

AI 機器人與任務導向對話系統

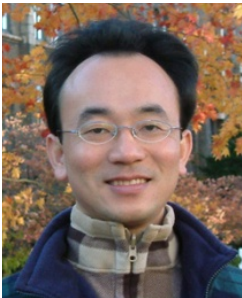
AI Robot and Task-Oriented Dialogue Systems

Host: Prof. I-Shyan Hwang
Yuan Ze University

Time: 19:00-20:30, 2020/05/22 (Friday)

Place: 1401B, Building 1, Yuan Ze University (YZU)

Address: 135 Yuan-Tung Road, Chung-Li, Taiwan



Min-Yuh Day

Associate Professor

Dept. of Information Management,
Tamkang University

<http://mail.tku.edu.tw/myday/>

2020-05-22





Min-Yuh Day, Ph.D.

Associate Professor, Information Management, TKU

Visiting Scholar, IIS, Academia Sinica

Ph.D., Information Management, NTU

Publications Co-Chairs, IEEE/ACM International Conference on Advances in Social Networks Analysis and Mining (ASONAM 2013-)

Program Co-Chair, IEEE International Workshop on Empirical Methods for Recognizing Inference in Text (IEEE EM-RITE 2012-)

Publications Chair, The IEEE International Conference on Information Reuse and Integration (IEEE IRI)



Outline

- AI機器人在問答與對話系統的演進
- 任務導向對話系統自然語言核心技術
- 任務導向對話系統商業應用案例分析

AIWISFIN

AI Conversational Robo-Advisor (人工智慧對話式理財機器人)

First Place, InnoServe Awards 2018



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InnoServe資服創新競賽粉絲團 shared a post.
November 28 at 2:43 PM · 🌐

《#InnoServe競賽得獎作品系列報導七》
理財💰方式百百種卻不知道該從何著手嗎？
來看金融結合AI如何讓投資變得更簡單。

AIWISFIN

28,112 Views

經濟部工業局
November 28 at 11:37 AM · 🌐

假如有一筆錢，您知道要怎麼投資嗎？👉

本作品「AIWISFIN」使用 #深度學習 預測股價漲跌📈、
配置投資組合，分析👤客戶需求，
提供 #客製化 投資建議📄與 #智慧對話🗣️，
讓年輕投資者使用更方便！

- 🏆得獎作品：AIWISFIN 人工智慧對話式理財機器人
- 🏆獎項：玉山銀行金融科技趨勢應用組第1名
- 🏆得獎學校：淡江大學 (資訊管理學系)
- 🏆指導老師：戴敏育老師
- 🏆得獎團隊：陳元致、鄧旭廷、王慶宇、邱少文
- 🏆影片連結：<https://ppt.cc/fyc3sx>

<https://www.youtube.com/watch?v=sEhmyoTXmGk>

2018 The 23th International ICT Innovative Services Awards (InnoServe Awards 2018)



- Annual ICT application competition held for university and college students
- The largest and the most significant contest in Taiwan.
- More than **ten thousand teachers and students** from over **one hundred universities and colleges** have participated in the Contest.

2018 International ICT Innovative Services Awards (InnoServe Awards 2018)

(2018第23屆大專校院資訊應用服務創新競賽)

第23屆 大專校院
2018 資訊應用服務創新競賽
International ICT Innovative Services Awards 2018

創意噴發!

InnoServe Awards

總獎金 > 200 萬

■ 報名日期: 2018/10/2(二)~2018/10/9(二)pm6點截止

■ 參賽對象: 大專校院學生、碩博士生及高中職學生

■ 決賽時間: 2018/11/3(六)

■ 決賽地點: 國立臺灣大學綜合體育館

- ☰ 最新消息 ▾
- 活動訊息
- 媒體轉載
- 🌀 競賽緣起
- 📄 競賽辦法 ▾
- 👤 競賽報名
- 🗨️ 活動成果 ▾
- 🔗 產學媒合 ▾
- 🔗 媒合
- 📞 聯絡我們

