



Direktorat Jenderal Pendidikan Tinggi, Riset, dan Teknologi  
Kementerian Pendidikan, Kebudayaan, Riset, dan Teknologi  
Republik Indonesia

DIKTI  
**SIGAP**  
MELAYANI

**Kampus  
Merdeka**  
INDONESIA JAYA



## MICROCREDENTIAL: ASSOCIATE DATA SCIENTIST

01 November – 10 Desember 2021

Sesi Industri/Pemerintah

# ***AWS Machine Learning for Data Scientist***

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Solutions Architect - Amazon Web Services Indonesia***



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- S1: S.Kom. – Teknik Informatika, ITS, Indonesia (1999)  
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- S2: M.Sc.Eng. – Computer Science and Information Engineering, 臺灣科技大學 (NTUST), Taiwan (2005)  
M.Phil. – Computer Science, University of Birmingham, UK (2017)
- S3: Electrical Engineering, 臺灣科技大學 (NTUST), Taiwan (2010 – cuti)  
Аспирант – Institute of Automation and Information Technologies, Тамбовский Государственный Технический Университет (ТГТУ), Russia (2017 – cuti)

### Riwayat/Pengalaman Pekerjaan:

- Dosen pada Departemen Teknik Informatika, Institut Teknologi Sepuluh Nopember (ITS), Surabaya, Indonesia (1998/2002 – sekarang)
- ICT consultant & practitioner (1996 – sekarang)
- Tutor dan demonstrator pada School of Computer Science, University of Birmingham, UK (2011 – 2016)
- PhD Researcher pada Department of Applied Informatics, Univerzita Komenského v Bratislave, Slovakia (2009 – 2010)
- PhD Researcher & Teaching Assistant pada Institute of Computer Science and Engineering, 國立交通大學 (NCTU), Taiwan (2007 – 2009)
- Teaching Assistant pada Department of Computer Science and Information Engineering, 臺灣科技大學 (NTUST), Taiwan (2003 – 2005)



# Industrial/Government Session: Discussion



# AWS: What is it?

- **Amazon Web Services, Inc. (AWS)** is a subsidiary of **Amazon** providing *on-demand cloud computing platforms* and *APIs* to individuals, companies, and governments, on a metered pay-as-you-go basis.

## What is AWS?

AWS provides a highly reliable, scalable, low-cost infrastructure platform in the cloud that powers millions of businesses in over 190 countries around the world.



The Most Extensive, Reliable and Secure Global Cloud Infrastructure Available

[SEE HOW WE DO IT >>](#)

The Amazon Web Services (AWS) Global Infrastructure delivers a cloud infrastructure companies can depend on—no matter their size, changing needs, or challenges. The AWS Global Infrastructure is designed and built to deliver the most flexible, reliable, scalable, and secure cloud computing environment with the highest quality global

# AWS: Revenue

- US\$46 billion (2020) - (wikipedia, 2021)





# AWS Indonesia: Where are here!

- Clients:





# AWS Indonesia: Where are here! (continued)

- Clients:



# AWS Indonesia: Where are here! (continued)

- Clients:







# AWS Indonesia: Consultant partners





# AWS Indonesia: Technology partners



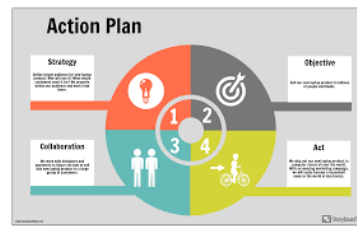


# AWS Indonesia: Training partners



# Data to wisdom chaining: Data scientist's role

- Data → Information → Knowledge → **Insight** → Wisdom  
... → Conspiracy Theory (... It's joking! 🤪)
- (Associate) Data Scientist's role:
  - It combines *computer science, statistics* and *mathematics*
  - They **analyse, process** and **model** data
  - Then **interpret** the *results* to create **actionable plans** for companies and other organizations

