Anshori & Dimas

Engineering: Data

Idealita vs Realita

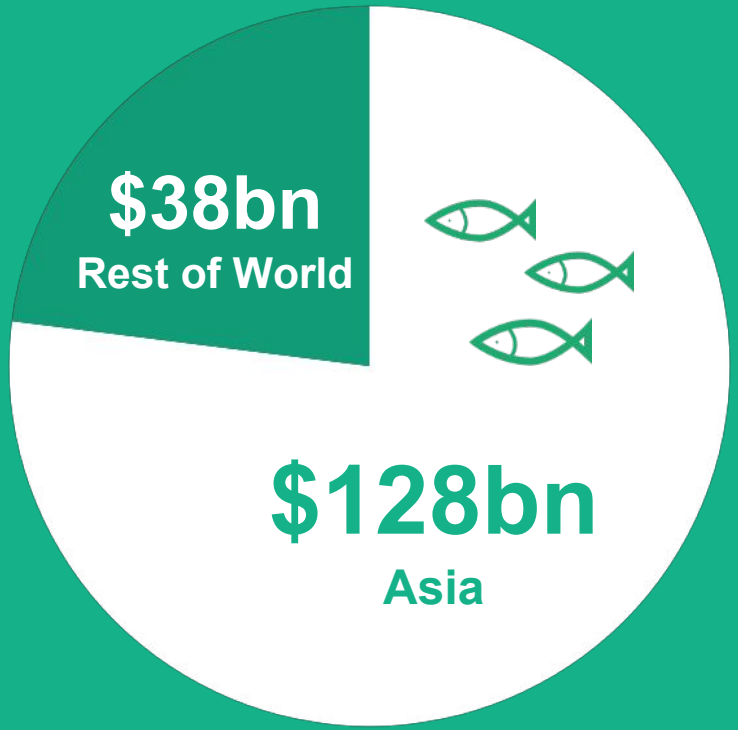
Indonesia is the 2nd largest

30.2 million ponds

3.3 million fish farmers

Fastest growing food sector in the world

Global Aquaculture Production 2014




80%
of the total
cost is
feeding

Inefficient and unskilled human labour

Over feeding

Feed stealing

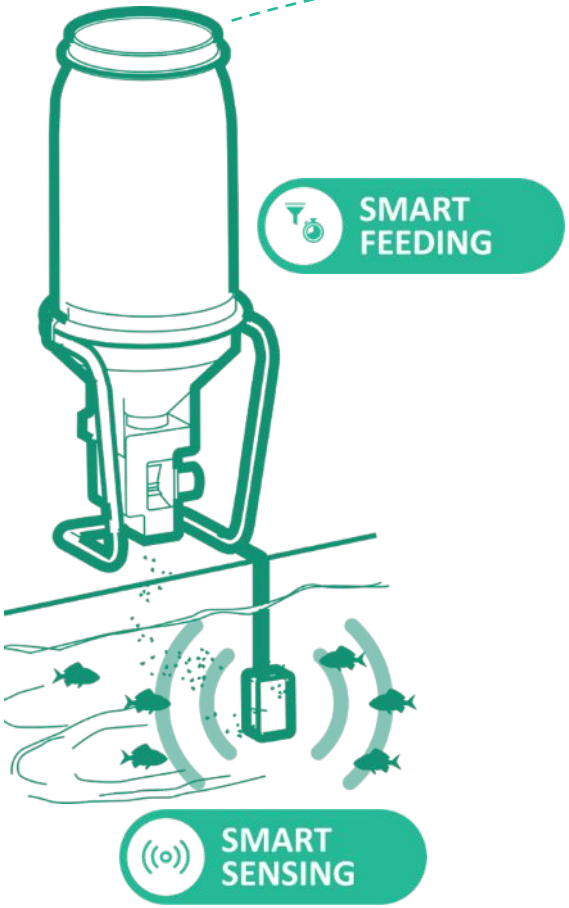
One of the biggest negative environmental impact

