Practices of Business Intelligence

Course Orientation for Practices of Business Intelligence

Husni
Lab. Riset JTIF UTM

Business Intelligence (BI)

① **Introduction to BI and Data Science**

2 **Descriptive Analytics**

3 **Predictive Analytics**

4 **Prescriptive Analytics**

5 **Big Data Analytics**

6 **Future Trends**

Course Introduction

- This course introduces the fundamental concepts and technology practices of business intelligence.

- Topics include
  - Business Intelligence, Analytics, and Data Science,
  - AI, Big Data, and Cloud Computing,
  - Descriptive Analytics: Nature of Data, Statistical Modeling, and Visualization, Business Intelligence and Data Warehousing,
  - Predictive Analytics: Data Mining Process, Methods, and Algorithms, Text, Web, and Social Media Analytics,
  - Prescriptive Analytics: Optimization and Simulation,
  - SNA, Machine and Deep Learning, NLP,
  - AI Chatbots and Conversational Commerce,
  - Future Trends in Analytics.

Objective

- Understand and apply the fundamental concepts and technology practice of business intelligence.

Business Intelligence (BI)

① **Introduction to BI and Data Science**

2 **Descriptive Analytics**

3 **Predictive Analytics**

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5 **Big Data Analytics**

6 **Future Trends**

Syllabus

1. 1 Course Orientation for Practices of Business Intelligence

2. 2 Business Intelligence, Analytics, and Data Science

3. 3 ABC: AI, Big Data, and Cloud Computing

4. Descriptive Analytics I: Nature of Data, Statistical Modeling, and Visualization

5. Descriptive Analytics II: Business Intelligence and Data Warehousing

6. Predictive Analytics I: Data Mining Process, Methods, and Algorithms

Syllabus

1. Predictive Analytics II: Text, Web, and Social Media Analytics

2. Prescriptive Analytics: Optimization and Simulation

3. Social Network Analysis

4. Machine Learning and Deep Learning

5. Natural Language Processing

6. AI Chatbots and Conversational Commerce

7. Future Trends, Privacy and Managerial Considerations in Analytics

Referensi

- Slides Kuliah

- Business Intelligence, Analytics, and Data Science: A Managerial Perspective, 4th Edition, Ramesh Sharda, Dursun Delen, and Efraim Turban, Pearson, 2017.

- Decision Support and Business Intelligence Systems, Ninth Edition, Efraim Turban, Ramesh Sharda, Dursun Delen, Pearson, 2011.

Team Term Project

- Term Project Topics
  - Business Intelligence
  - AI Challenge Champion
  - Social Network Analysis (SNA)
  - FinTech
  - Short Text Conversation (STC)

