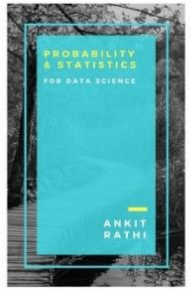
Kaggle Vs Real World Projects @ Kaggle Days

AGENDA

- About Me
- Context Building
- Hackathons
- Real-World Projects
- Head to Head
- General Differences
- Q&A

About Me

ankitrathi.com



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Ankit Rathi

Lead Architect - DS/AI | Author | Speaker | All views personal

Gautam Buddha Nagar, Uttar Pradesh, India · 500+ connections ·

Contact info

SITA

HBTI, Kanpur

Articles & activity

30,123 followers Manage followers

How to launch your DS/AI career in 12 weeks?

Ankit Rathi
Published on LinkedIn

From a time around when DS/AI field started picking up, every other day I get at least 8-10 messages from DS/AI starters & enthusiasts on 'How can I get into DS/AI field?'. Over th ...see more

70 Likes • 4 Comments

Like Comment Share

Crossed 30K followers few days back, thanks for all the encouragement &...

Ankit shared this

62 Reactions • 4 Comments

Great Tirthajyoti, looks interesting, will try it shortly.

Ankit commented

It doesn't detail out the each and every algorithm, but covers the journey of ...

Ankit replied to a comment

See all activity

See all articles

Experience

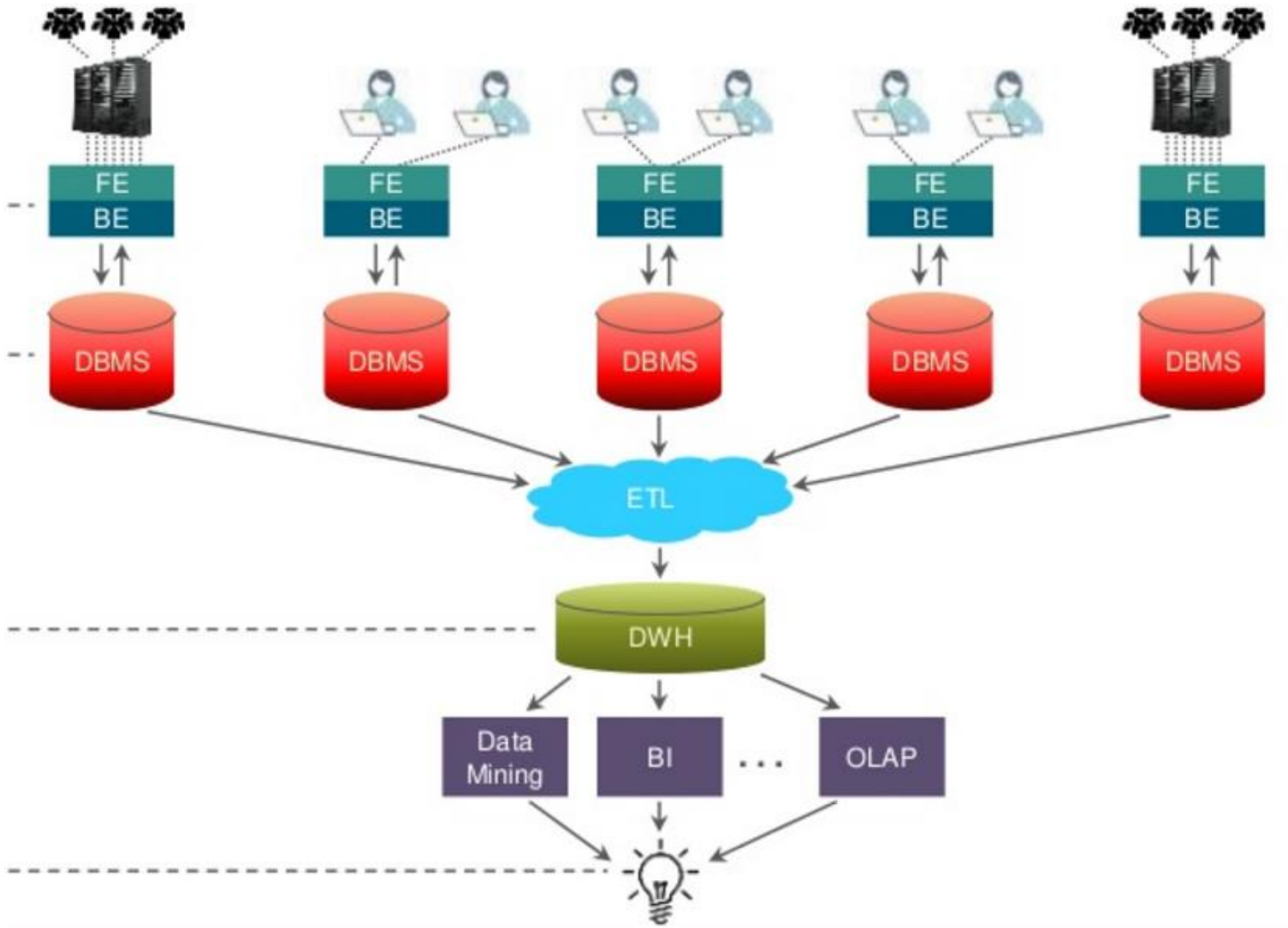
Lead Architect
SITA
Dec 2017 – Present · 1 yr 9 mos