Hurting the profit, no accountability

CURRENT FEEDERS

SHRIMP FEEDER

FISH FEEDER



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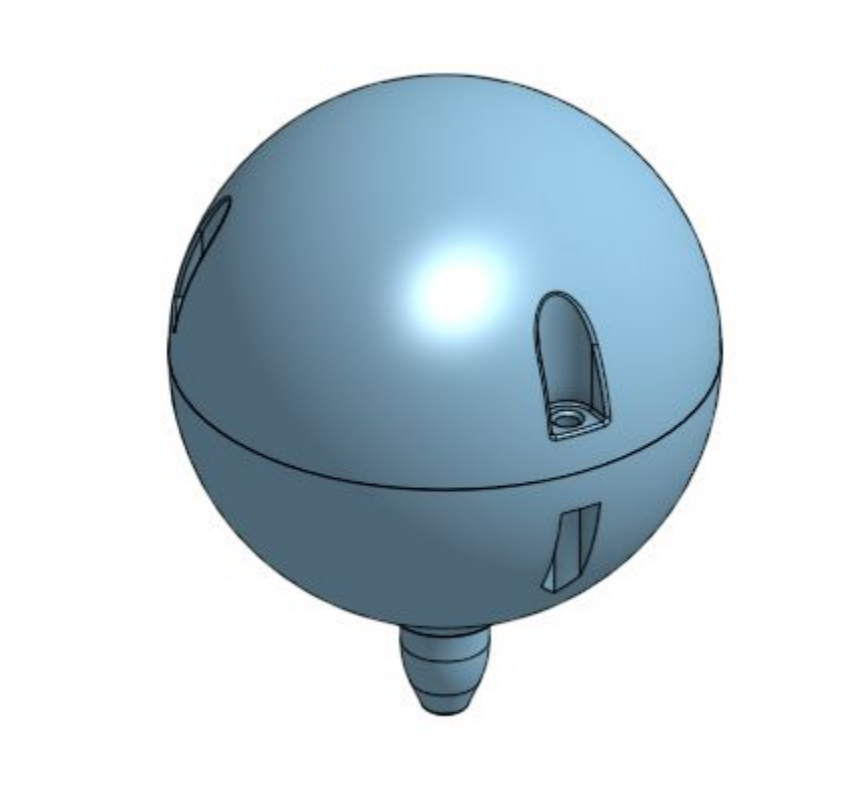
AUTOMATIC FEEDING

MOBILE BASED CONTROL

CLOUD BASED DATA



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Idealita

vs

Realita

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Mat Velloso
@matvelloso

Following

Difference between machine learning and AI:

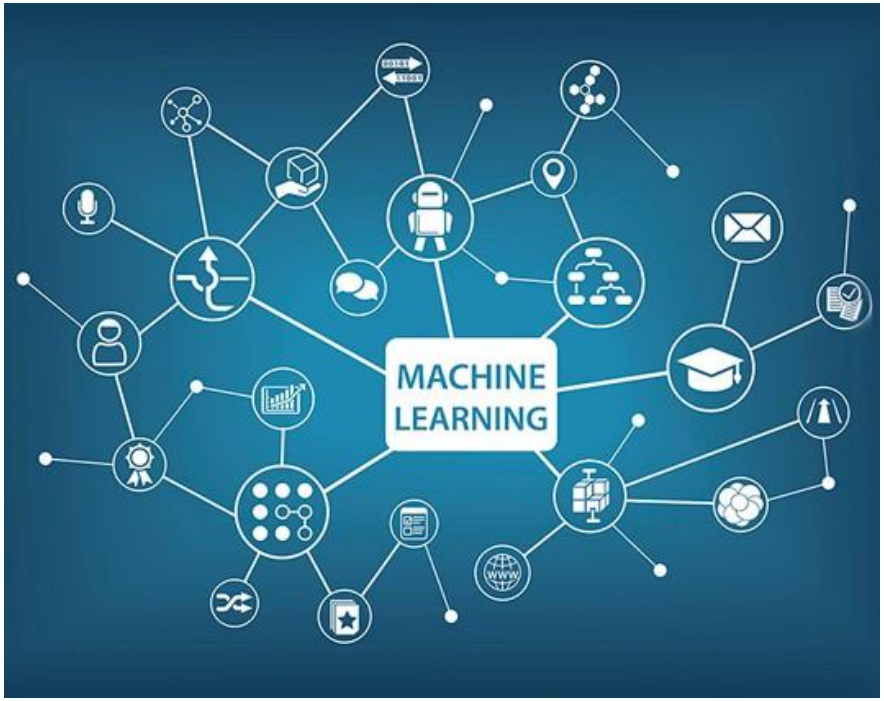
If it is written in Python, it's probably machine learning

If it is written in PowerPoint, it's probably AI

8:25 AM - 23 Nov 2018

7,718 Retweets **21,804** Likes

#10YearsChallenge



2009

2019

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Data Scientist

also known as Data Managers, statisticians.

A data scientist will be able to take data science projects from end to end. They can help store large amounts of data, create predictive modelling processes and present the findings.

Skills: Mathematics, Programming, Communication

Will use programmes such as:
SQL, Python, R

Data Engineers

also known as database administrators and data architects.

They are versatile generalists who use computer science to help process large datasets. They typically focus on coding, cleaning up data sets, and implementing requests that come from data scientists.