Business Intelligence, Analytics, and Data Science:
A Managerial Perspective, 4th Edition,
Ramesh Sharda, Dursun Delen, and Efraim Turban, Pearson, 2017.
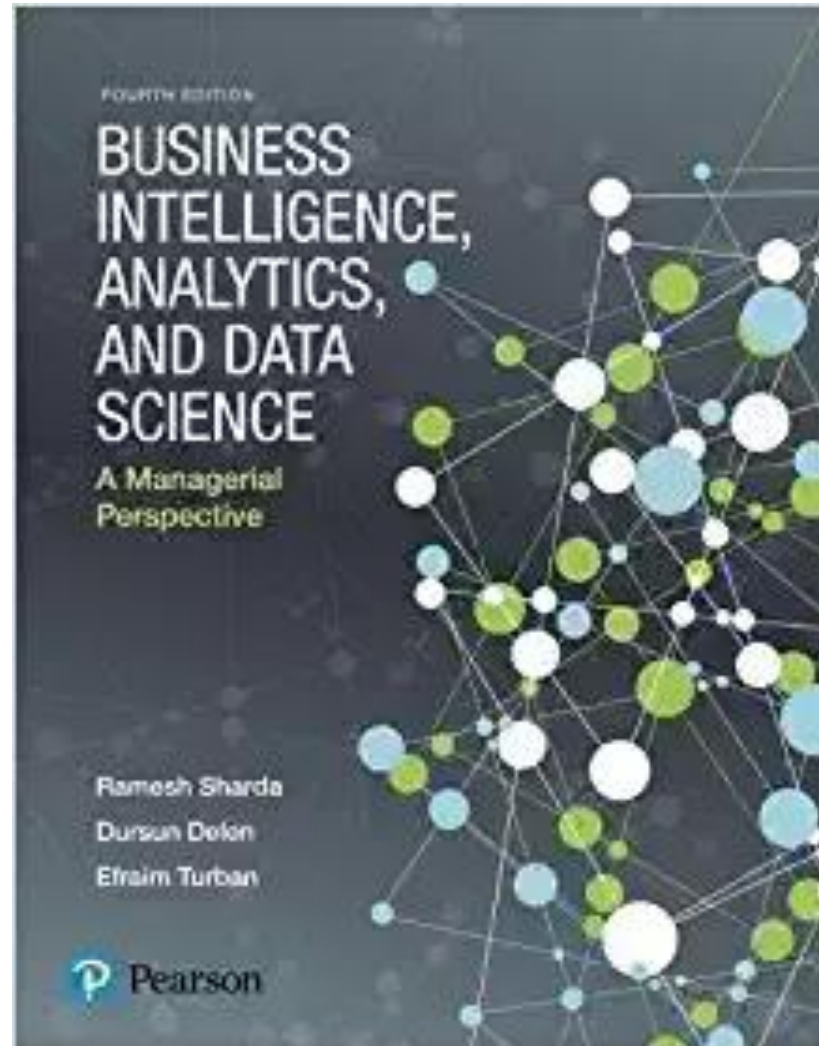
Decision Support and Business Intelligence Systems, Ninth Edition, Efraim Turban, Ramesh Sharda, Dursun Delen, Pearson, 2011.
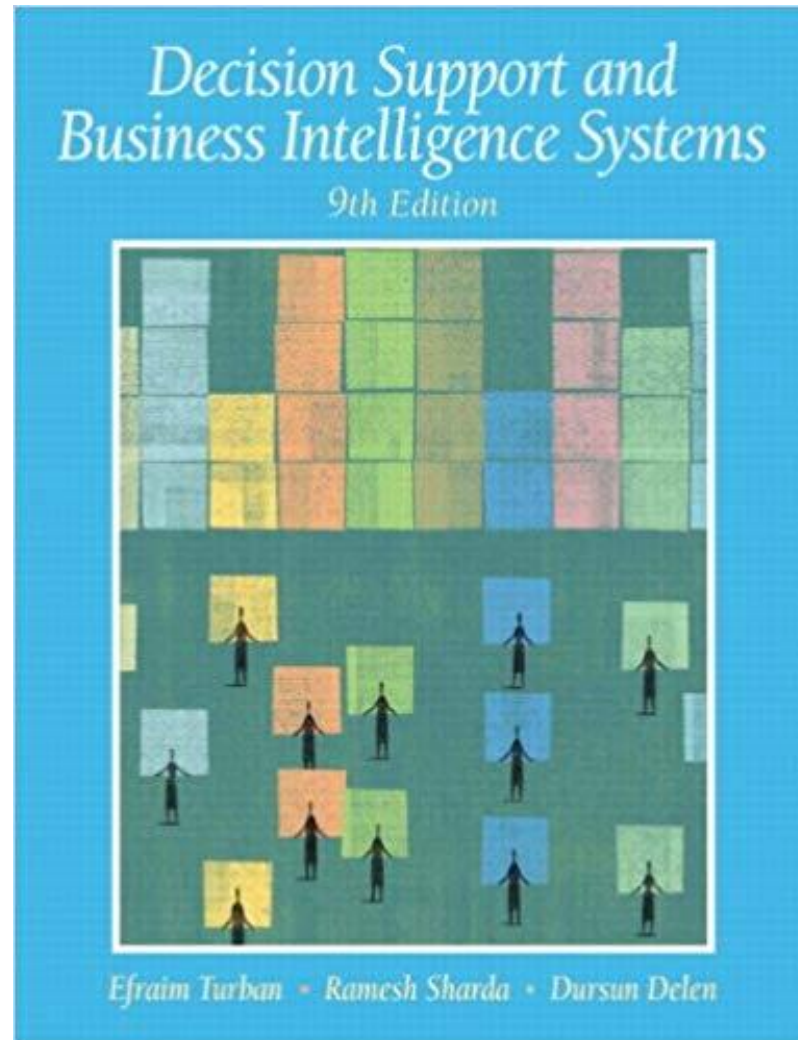
Hands-On Machine Learning with Scikit-Learn and TensorFlow: Concepts, Tools, and Techniques to Build Intelligent Systems, Aurélien Géron, O'Reilly Media, 2017
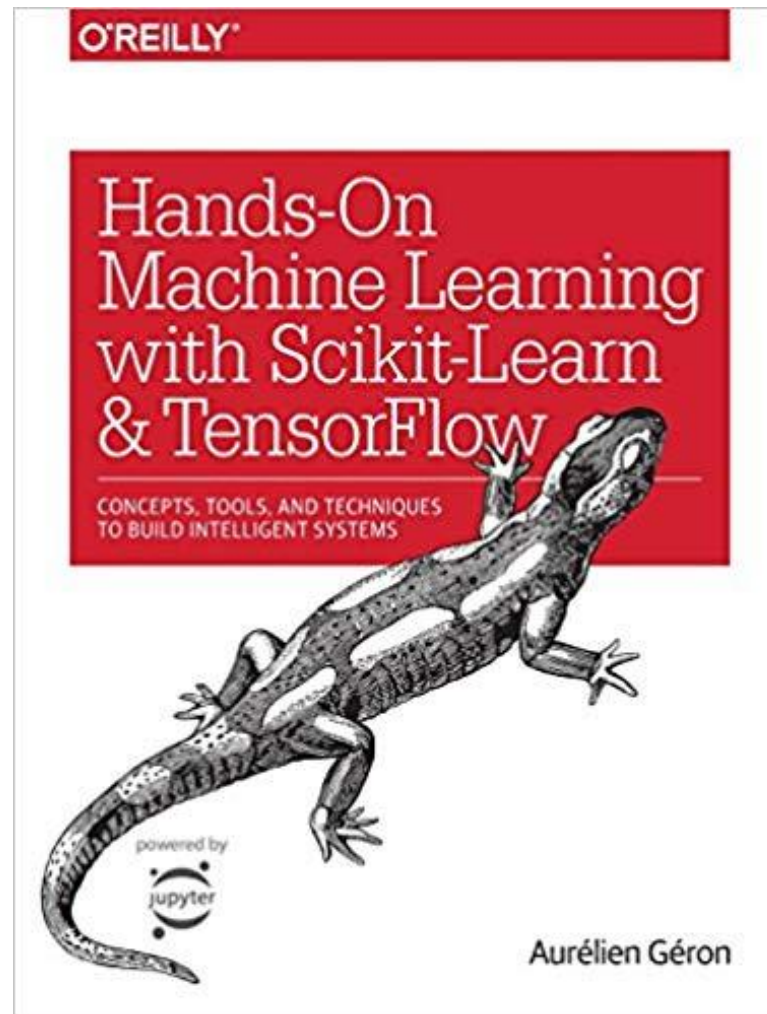