Principal Consultant
Genpact Headstrong Capital Markets
Jun 2016 – Dec 2017 · 1 yr 7 mos
Noida Area, India

Tech Lead
Royal Bank of Scotland
Nov 2010 – Jun 2016 · 5 yrs 8 mos
New Delhi Area, India

- 14+ years in Data & Analytics
- Currently working in SITA
- Worked on DBs/ETL/DWH/BI
- Transitioned into DS/AI in 2014
- Infusing intelligence in products
- Blogger, Author & Speaker

Let me start with a story…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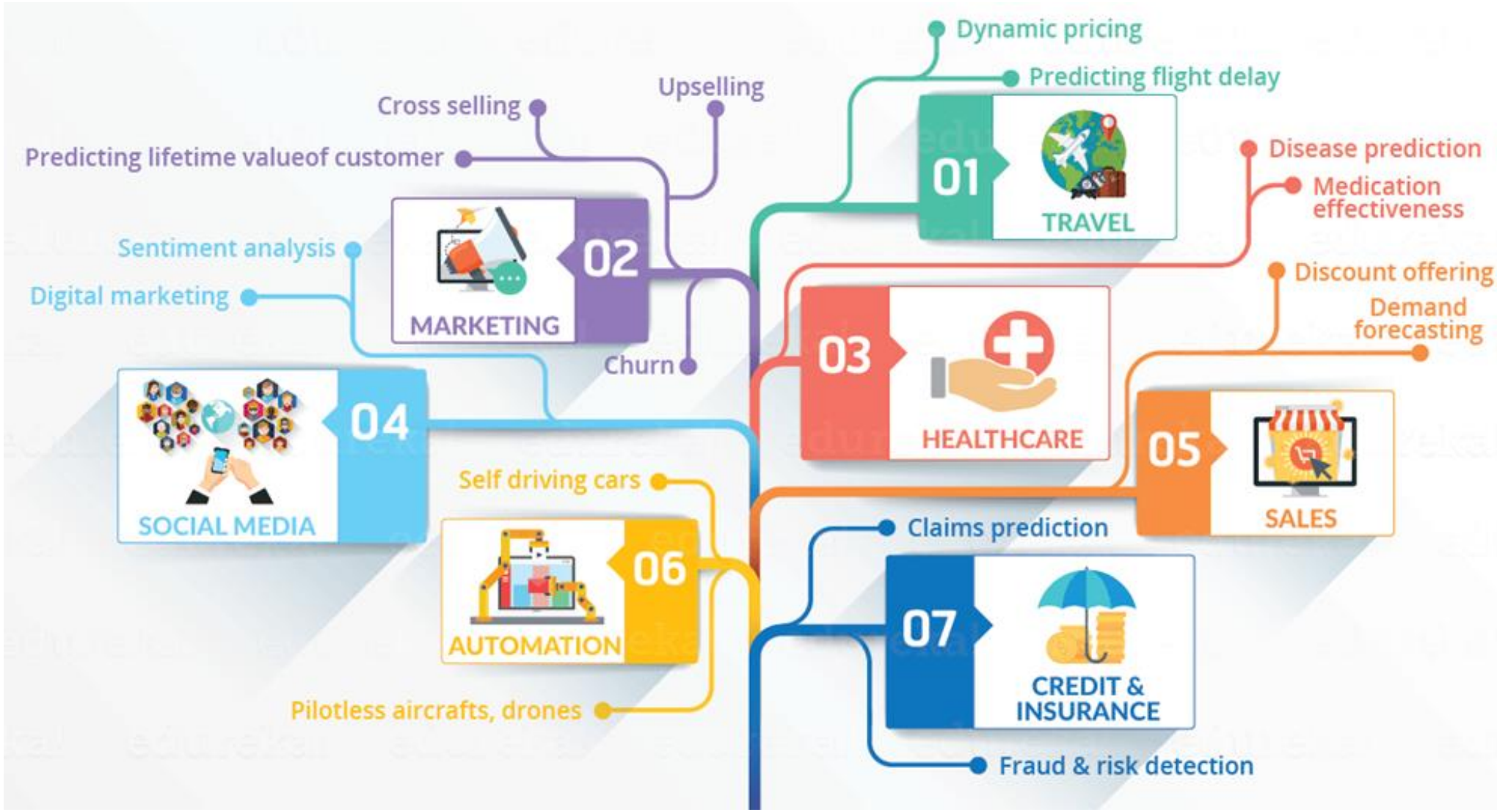
DBMS
ETL
DWH
Data Mining
BI
OLAP