Skills: Programming, Mathematics, Big data

Will use programmes such as:
Hadoop, NoSQL, and Python

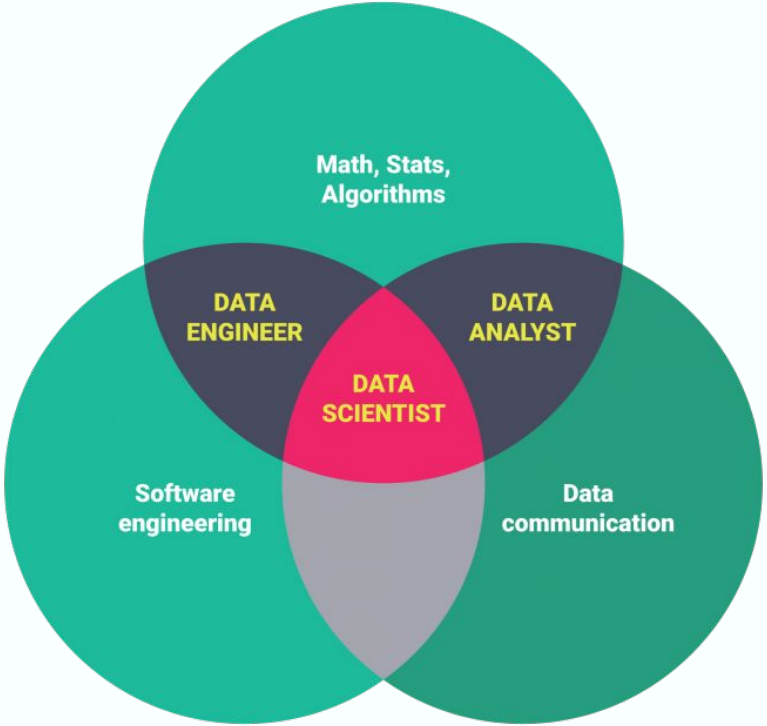
Data Analysts

also known as business Analysts.

They typically help people from across the company understand specific queries with charts.

Skills: Statistics, Communication, Business knowledge

Will use programmes such as:
Excel, Tableau, SQL



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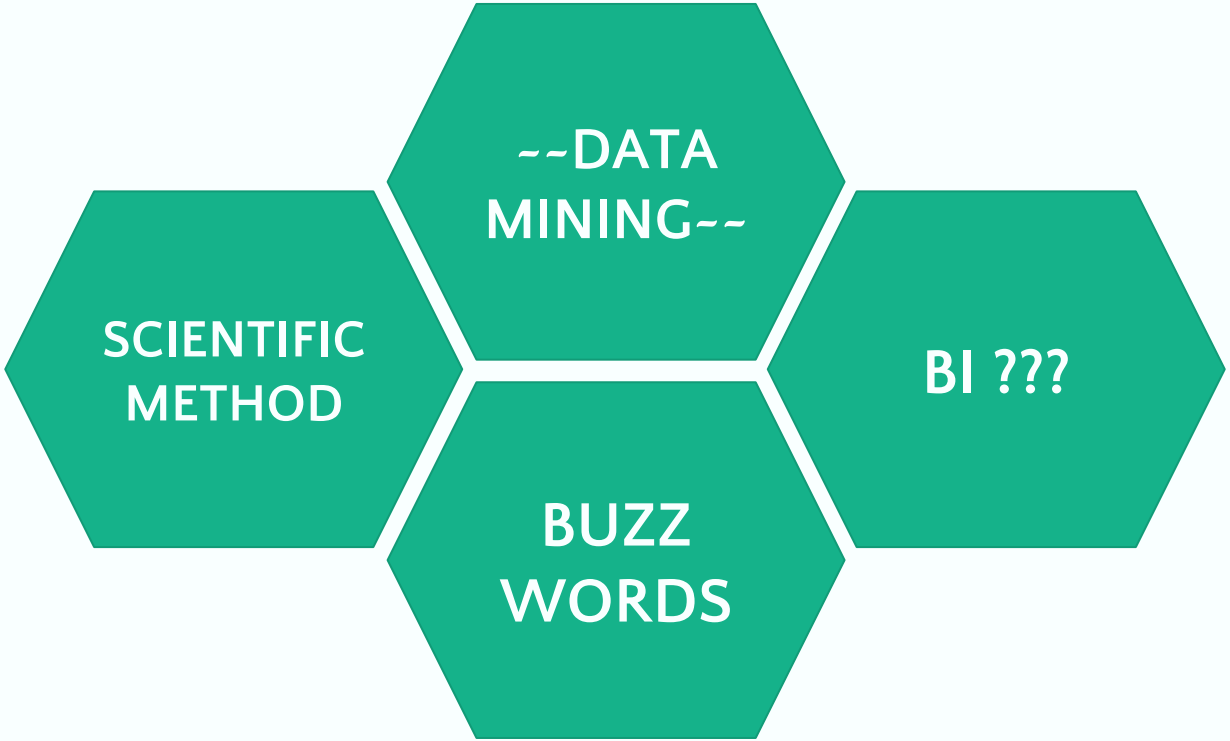
Data Science vs “Data Science”