Practical Machine Learning with Python: A Problem-Solver's Guide to Building Real-World Intelligent Systems, Dipanjan Sarkar, Raghav Bali, Tushar Sharma, Apress, 2017.
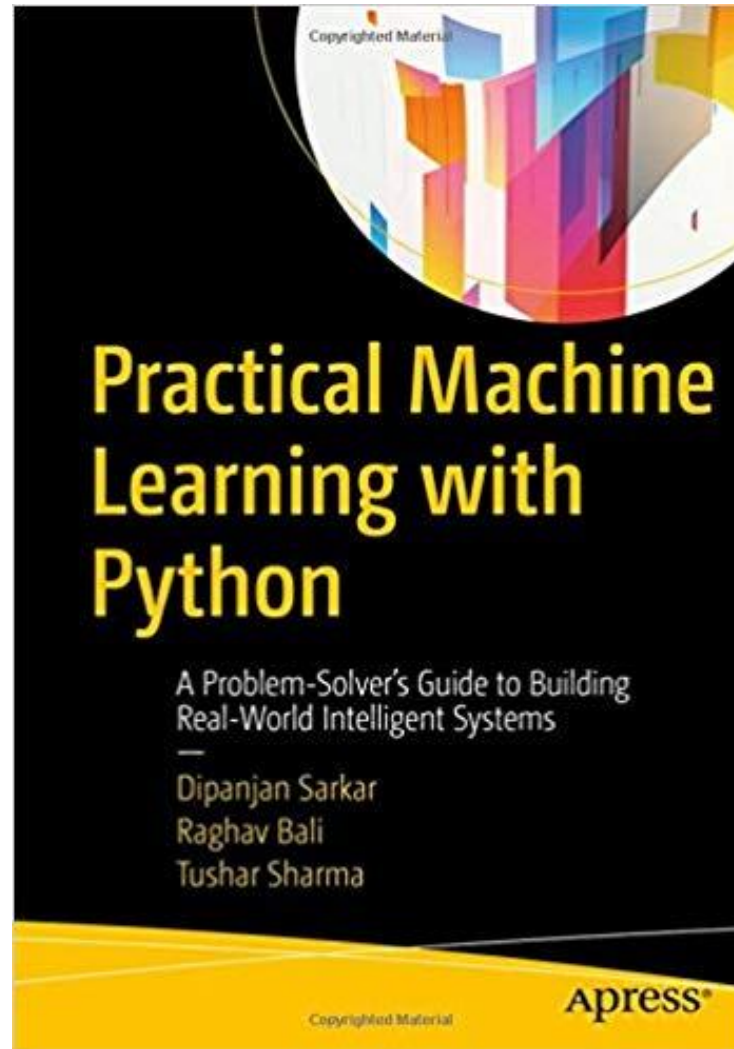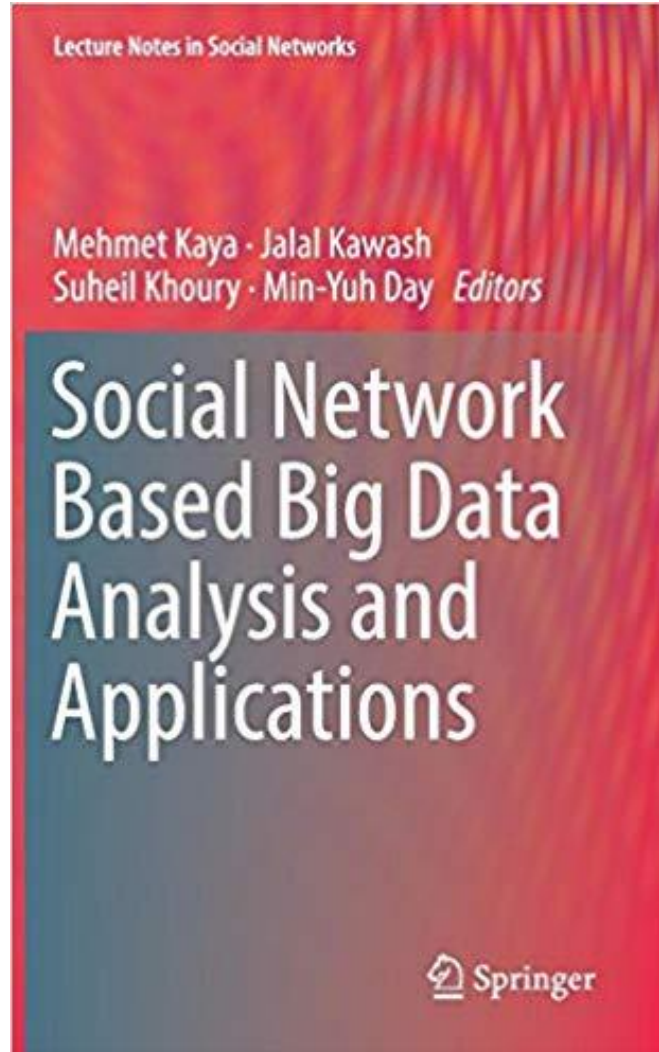
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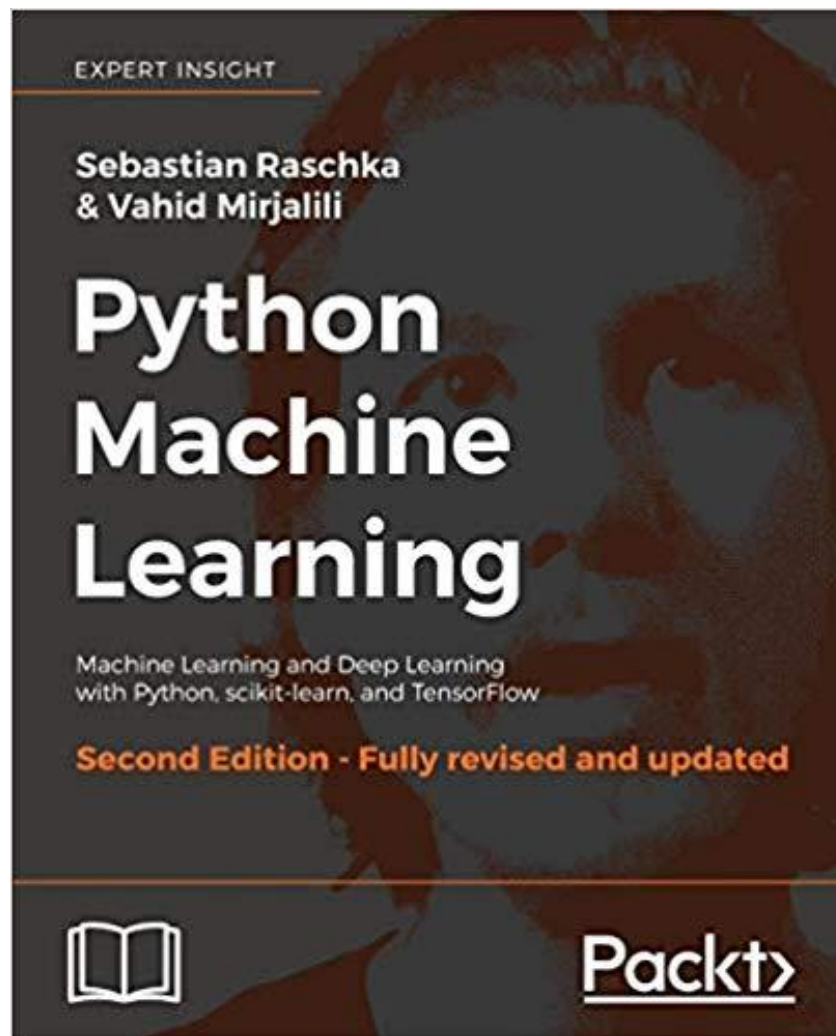
Big Data, Data Mining, and Machine Learning: Value Creation for Business Leaders and Practitioners,
Jared Dean,
Wiley, 2014.
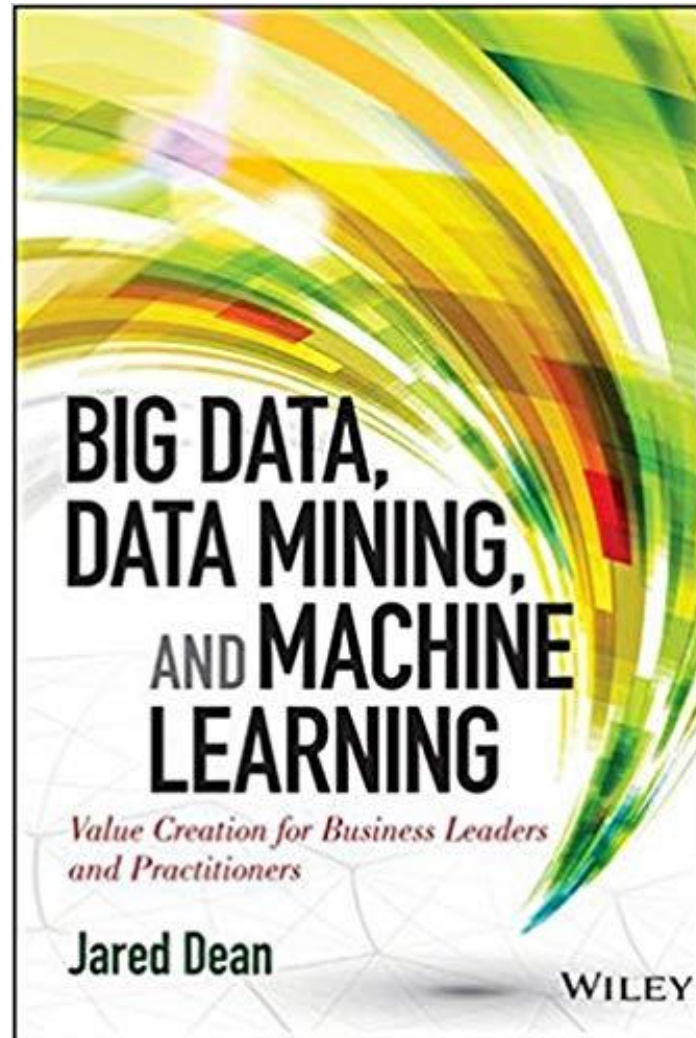
Social Network Based Big Data Analysis and Applications,
Lecture Notes in Social Networks,
Mehmet Kaya, Jalal Kawash, Suheil Khoury, Min-Yuh Day,
Springer International Publishing, 2018.