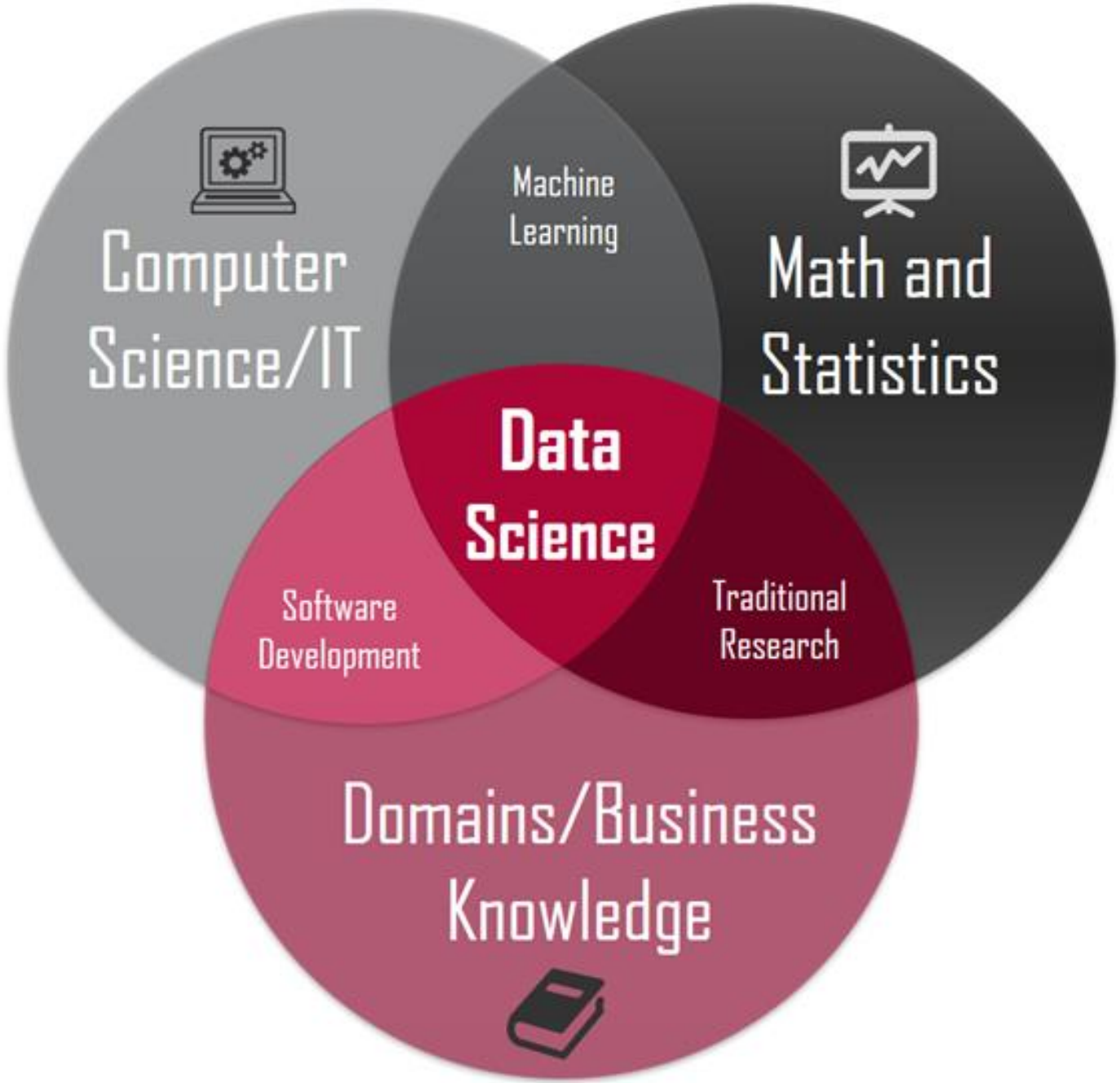
Data Scientist: The Sexiest Job of the 21st Century