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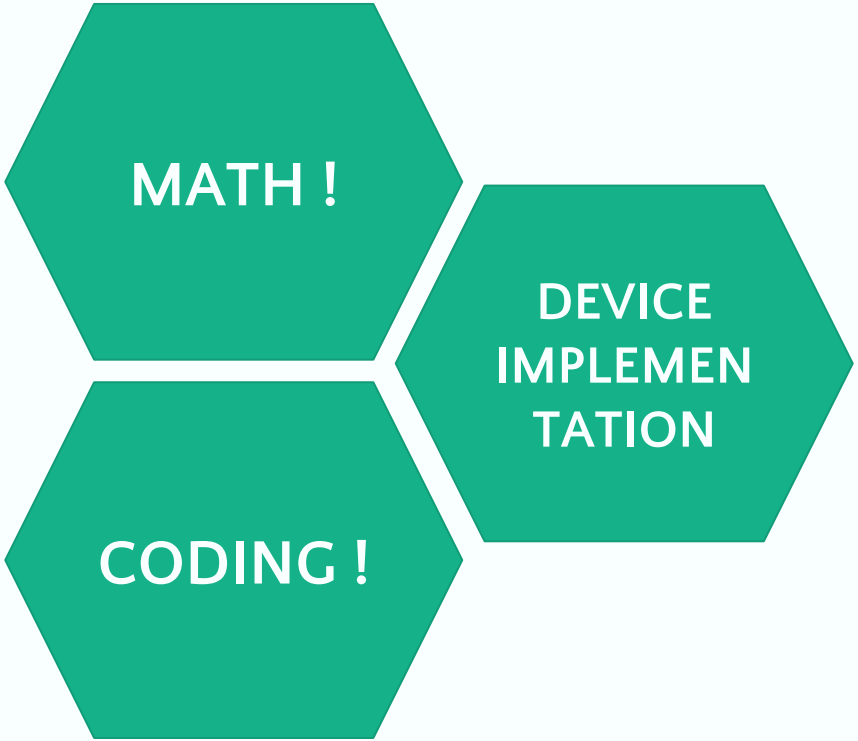
Existing Tools + Method vs DIY



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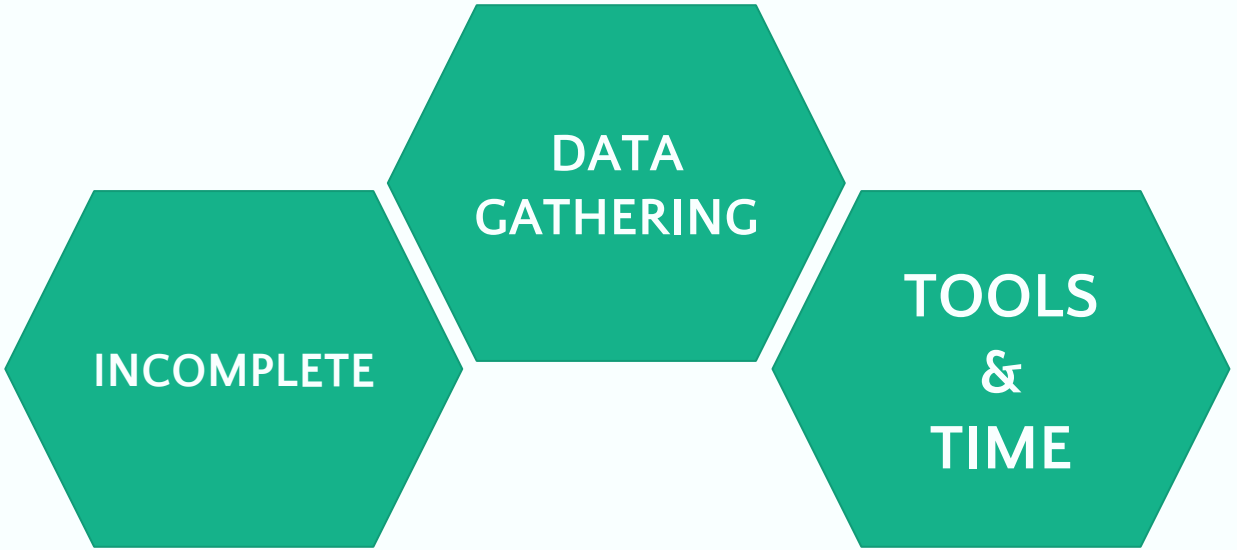
Data Available vs Data 404 Not Found