Google Colab

Evolution of Decision Support, Business Intelligence, and Analytics
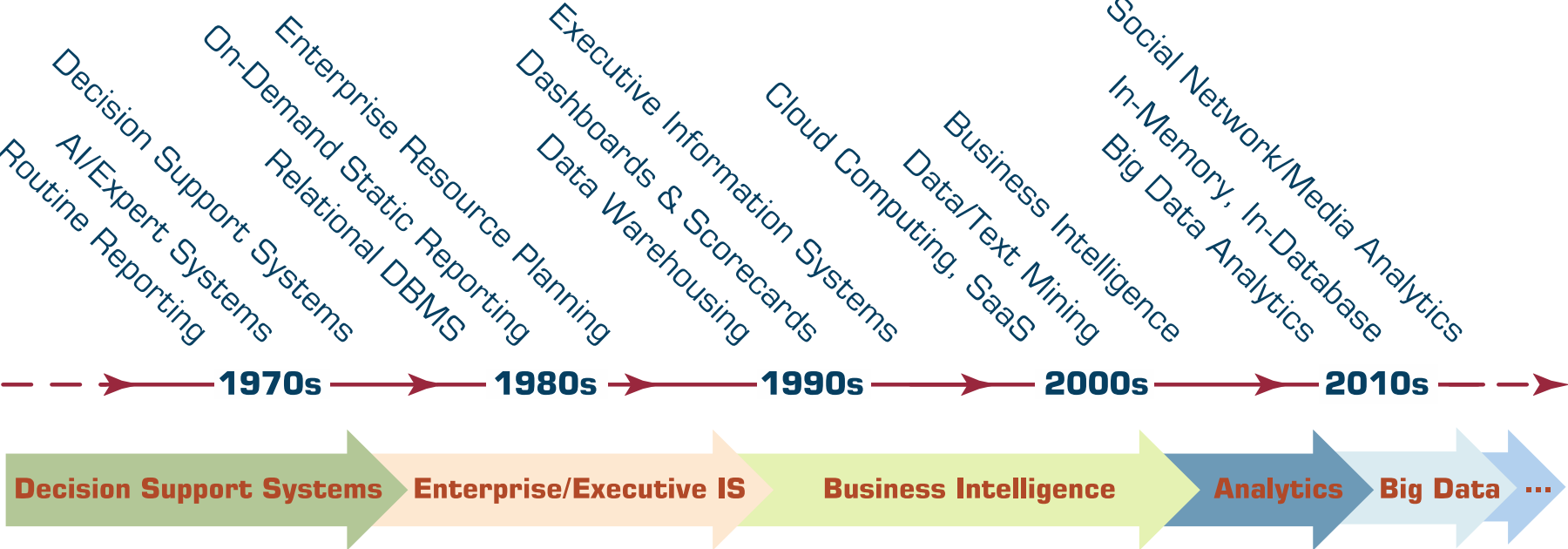
Source: Ramesh Sharda, Dursun Delen, and Efraim Turban (2017),
Business Intelligence, Analytics, and Data Science: A Managerial Perspective, 4th Edition, Pearson

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Evolution of Business Intelligence (BI)
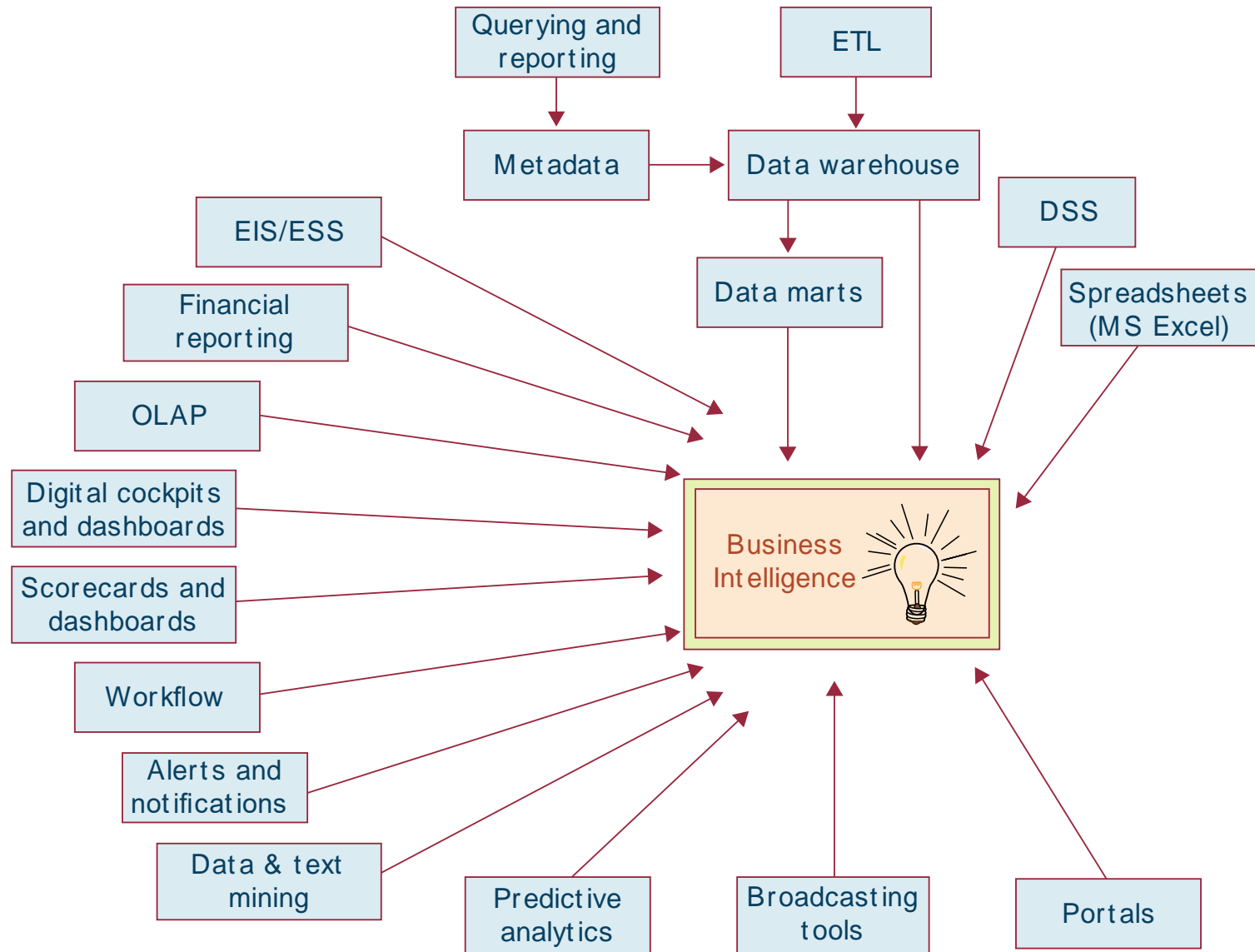
A High-Level Architecture of BI

Data Warehouse Environment   **Business Analytics Environment**   **Performance and Strategy**

Data Sources

Technical staff

Build the data warehouse

- Organizing
- Summarizing
- Standardizing

Data warehouse

Business users

Access

Manipulation, results

Managers/executives

BPM strategies

Future component: Intelligent systems

User interface

- Browser
- Portal
- Dashboard

Three Types of Analytics

Business Analytics

Descriptive	Predictive	Prescriptive
Questions		
What happened? What is happening?	What will happen? Why will it happen?	What should I do? Why should I do it?
Enablers		
✓ Business reporting ✓ Dashboards ✓ Scorecards ✓ Data warehousing	✓ Data mining ✓ Text mining ✓ Web/media mining ✓ Forecasting	✓ Optimization ✓ Simulation ✓ Decision modeling ✓ Expert systems
Outcomes		
Well-defined business problems and opportunities	**Accurate projections of future events and outcomes**	**Best possible business decisions and actions**