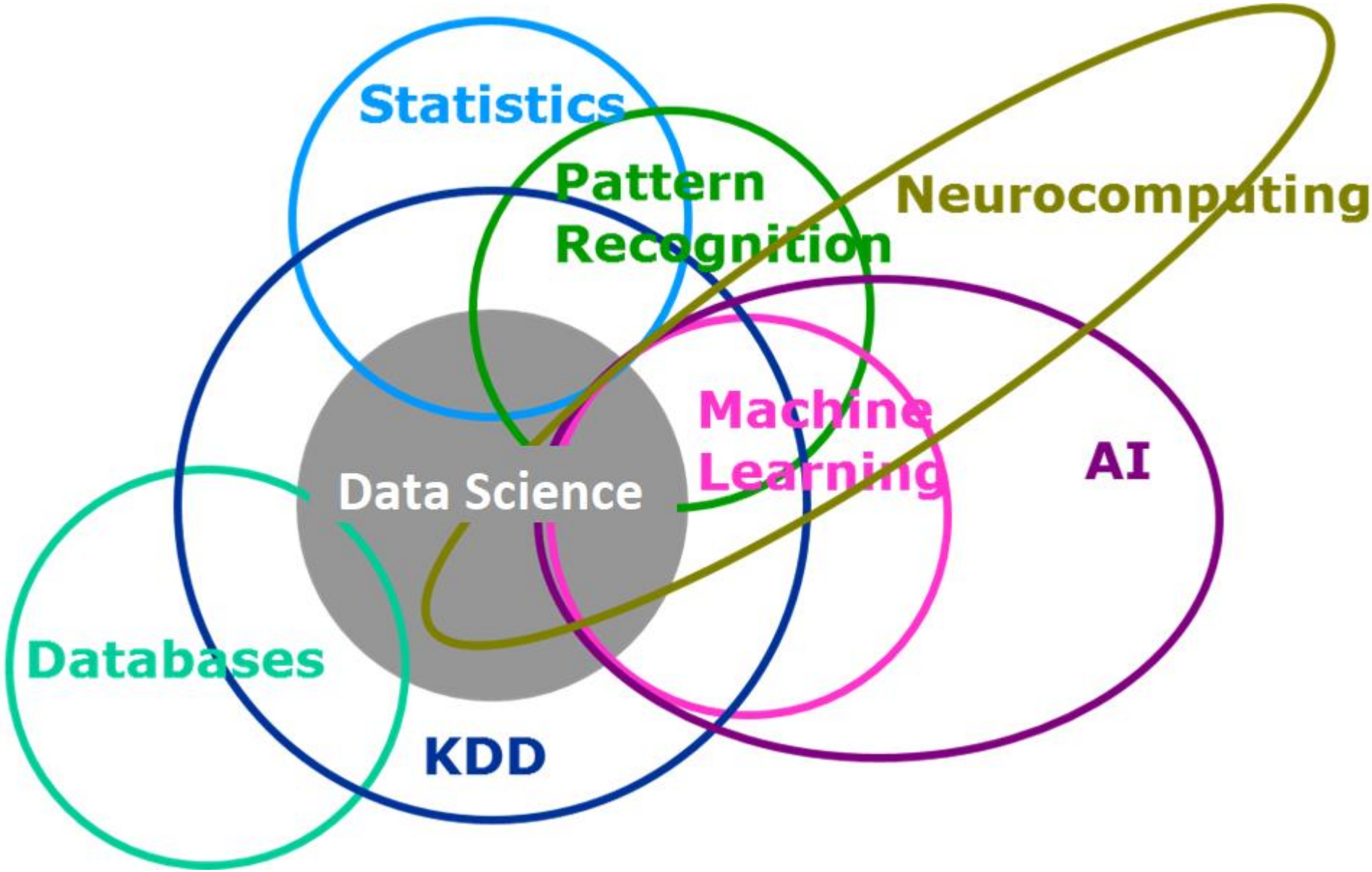
by Thomas H. Davenport and D.J. Patil

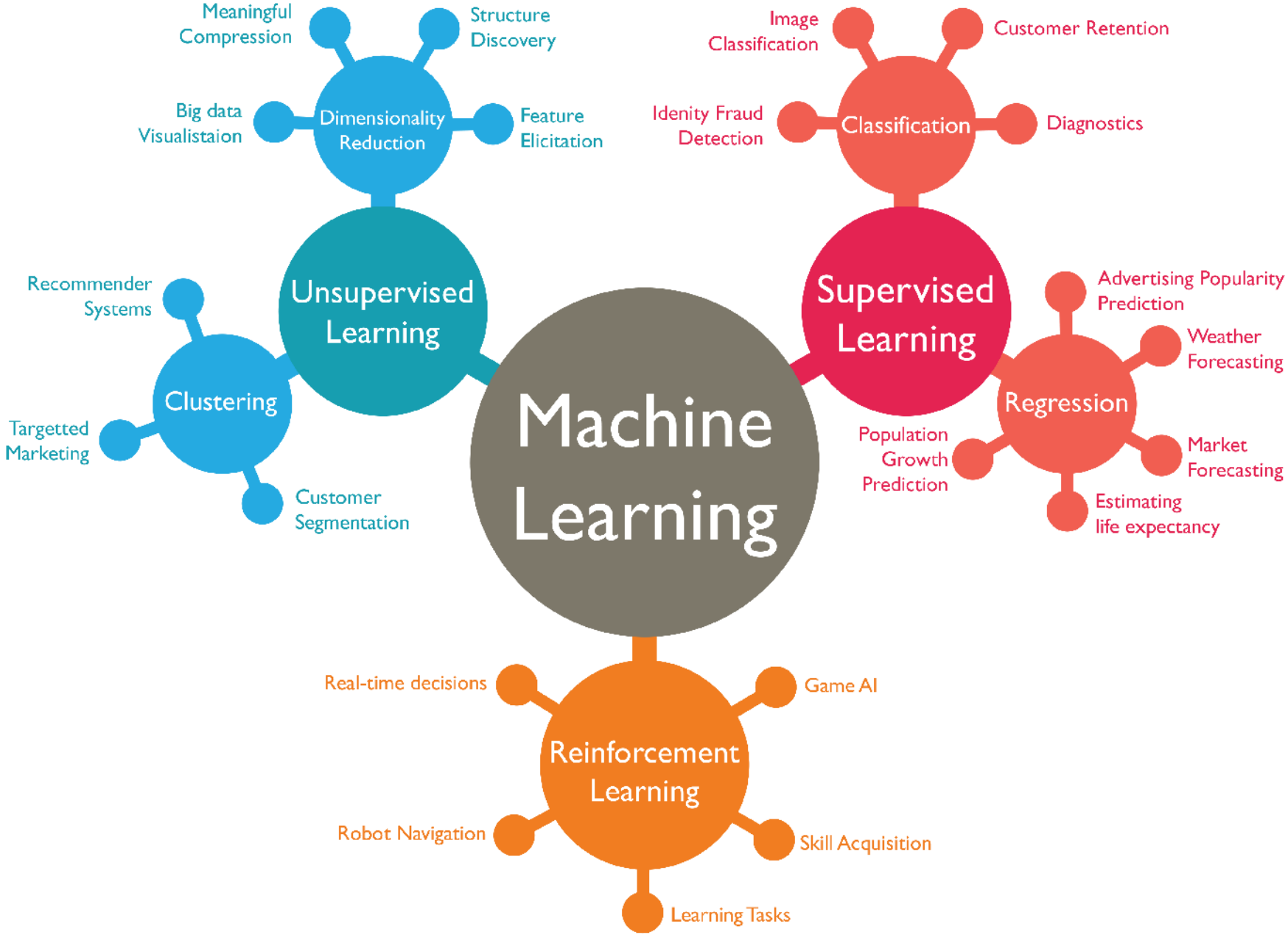
FROM THE OCTOBER 2012 ISSUE

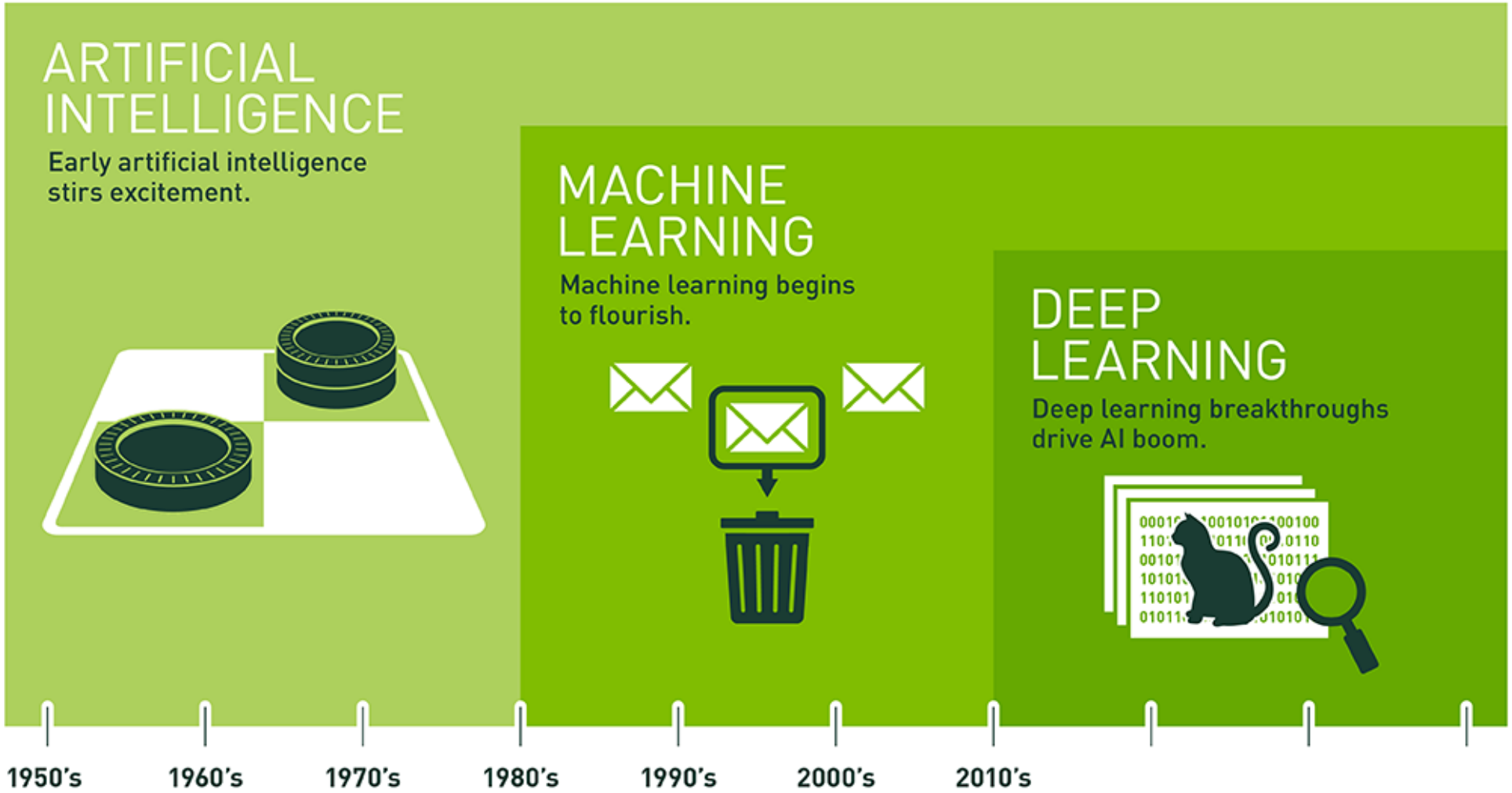
Context Building

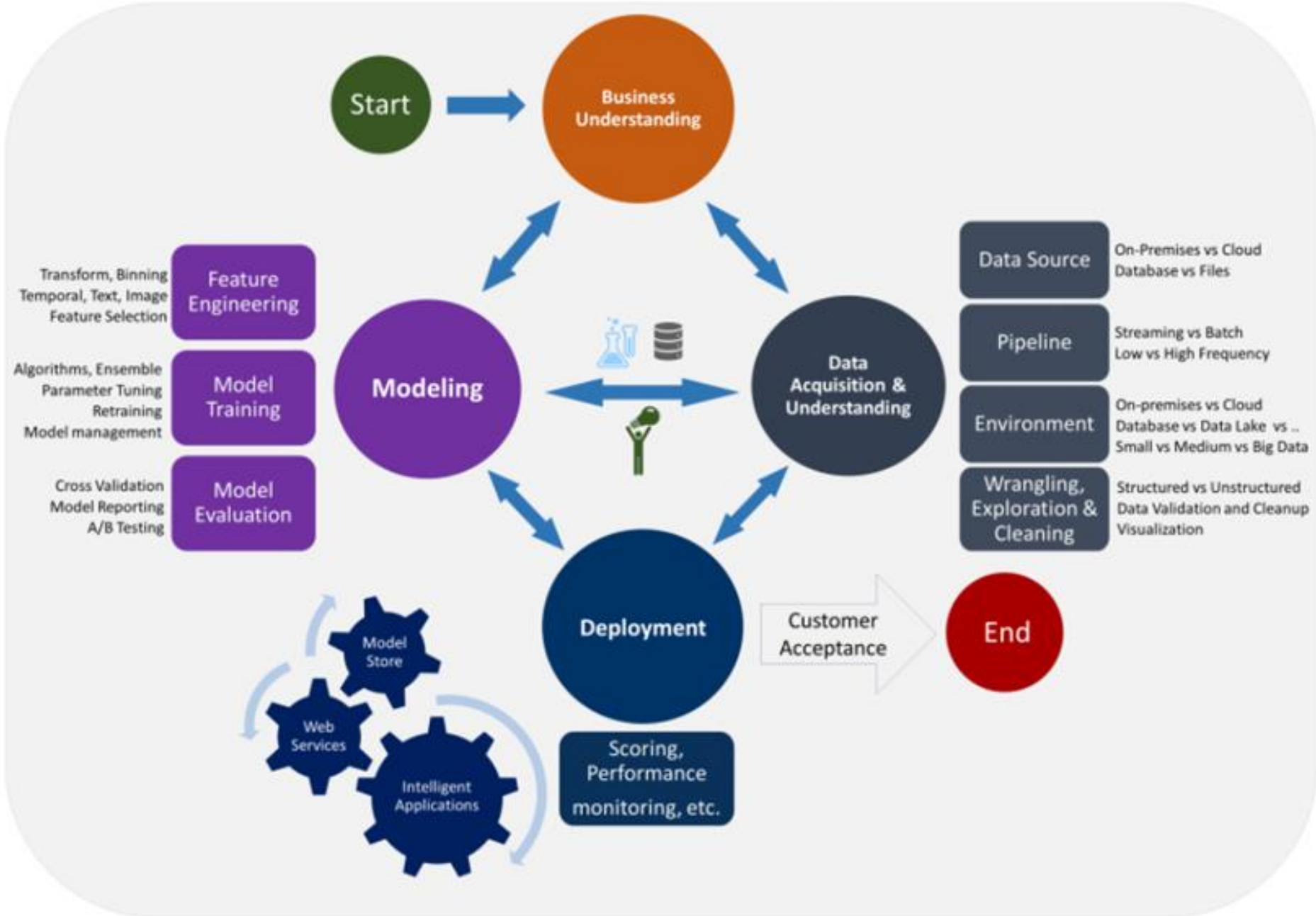

Dynamic pricing
Predicting flight delay
01
TRAVEL
Upselling
Cross selling
Predicting lifetime valueof customer
02
MARKETING
Sentiment analysis
Digital marketing
Churn
Disease prediction
Medication effectiveness
03
HEALTHCARE
Discount offering
Demand forecasting
05
SALES
04
SOCIAL MEDIA
Self driving cars
06
AUTOMATION
Pilotless aircrafts, drones
Claims prediction
07
CREDIT & INSURANCE
Fraud & risk detection


Computer Science/IT
Machine Learning
Math and Statistics
Data Science
Software Development
Traditional Research
Domains/Business Knowledge