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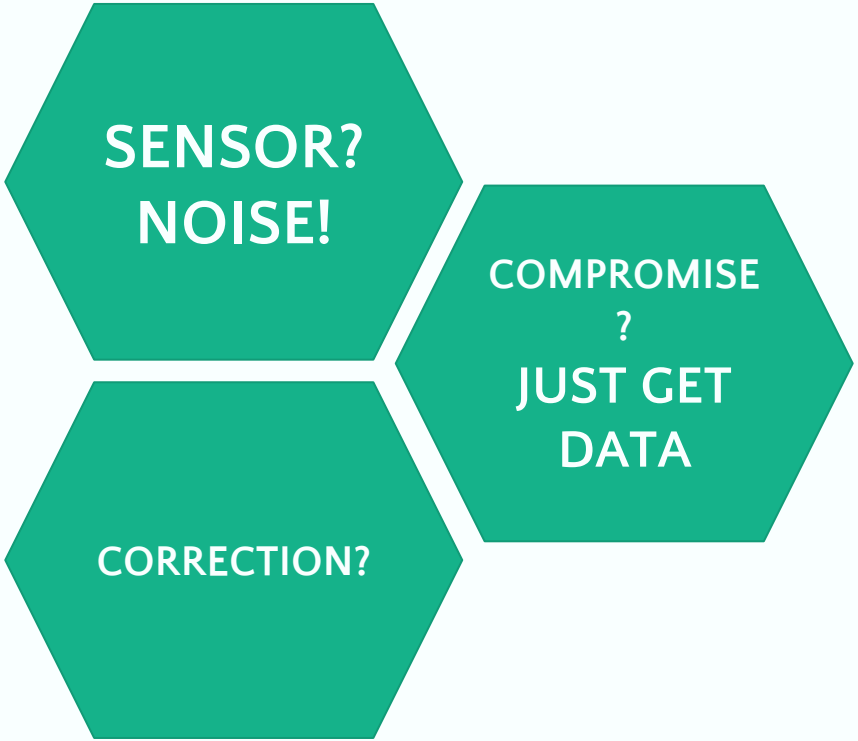
Clean Data vs Real Data



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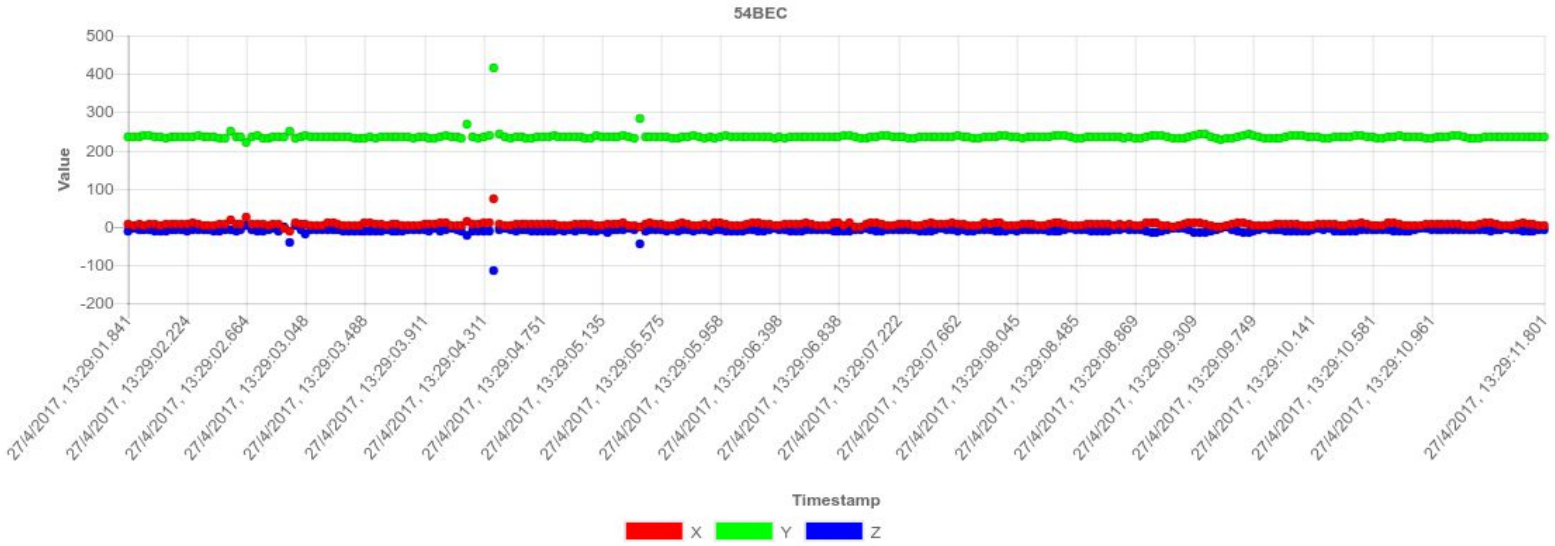
- Home
- View Devices
- View History
- Tag Data