Source: Ramesh Sharda, Dursun Delen, and Efraim Turban (2017),
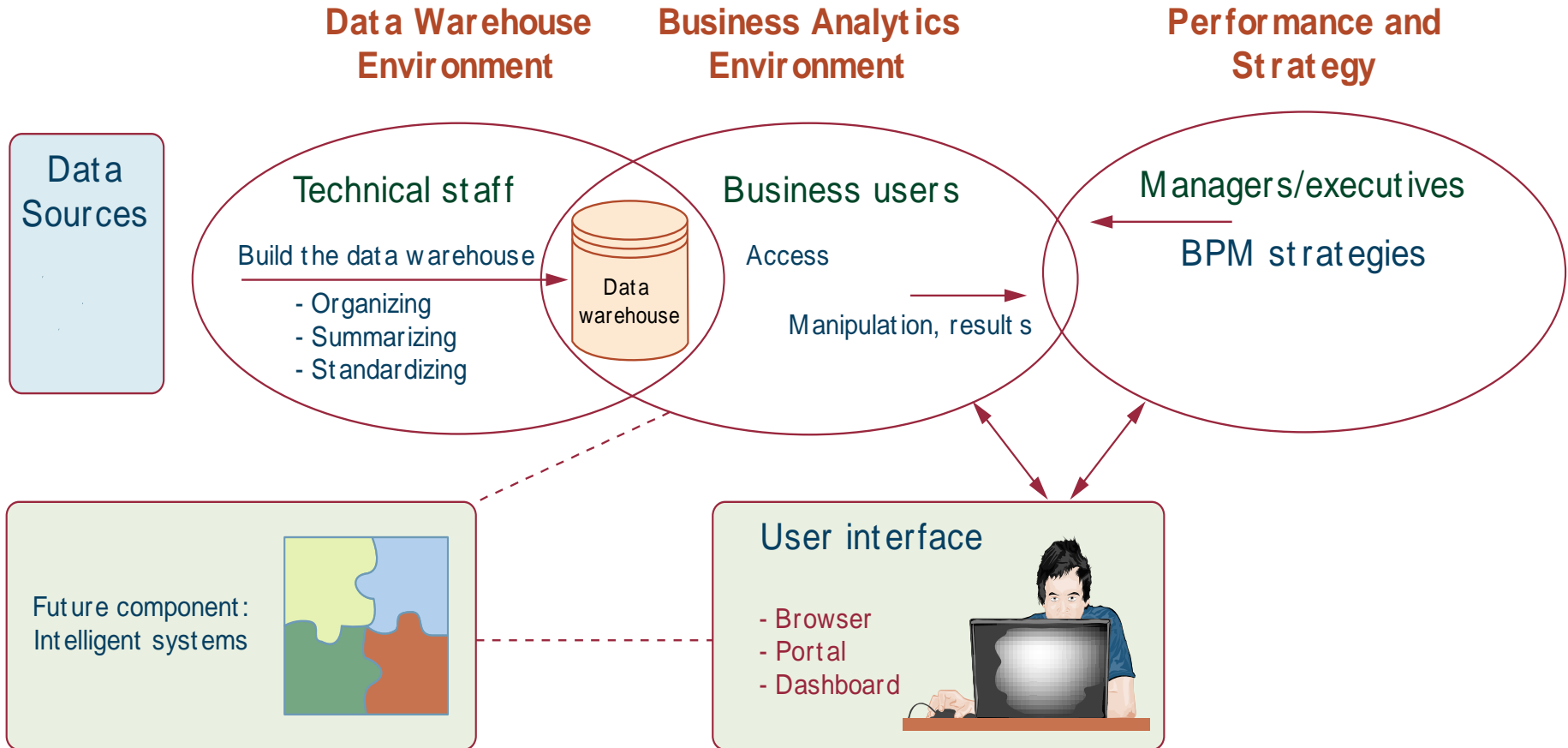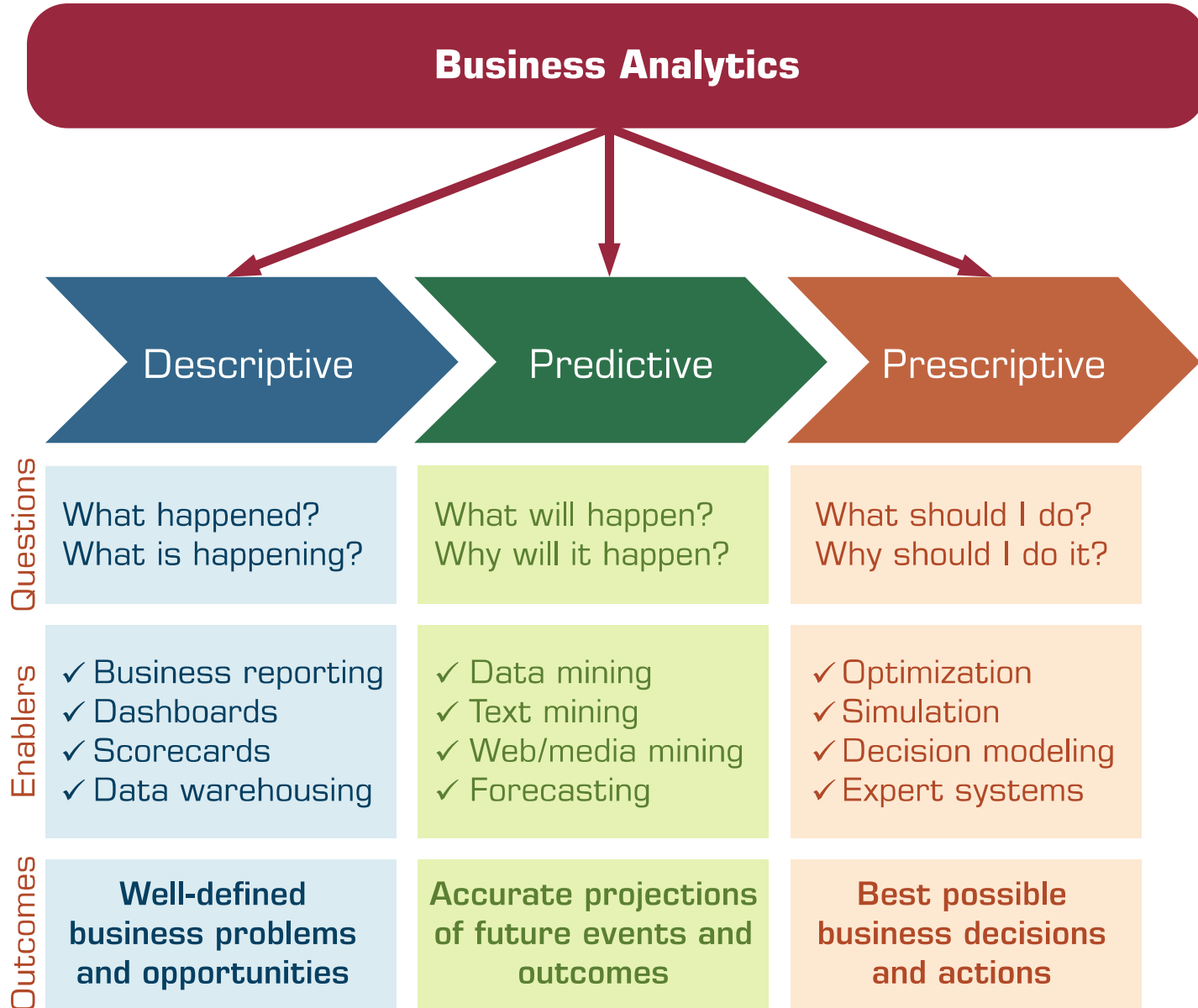Business Intelligence, Analytics, and Data Science: A Managerial Perspective, 4th Edition, Pearson