🗨️ 榮譽榜

屆別 23 ▾ [查詢](#)

第23屆

顯示 30 ▾ 筆資料 表格內全文檢索:

組別	名次	組別編號	學校名稱	專題名稱	指導教授	學生
資訊應用組一	第一名	IP1-06	淡江大學	▶ AIWISFIN 人工智慧對話式理財機器人	戴敏育老師	陳元致、鄧旭廷、王慶宇、邱少文
玉山銀行金融科技趨勢應用組	第一名	E.SUN FINTECH-01	淡江大學	▶ AIWISFIN 人工智慧對話式理財機器人	戴敏育老師	陳元致、鄧旭廷、王慶宇、邱少文

<https://innoserve.tca.org.tw/award.aspx>



IMTKU

Emotional Dialogue System

for

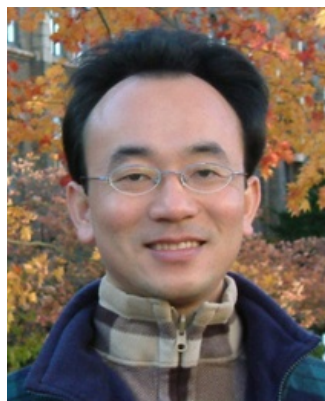
Short Text Conversation

at

NTCIR-14 STC-3 (CECG) Task

IMTKU Textual Entailment System for Recognizing Inference in Text at **NTCIR-9** RITE

Department of Information Management
Tamkang University, Taiwan



Min-Yuh Day

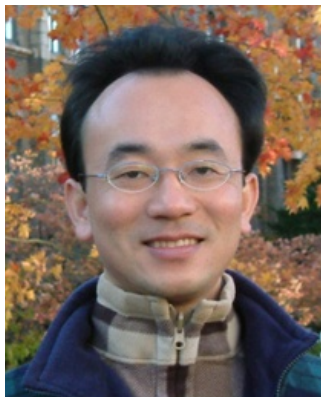


Chun Tu

myday@mail.tku.edu.tw

IMTKU Textual Entailment System for Recognizing Inference in Text at **NTCIR-10** RITE-2

Department of Information Management
Tamkang University, Taiwan



Min-Yuh Day



Chun Tu



Hou-Cheng Vong



Shih-Wei Wu



Shih-Jhen Huang

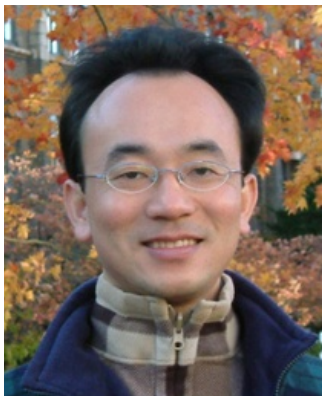
myday@mail.tku.edu.tw

IMTKU Textual Entailment System for Recognizing Inference in Text at **NTCIR-11** RITE-VAL