Timestamp

Last Inserted Data

REFRESH



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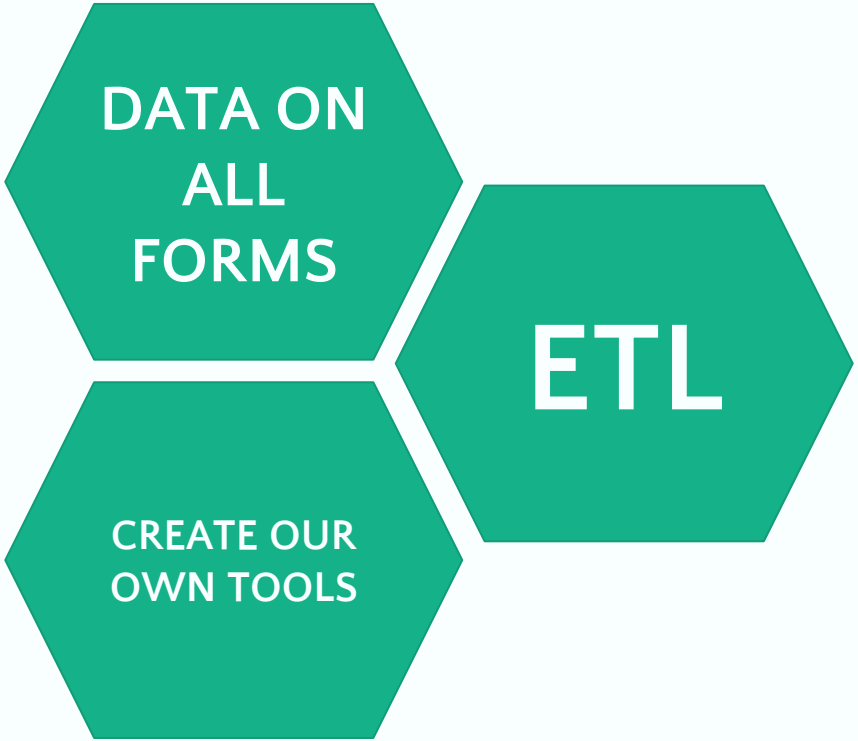
Big Data vs Multi Data