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Analytics Ecosystem

Job Titles of Analytics

A Data to Knowledge Continuum
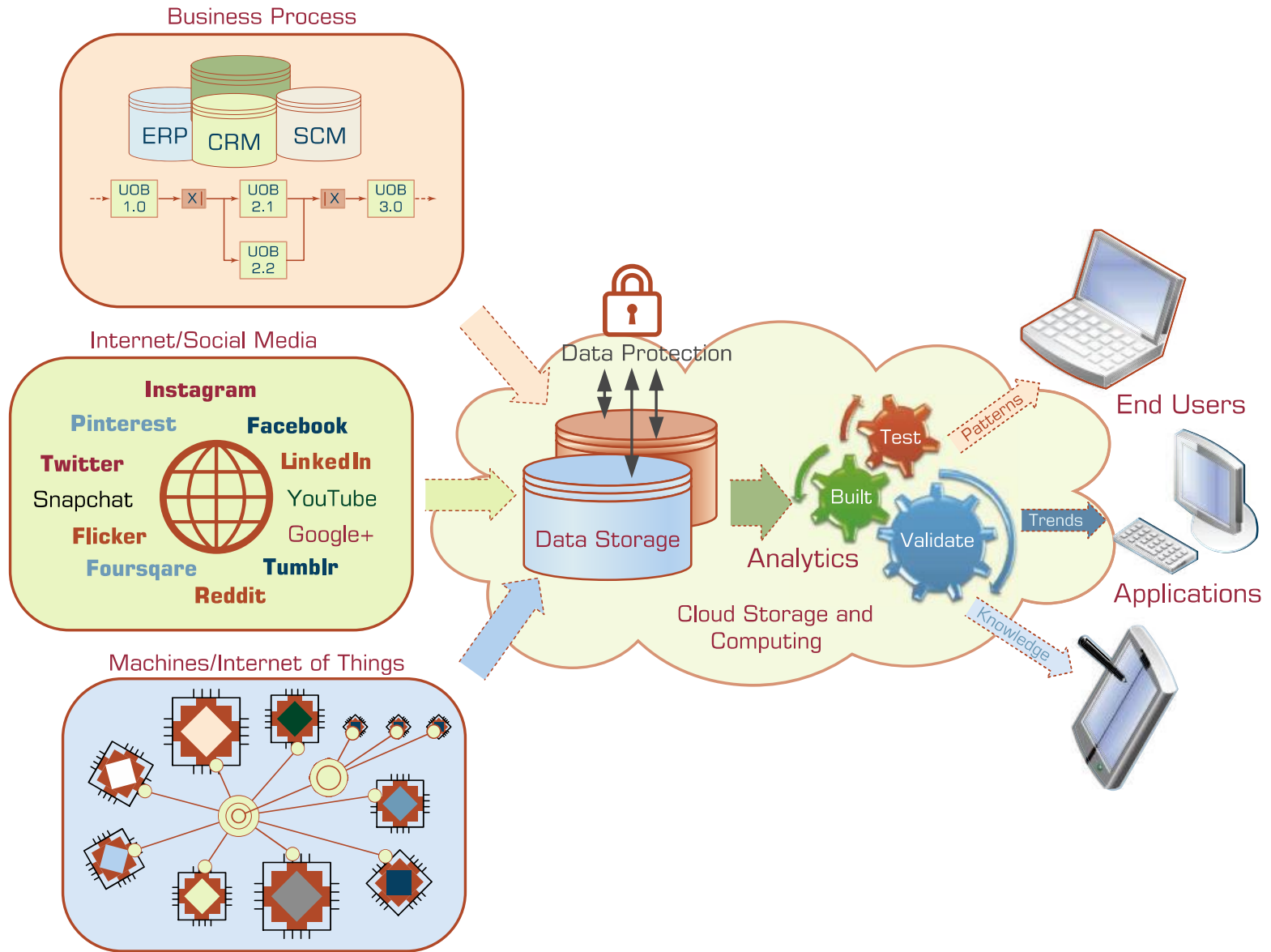
Business Intelligence (BI) Infrastructure
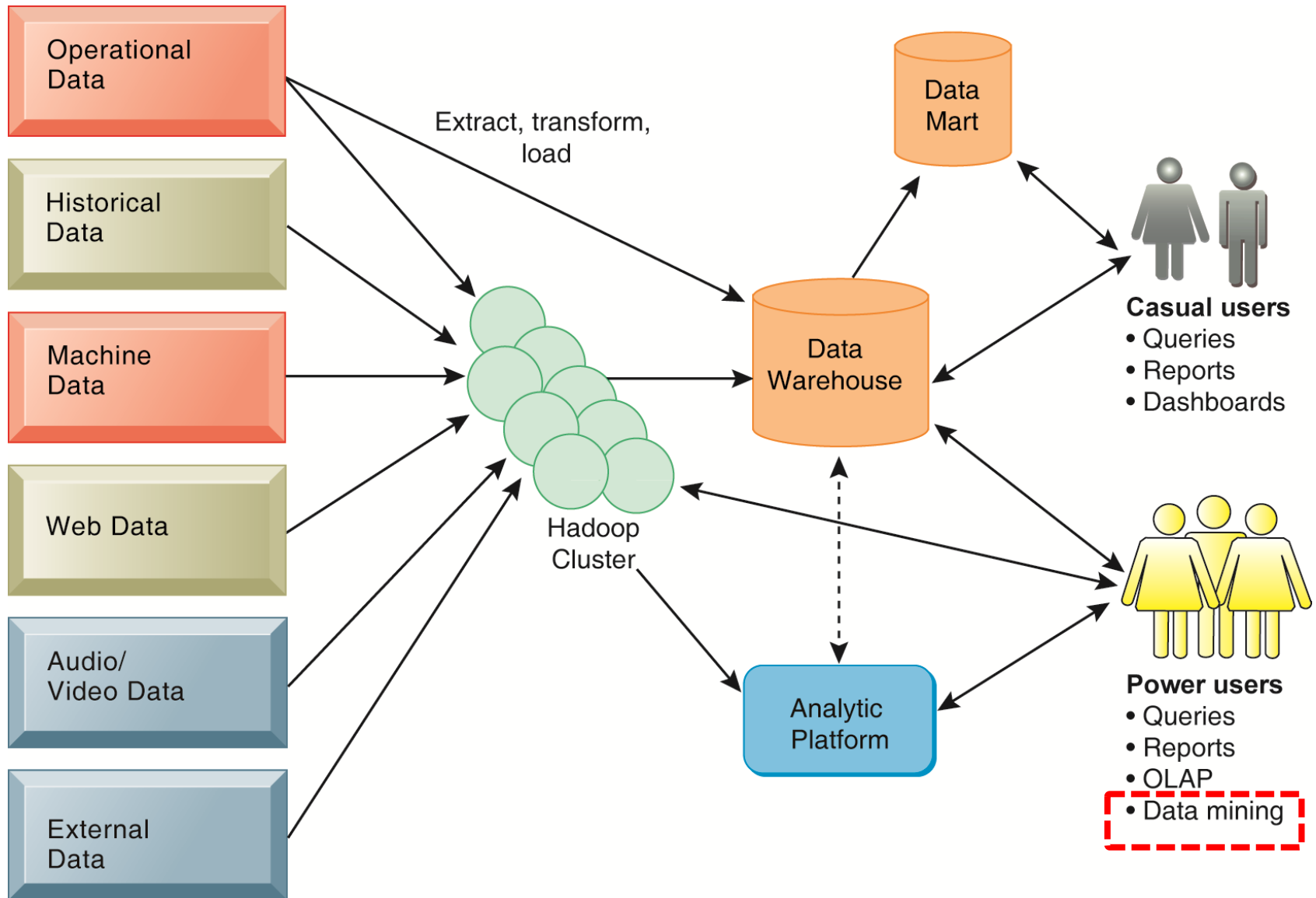
Business Intelligence and Data Mining