Tamkang University

淡江大學

2014



Min-Yuh Day



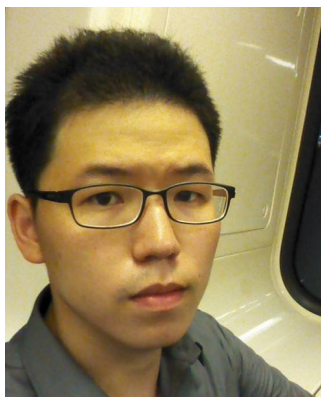
Ya-Jung Wang



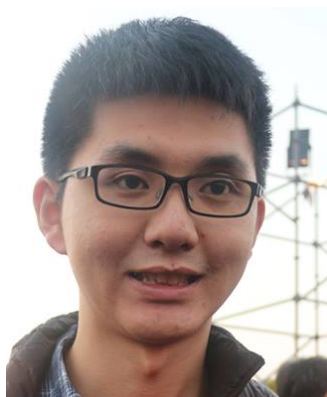
Che-Wei Hsu



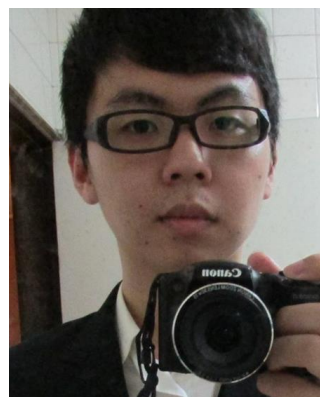
En-Chun Tu



Huai-Wen Hsu



Yu-An Lin



Shang-Yu Wu



Yu-Hsuan Tai



Cheng-Chia Tsai



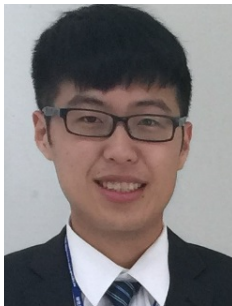
IMTKU Question Answering System for World History Exams at **NTCIR-12** QA Lab2

Department of Information Management
Tamkang University, Taiwan

Sagacity Technology



Min-Yuh Day



Cheng-Chia Tsai



Wei-Chun Chung



Hsiu-Yuan Chang



Tzu-Jui Sun



Yuan-Jie Tsai



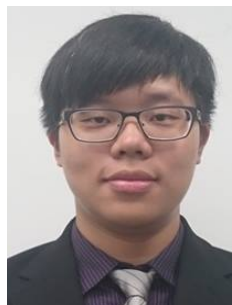
Jin-Kun Lin



Cheng-Hung Lee



Yu-Ming Guo



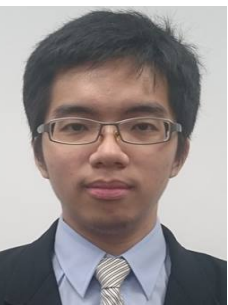
Yue-Da Lin



Wei-Ming Chen



Yun-Da Tsai



Cheng-Jhih Han



Yi-Jing Lin



Yi-Heng Chiang



Ching-Yuan Chien

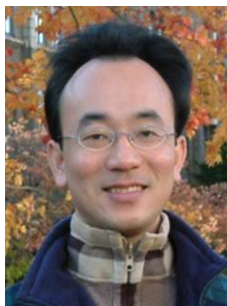
myday@mail.tku.edu.tw

NTCIR-12 Conference, June 7-10, 2016, Tokyo, Japan



IMTKU Question Answering System for World History Exams at **NTCIR-13** QALab-3

Department of Information Management
Tamkang University, Taiwan



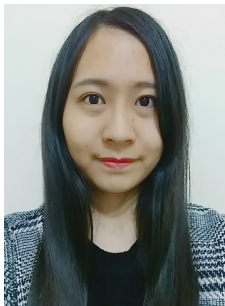
Min-Yuh Day



Chao-Yu Chen



Wanchu Huang



Shi-Ya Zheng



I-Hsuan Huang



Tz-Rung Chen



Min-Chun Kuo



Yue-Da Lin



Yi-Jing Lin

myday@mail.tku.edu.tw



IMTKU Emotional Dialogue System for Short Text Conversation at **NTCIR-14** STC-3 (CECG) Task