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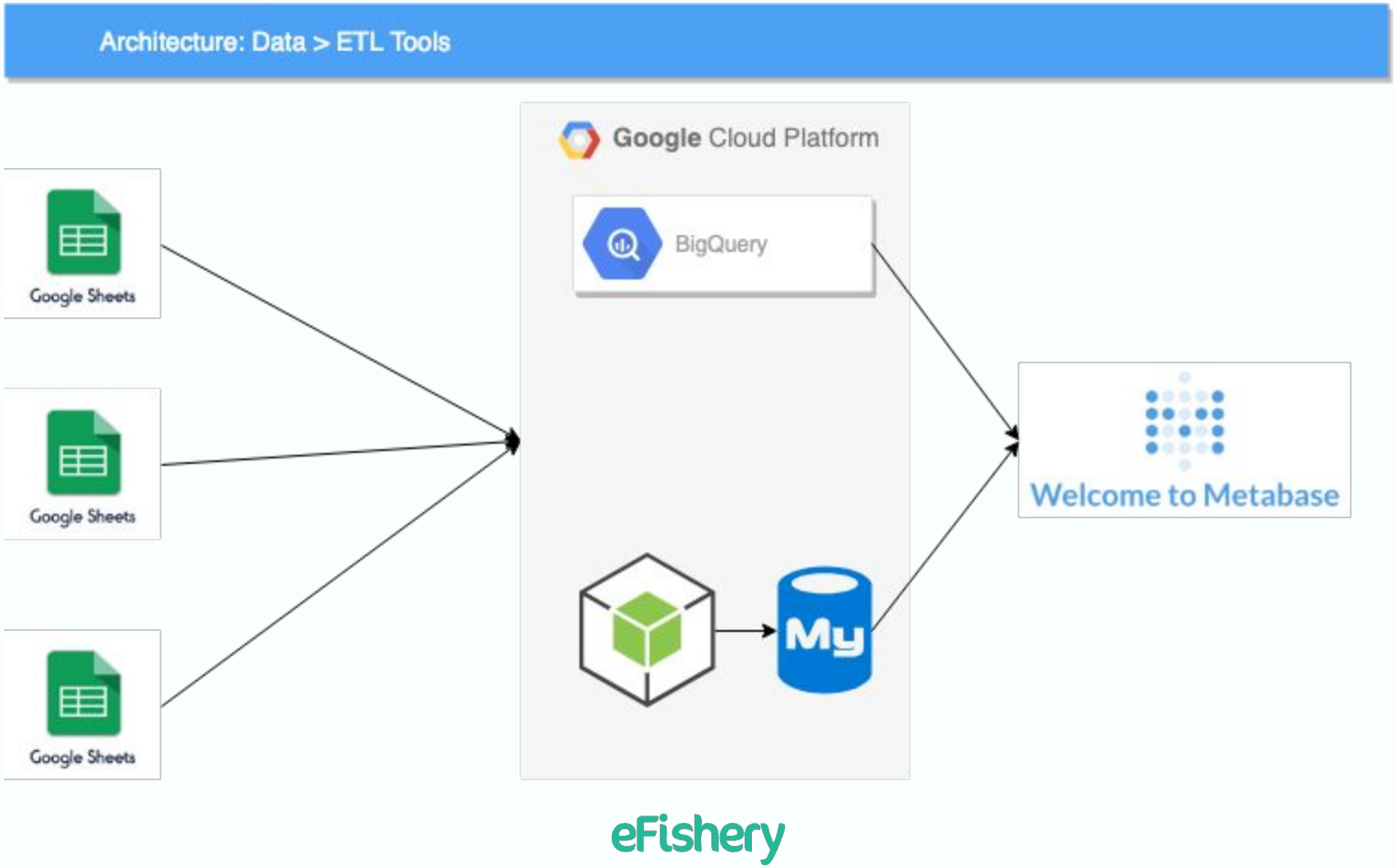
Architecture: Data > ETL Tools
Google Cloud Platform
BigQuery
Google Sheets
Google Sheets
Google Sheets
My
Welcome to Metabase
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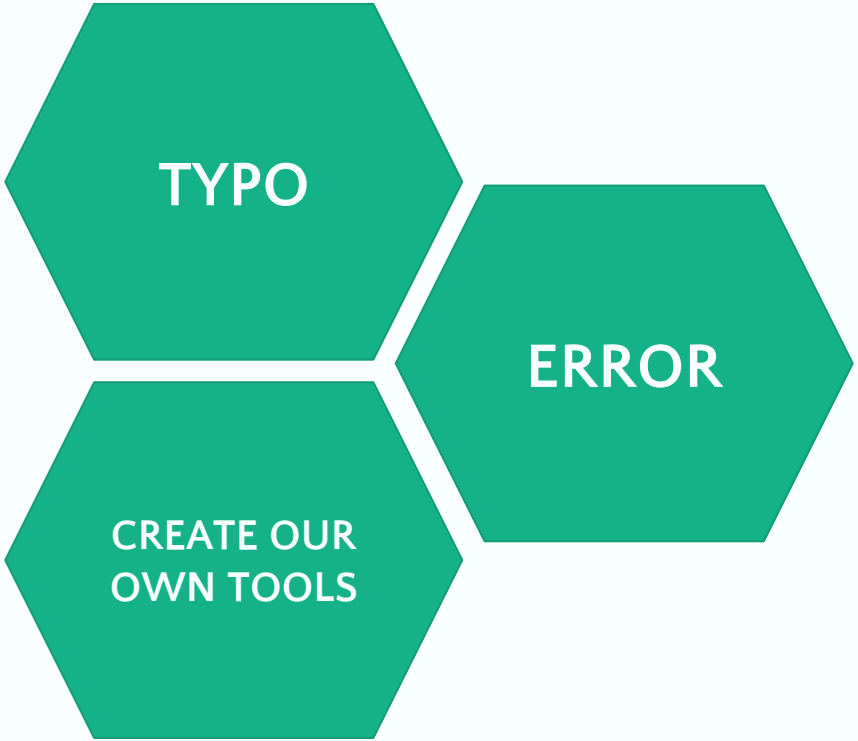
Well Formatted vs What The H*ll