Increasing potential to support business decisions

Decision Making

Data Presentation
Visualization Techniques

Data Mining
Information Discovery

Data Exploration
Statistical Summary, Querying, and Reporting

Data Preprocessing/Integration, Data Warehouses

Data Sources
Paper, Files, Web documents, Scientific experiments, Database Systems

End User

Business Analyst

Data Analyst

DBA

Business Insights with Social Analytics

Analyzing the Social Web:
Social Network Analysis

Jennifer Golbeck (2013), Analyzing the Social Web, Morgan Kaufmann

AI Challenge Champion

The 14th NTCIR (2018 - 2019)

NTCIR (NII Testbeds and Community for Information access Research) Project

NTCIR

▸Japanese

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🏠 NTCIR Home > NTCIR-14

NTCIR 14

- NTCIR-14 Conference
- NEWS
- NTCIR-14 Aims
- Call for Task Proposals
- How to Participate
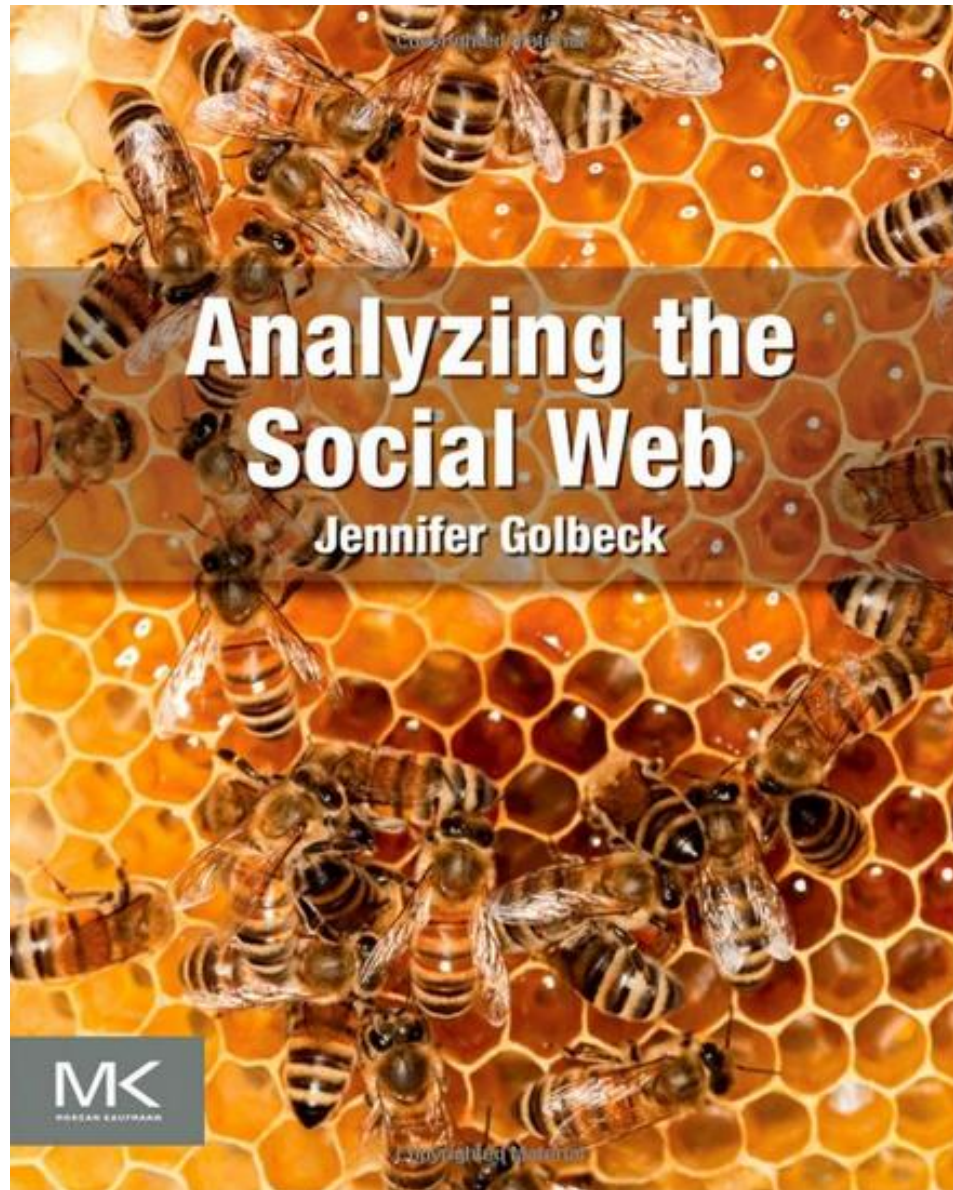- Task Participation
- Task Overview/Call for Task Participation
- User Agreement Forms
- Organization
- Important Dates
- Contact Us

NTCIR 13

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NTCIR-14

The 14th NTCIR (2018 - 2019)
Evaluation of Information Access Technologies

January 2018 - June 2019

What's New

new February 1, 2018: Call for participation to the NTCIR-14 Kick-Off Event released.
new February 1, 2018: Call for participation to the NTCIR-14 QALab-PoliInfo Kick-Off Event released.

December 5, 2017: The NTCIR-14 Task Selection Committee has selected the following six Tasks. Lifelig-3, OpenLiveQ-2, QA Lab-4, STC-3, WWW-2, CENTRE.

August 23, 2017: NTCIR-14 Call for Task Proposals released.(Closed.)

new **About Proceedings**

After the NTCIR-14 conference, a post-proceedings of rivised selected papers will be published in the Springer Lecture Notes on Computer Science (LNCS) series.