Department of Information Management
Tamkang University, Taiwan



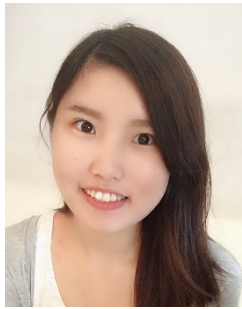
Min-Yuh Day



Chi-Sheng Hung



Yi-Jun Xie



Jhih-Yi Chen



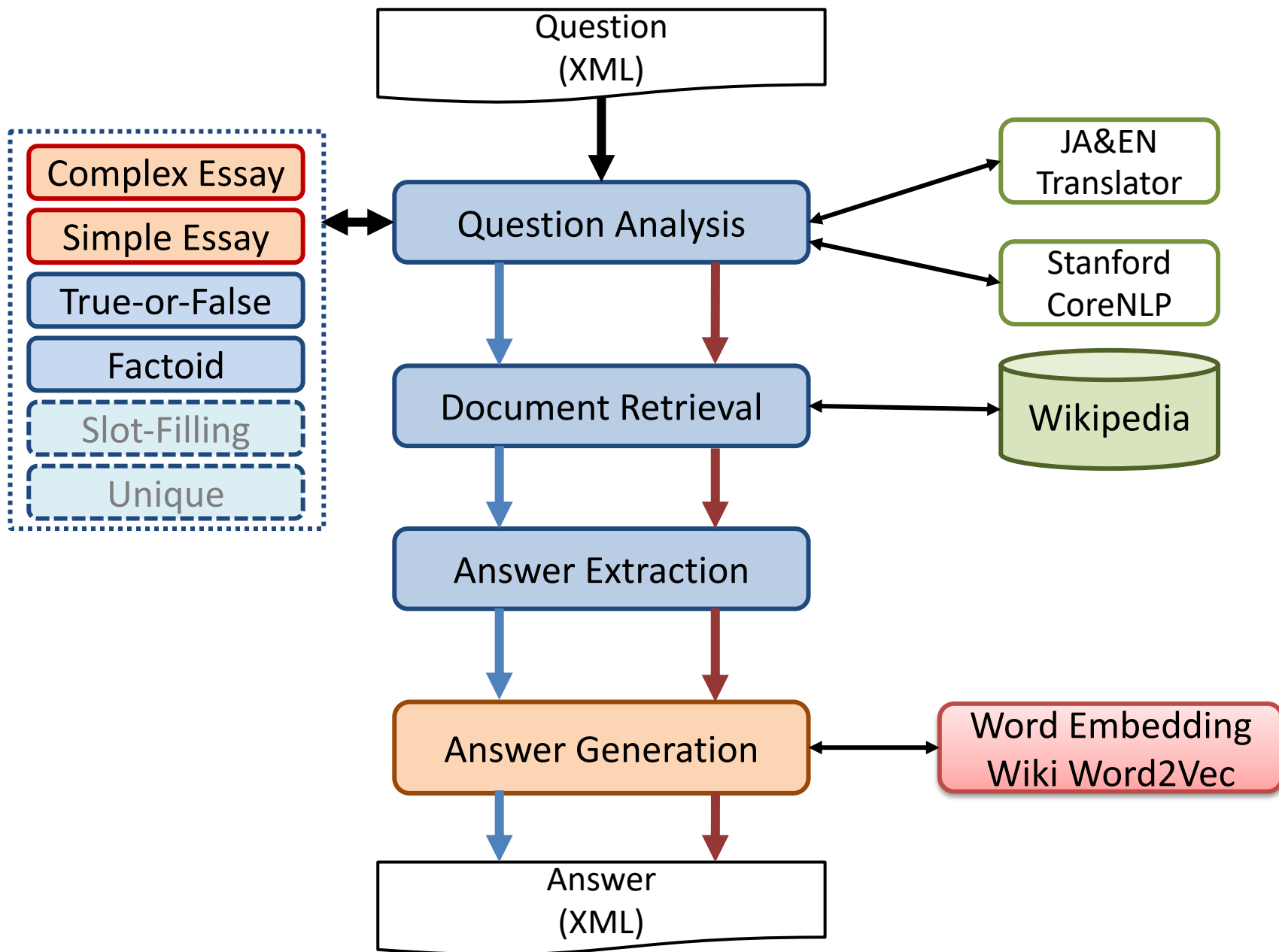
Yu-Ling Kuo



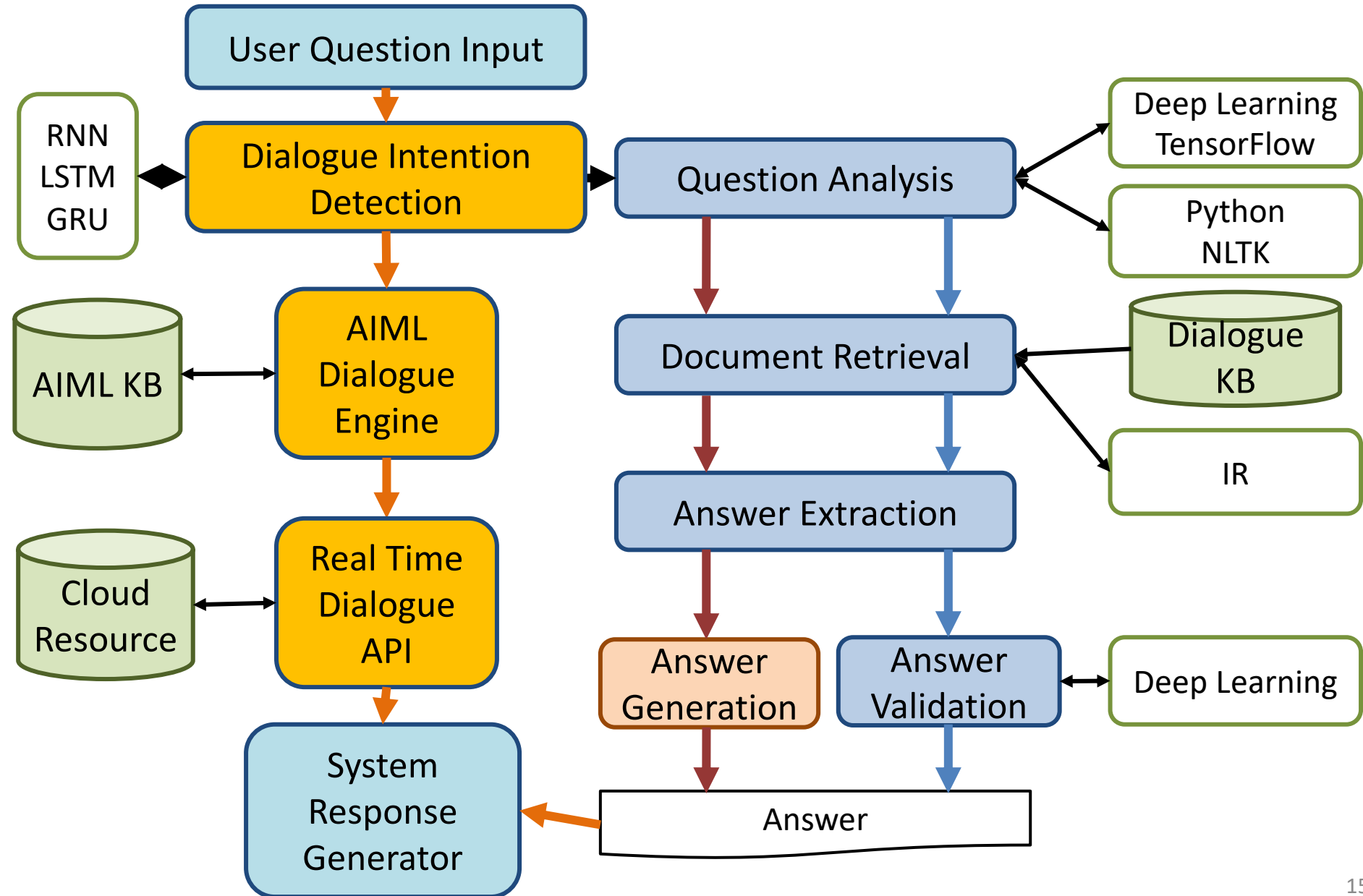