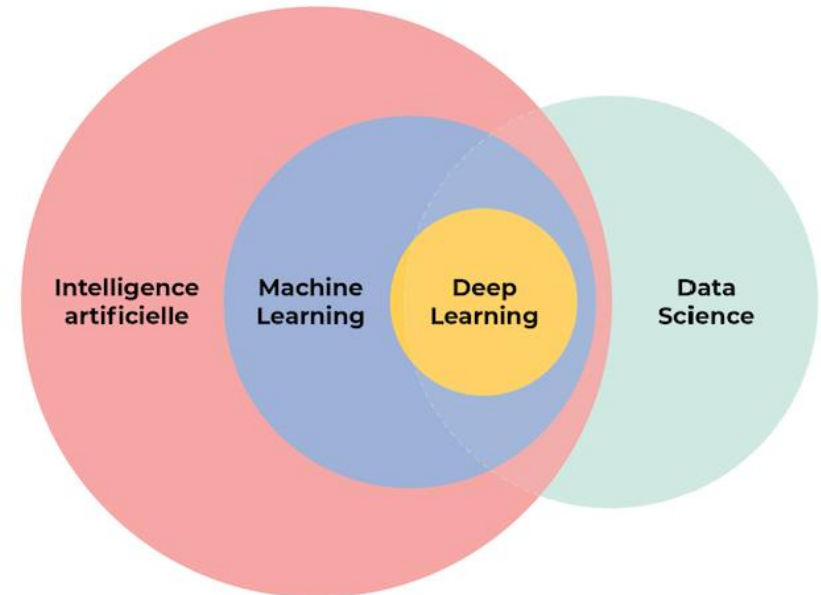


# Data Science, Machine Learning & AI: Relationship

## What is Machine Learning?

- Using technology to discover trends and patterns and compute mathematical predictive models based on factual past data
- Past data, statistics and probability theory are key tools used to build machine learning models and make predictions.

*Where traditional business analytics aims at answering questions about past events, machine learning aims at answering questions about the possibilities of **future** events*



# AI vs. Data Science vs. Machine Learning

### Why AWS for ML?

**BROADEST AND DEEPEST SET OF AI AND ML SERVICES**

200+ new features and services launched this last year for everyone from ML scientists to application developers  
Support all three of the major frameworks

**ACCELERATE YOUR ADOPTION OF ML**

Amazon SageMaker creates efficiencies and lowers costs  
Acceleration programs and trainings

**BUILT ON THE MOST COMPREHENSIVE CLOUD PLATFORM**

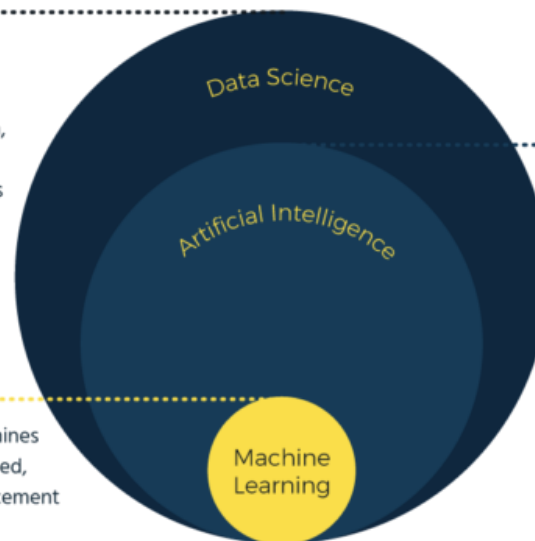
The strongest set of compute, storage, security, database, and analytics capabilities to build upon  
Gartner Vendor Rating (TBD)  
85% TensorFlow in the cloud runs on AWS

## Data Science

- Collection, preparation, and analysis of data
- Leverages AI/ML, research, industry expertise, and statistics to make business decisions

## Machine Learning

- Algorithms that help machines improve through supervised, unsupervised, and reinforcement learning
- Subset of AI and Data Science tool



## Artificial Intelligence

- Technology for machines to understand/interpret, learn, and make 'intelligent' decisions
- Includes Machine Learning among many other fields

# Data Science: What business can benefit from



## Advantages of Data Science for Businesses

- Helps Make Better Decisions
- Helps Improve Performance
- Helps the Staff follow the Best Practices
- Helps Boost Progress through Data Analysis
- Identifying Opportunities
- Helps Fight the Competitors
- Helps Identify the Target Audiences



*Terima kasih*