\$136K
UI/UX	\$69K	\$87K	\$102K	\$117K	\$134K

# Engineering and Tech Roles

Vettery Salary Report 2020

	0-1 Years	1-2 Years	2-4 Years	4-6 Years	6+ Years
.NET	\$79K	\$91K	\$102K	\$114K	\$135K
C/C++	\$90K	\$100K	\$111K	\$128K	\$148K
Java	\$91K	\$99K	\$109K	\$125K	\$147K
JavaScript	\$84K	\$97K	\$110K	\$121K	\$137K
PHP	\$79K	\$89K	\$104K	\$115K	\$132K
Python	\$89K	\$103K	\$116K	\$129K	\$149K
Ruby/Ruby on Rails	\$87K	\$97K	\$115K	\$126K	\$145K

# Popular Programming Skills

Vettery Salary Report 2020

# Weekly Open Questions

Reply through [@thefutureisdata](#)

# Data Science คืออะไร?

What is data science?

# Fundamentals Data Science with Python



**Kholed Langsari**

AI/ML Engineer, Software Architect,  
Instructor at Fatoni University

langsari@ftu.ac.th