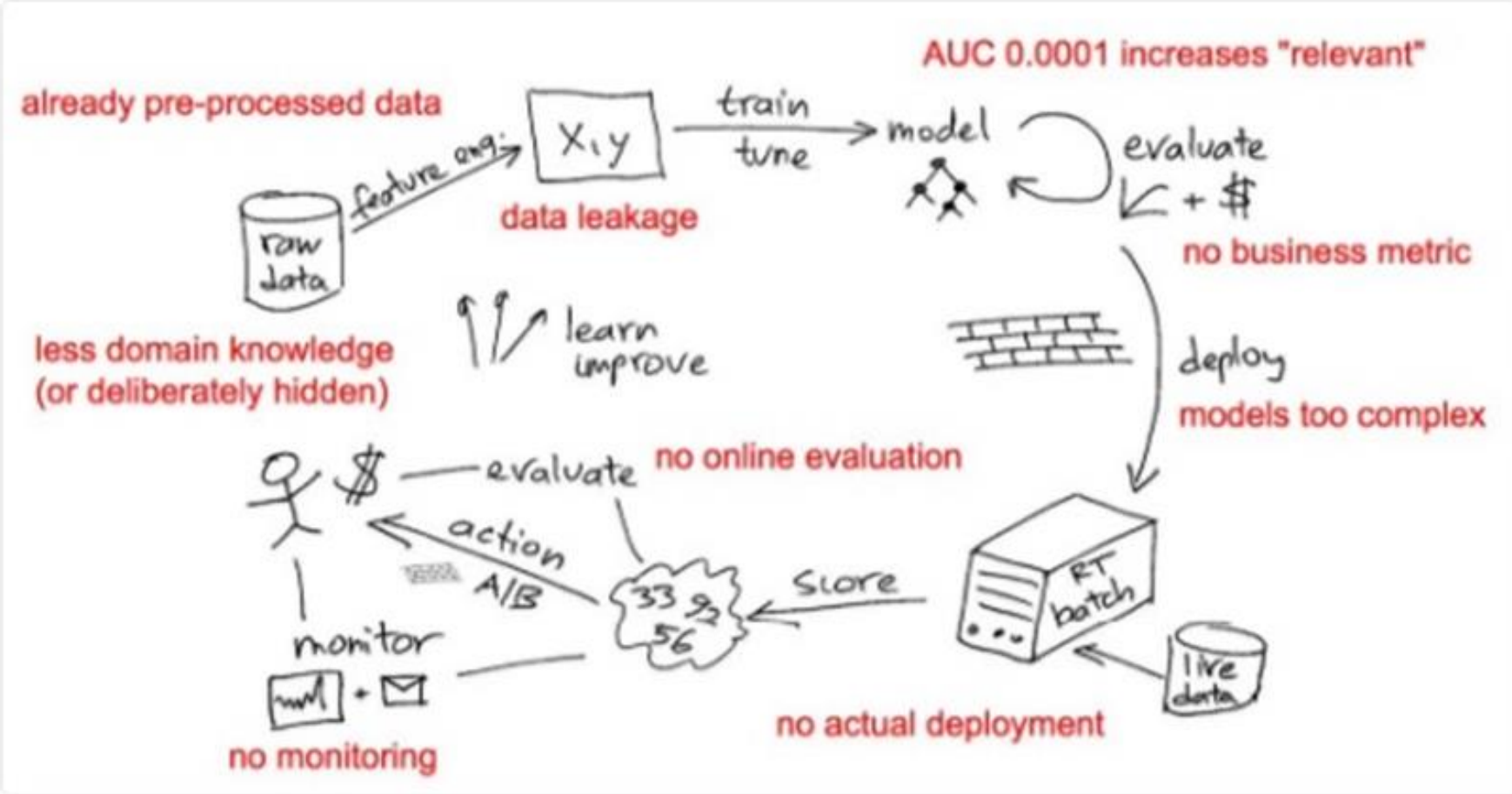

Statistics
Pattern Recognition
Neurocomputing
Machine Learning
AI
Data Science
Databases
KDD


Machine Learning
Unsupervised Learning
Dimensionality Reduction
Meaningful Compression
Structure Discovery
Big data Visualistaion
Feature Elicitation
Clustering
Recommender Systems
Targetted Marketing
Customer Segmentation
Supervised Learning
Classification
Image Classification
Customer Retention
Idenity Fraud Detection
Diagnostics
Regression
Advertising Popularity Prediction
Weather Forecasting
Population Growth Prediction
Market Forecasting
Estimating life expectancy
Reinforcement Learning
Real-time decisions
Game AI
Robot Navigation
Skill Acquisition
Learning Tasks


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


Start
Business Understanding
Modeling
Data Acquisition & Understanding
Deployment
Feature Engineering
Transform, Binning
Temporal, Text, Image
Feature Selection
Model Training
Algorithms, Ensemble
Parameter Tuning
Retraining
Model management
Model Evaluation
Cross Validation
Model Reporting
A/B Testing
Data Source
On-Premises vs Cloud
Database vs Files
Pipeline
Streaming vs Batch
Low vs High Frequency
Environment
On-premises vs Cloud
Database vs Data Lake vs ..
Small vs Medium vs Big Data
Wrangling, Exploration & Cleaning
Structured vs Unstructured
Data Validation and Cleanup
Visualization
Customer Acceptance
End
Model Store
Web Services
Intelligent Applications
Scoring, Performance monitoring, etc.

If you do #kaggle to learn #machinelearning, you are missing on 80% of things you need for ML in real life/production



Hackathons

- Get the Overview
  - Description, Evaluation, Timeline, Specific Req.
- Explore the data
- Explore other kernels
- Build a baseline
- Keep improvising till deadline

Real World Projects

- Identify & evaluate the Opportunity
- Develop Business Understanding