Lecture Notes in Computer Science

http://research.nii.ac.jp/ntcir/ntcir-14/index.html

NTCIR-14
Short Text Conversation Task (STC-3)

NTCIR-14 Short Text Conversation Task (STC-3)

- NTCIR
- Twitter: @ntcirstc
- STC-3@NTCIR-14

Welcome to the top page of STC-3@NTCIR-14!
STC-3 offers three subtasks:

- Chinese Emotional Conversation Generation (CECG) Subtask
- Dialogue Quality (DQ) Subtask (for Chinese and English)
- Nugget Detection (ND) Subtask (for Chinese and English)

Key dates for DQ and ND Subtasks

Feb-Mar 2018Crawling Chinese test data from Weibo

Oct 2017-Jan 2018	Training data translation into English
Apr-Jun, 2018	Test data translation into English
Jul-Aug 2018	Training/test data annotation
Aug 31, 2018	STC-3 task registrations due (CECG, DQ, ND)
Sep 1, 2018	Training data with annotations released
Nov 1, 2018	Test data released
Nov 30, 2018	Run submissions due
Dec 20, 2018	Results and draft overview released to participants
Feb 1, 2019	Participant papers due
Mar 1, 2019	Acceptance notification
Mar 20, 2019	All camera-ready papers due
Jun 2019	NTCIR-14 Conference@NII

NTCIR-14 STC-3
Short Text Conversation Task (STC-3)
Chinese Emotional Conversation Generation (CECG) Subtask

NTCIR

Home

Task Definition

Dataset Description

Evaluation Metric

Time Schedule

Copy Rights & Contacts

Call for Participation

In recent years, there has been a rising tendency in AI research to enhance Human-Computer Interaction by humanizing machines. However, to create a robot capable of acting and talking with a user at the human level requires the robot to understand human cognitive behaviors, while one of the most important human behaviors is expressing and understanding emotions and affects. As a vital part of human intelligence, emotional intelligence is defined as the ability to perceive, integrate, understand, and regulate emotions. Though a variety of models have been proposed for conversation generation from large-scale social data, it is still quite challenging (and yet to be addressed) to generate emotional responses.

In this challenge, participants are expected to generate Chinese responses that are not only appropriate in content but also adequate in emotion, which is quite important for building an empathic chatting machine. For instance, if user says "My cat died yesterday", the most appropriate response may be "It's so sad, so sorry to hear that" to express sadness, but also could be "Bad things always happen, I hope you will be happy soon" to express comfort.

Previous Evaluation Challenge at NLPCC 2017

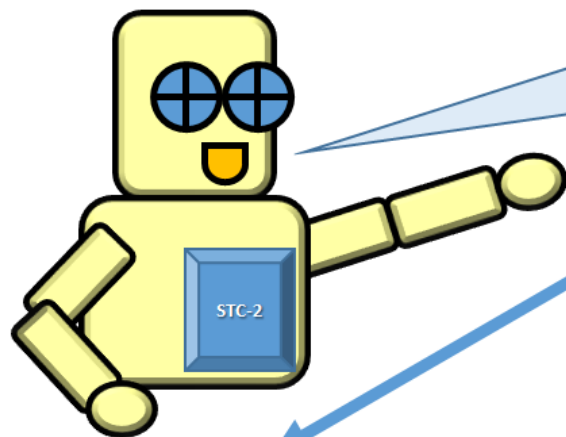Overview of the NLPCC 2017 Shared Task: Emotion Generation Challenge

Links

NTCIR NTCIR-14

STC-3 NTCIR-14 STC-3

NLPCC NLPCC 2017

AI lab. of Computer Science, Tsinghua University, Beijing 100084, China.

http://www.aihuang.org/p/challenge.html

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Short Text Conversation (NTCIR-13 STC2) Retrieval-based

retrieval-based method

Given a new post, can a coherent and useful comment be returned by searching a post-comment repository?

STC-2

post

Search and reuse

post-comment repository

post	comment
	comment

post	comment
	comment

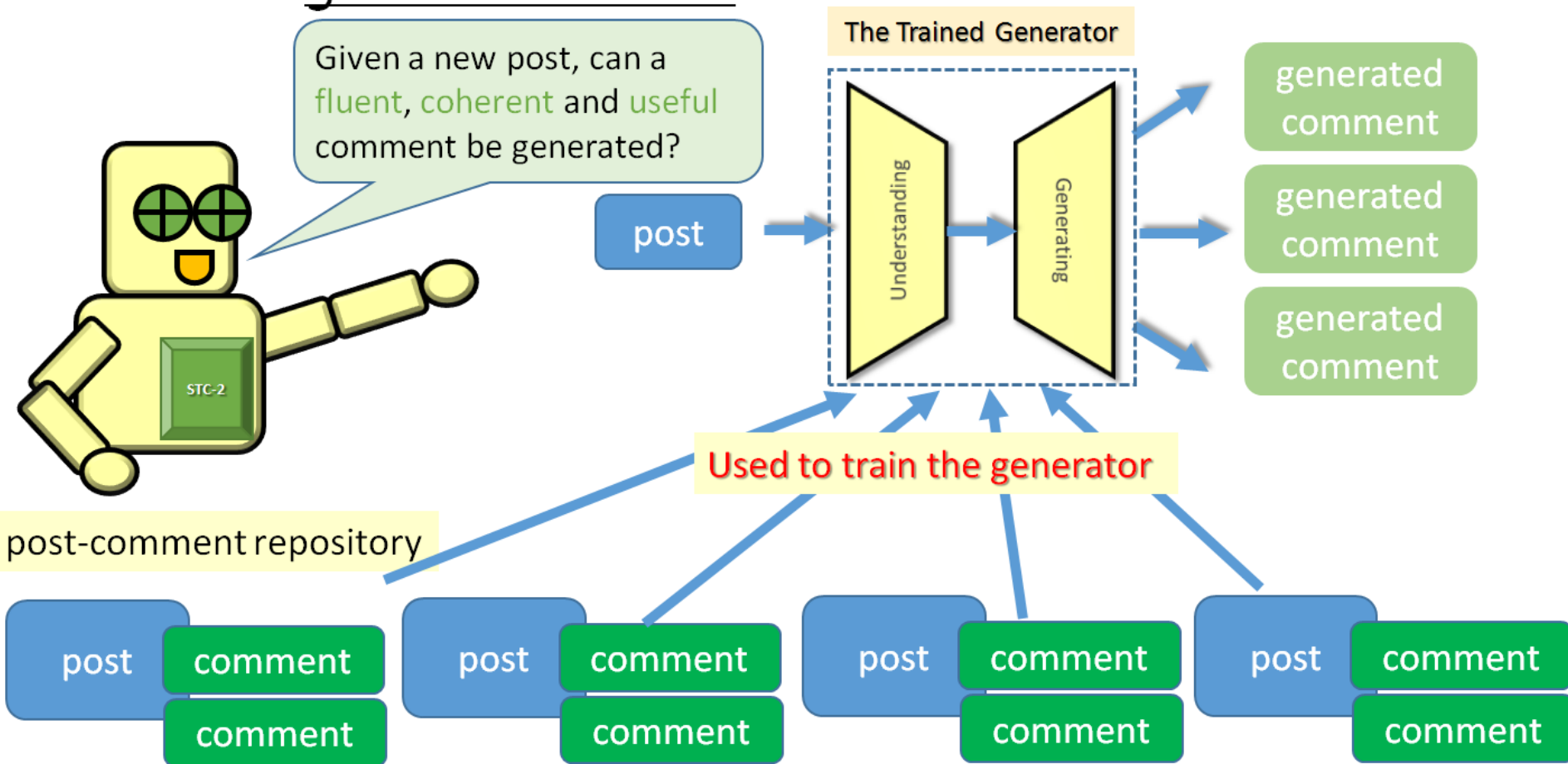| post	comment
	comment

post	comment
	comment

Short Text Conversation (NTCIR-13 STC2) Generation-based

Summary

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  - Future Trends in Analytics.

Contact Information

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