Jian-Ting Lin

myday@mail.tku.edu.tw

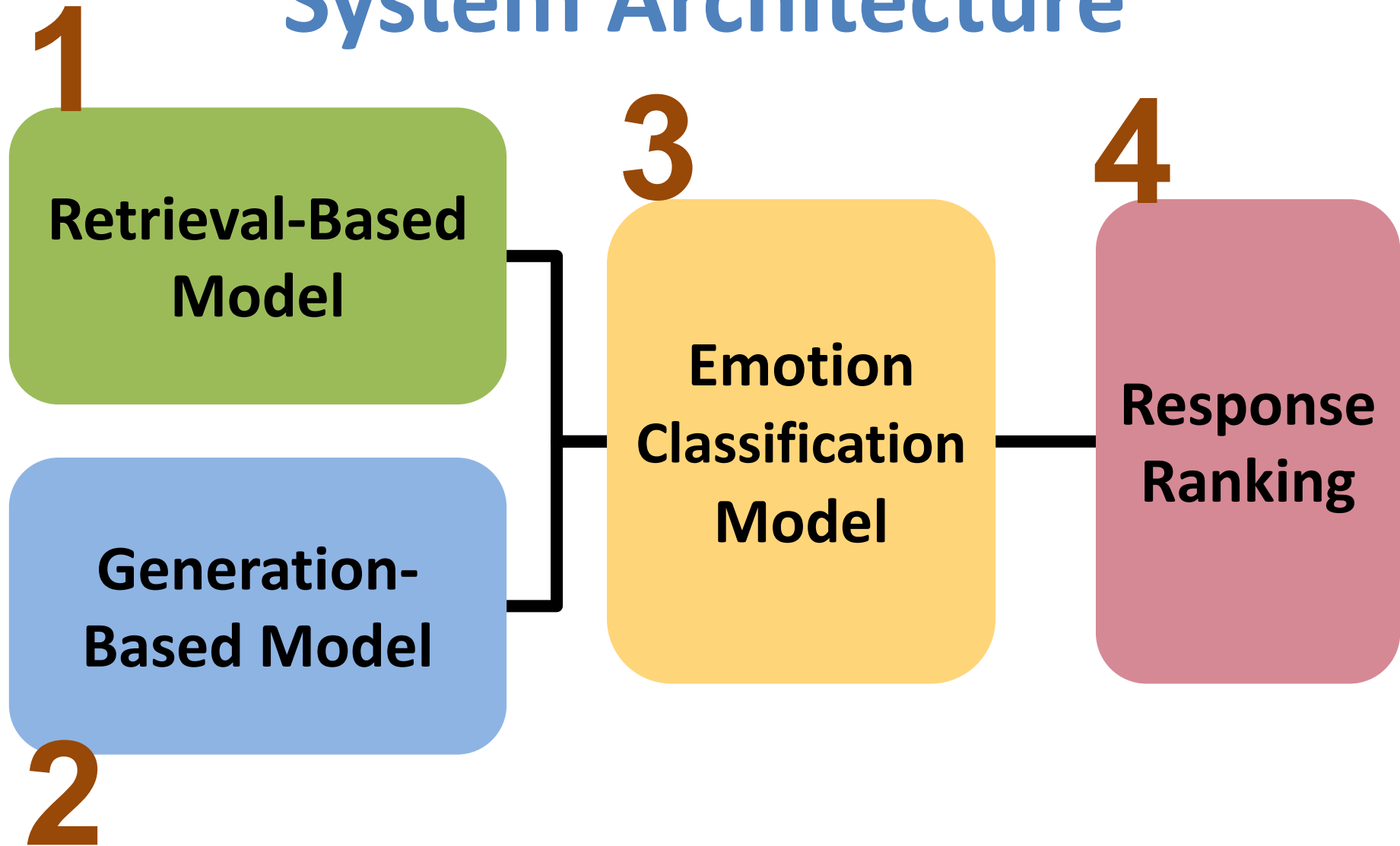
IMTKU System Architecture for NTCIR-13 QALab-3