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80 vs 20

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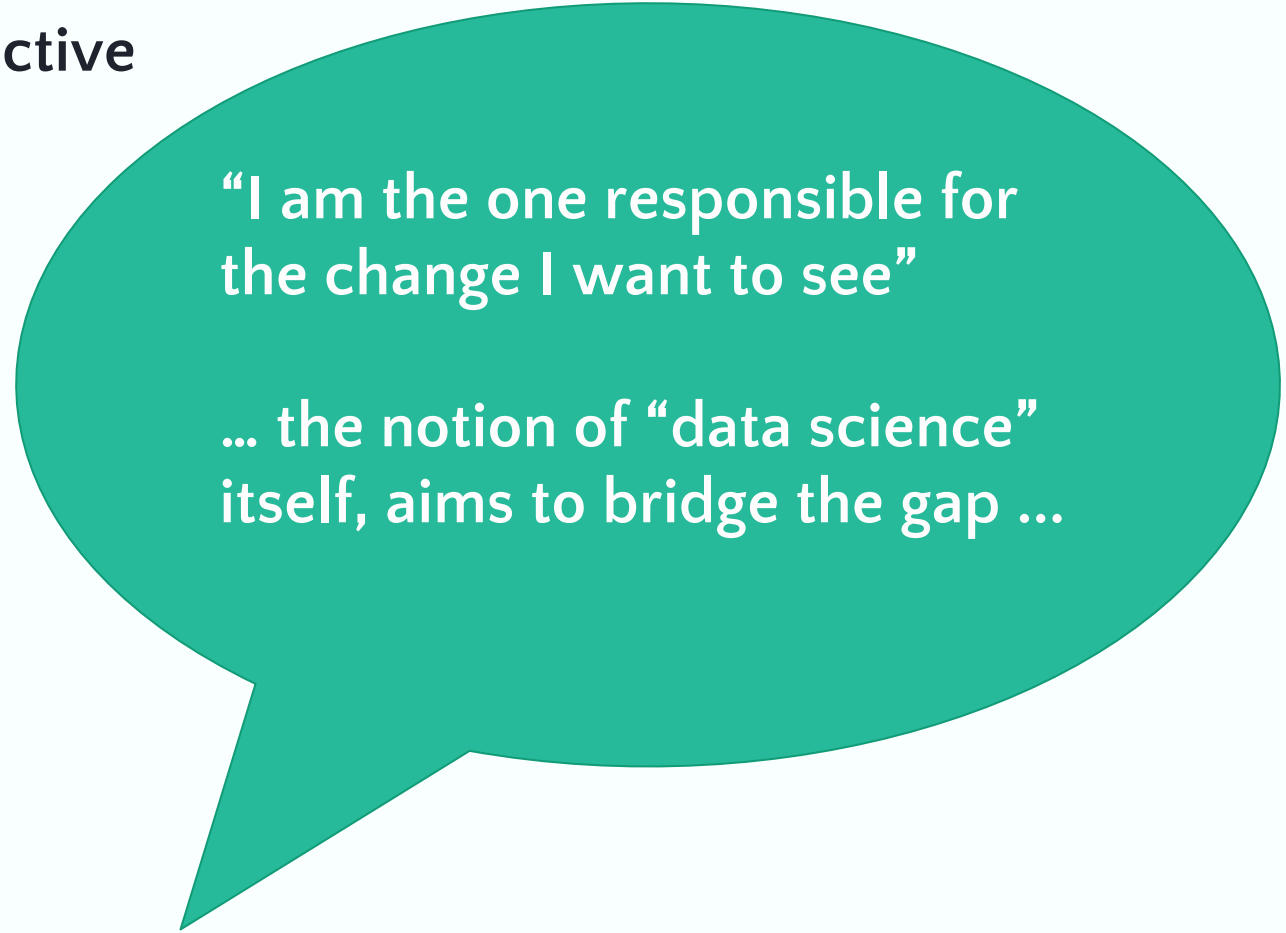
Anshori's Perspective



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Dimas' Perspective

In this modern world

... data scientist can't be *just* a data scientist

... data science is a continuous long process since day zero until forever

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Data Challenge

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Data Challenge

- Mr Dimanshori adalah head of data scientist di PT Maju Semoga Laku
- Mengajak kalian menjadi anggota tim data scientist beliau
- Untuk membuat sebuah intelligence system yang dapat mendeteksi apakah ikan di kolam sedang makan atau sedang tidak makan
- Dari sebuah sensor accelerometer yang mengapung di permukaan kolam
- Sensor ini membaca gerakan riak air kolam

Data Challenge

- Mr Dimanshori telah bawa sensor ke kolam Amazon Brazil Utara dan mengambil data ikan piranha sedang makan dan tidak makan
- Karena Mr Dimanshori orangnya baik hati, beliau juga telah memberi label pada datanya
- Contohnya yaitu sebagai berikut:
  `data_contoh.csv`
  `plot_contoh.png`

  bit.ly/dqlabefishery_data

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Data Challenge

Task dari Mr Dimanshori adalah minta dibuatkan:

- Eksplorasi data secara visual
- program (klasifikasi) seperti ini: `program_mr_dimanshori.py`

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Data Challenge Hints

- How to extract features from signal data
  - Signal framing (recommended: 104 samples)
  - Overlap (recommended: 50%)
  - Processing menggunakan FFT/wavelets tidak begitu perlu, kalau sempat saja
- Classifier
  - Try all: Probabilistic, Nearest neighbor, Tree, Linear, Non-linear, Deep learning
  - Search best model and best parameters
- Use scientific process
  - Build hypothesis
  - Research: googling, lookup papers, tentang semua hal terkait
  - Experiments: modif, mixing, comes up dengan sesuatu yang kreatif
  - Evaluasi: performance review, analysis what/why works and doesn't work
  - Write conclusion

Dua orang report ke Mr Dimanshori

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