- Fetch, qualify & analyze available data
- Build a Prototype/POC
- Follow CRISP-DM methodology
- Deploy, Host & Monitor

Head to Head Comparison

Problem Statement

- Kaggle: Problem Statement is well defined
- Project: Need to identify & formulate Problem Statement

Data Availability

- Kaggle: Data-sets are available
- Project: Need to identify & fetch relevant data

Evaluation Sets

- Kaggle: Train-Test-Real data are already segregated
- Project: Need to segregate Train-Test-Real data

Additional Data

- Kaggle: You may or may not use additional data
- Project: You can always identify & use relevant additional data

Evaluation Criteria

- Kaggle: Evaluation criteria is available
- Project: You need to define evaluation criteria

Deployment

- Kaggle: You need to submit the results in specific format
- Project: You need to deploy & host the model for business

Timelines

- **Kaggle: You get a deadline to submit**
- **Project: You can carry on as long as project funds permit**

General Differences

Model Performance

- Kaggle: You have the leaderboard to know where you are
- Project: You are the best as long as you are not challenged

Expectations

- Kaggle: Expectation is move higher the leaderboard
- Project: You can manage expectations of the stakeholders

Business Value

- Kaggle: You can use all the resources you can
- Project: You take decisions in terms of business value

Time to Market

- Kaggle: Competition timeline is important
- Project: Time to market is an important aspect

Collaboration

- Kaggle: You can collaborate with other competitors to form a team
- Project: You need T-shaped professionals to deliver

Model Complexity

- Kaggle: Models can be as complex as they can
- Project: Practical deployment aspects are considered while increasing the complexity

Concluding Thoughts

Q&A

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