System Architecture of Intelligent Dialogue and Question Answering System



IMTKU Emotional Dialogue System Architecture

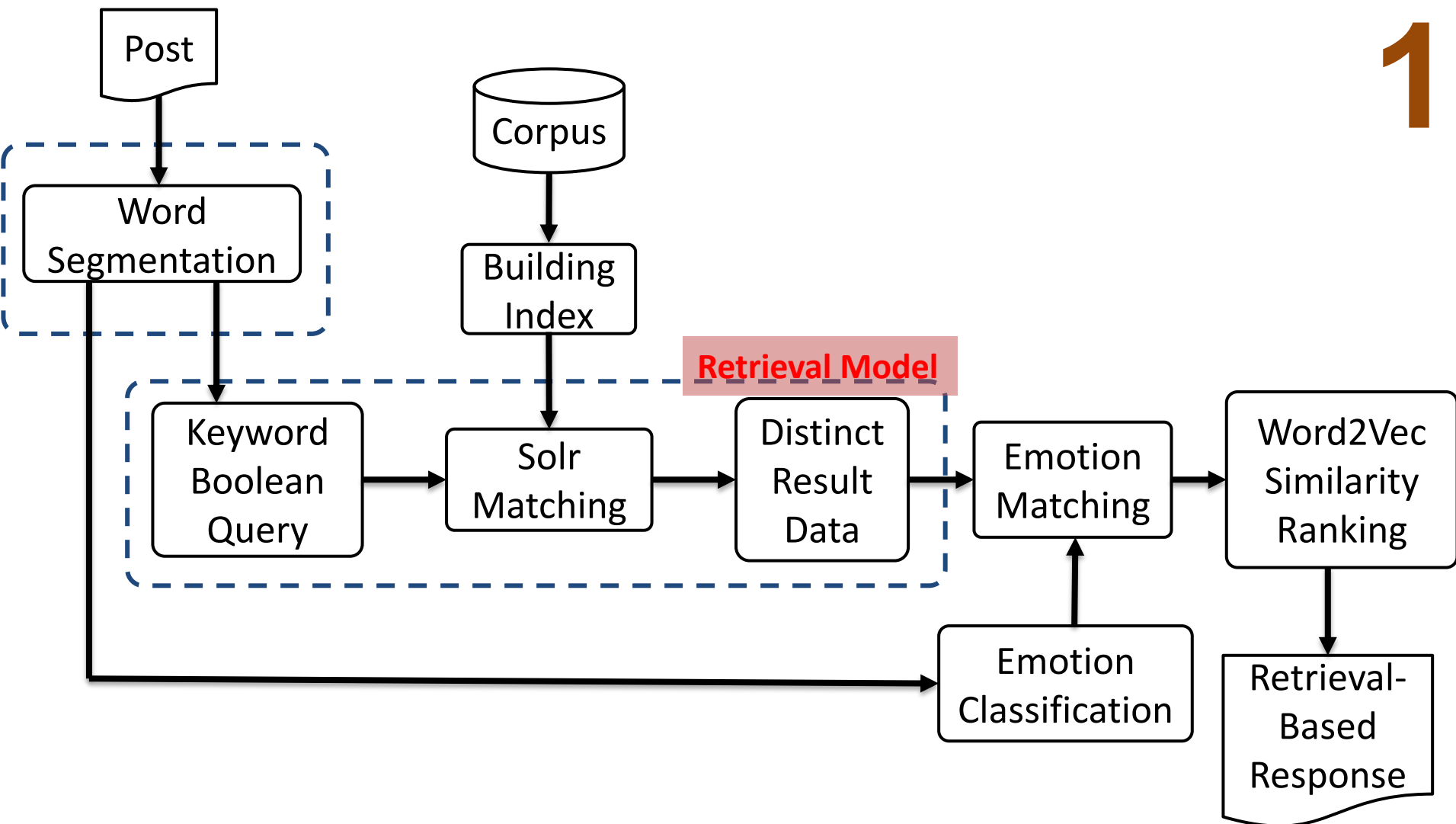




The system architecture of IMTKU retrieval-based model for NTCIR-14 STC-3

Retrieval-Based Model

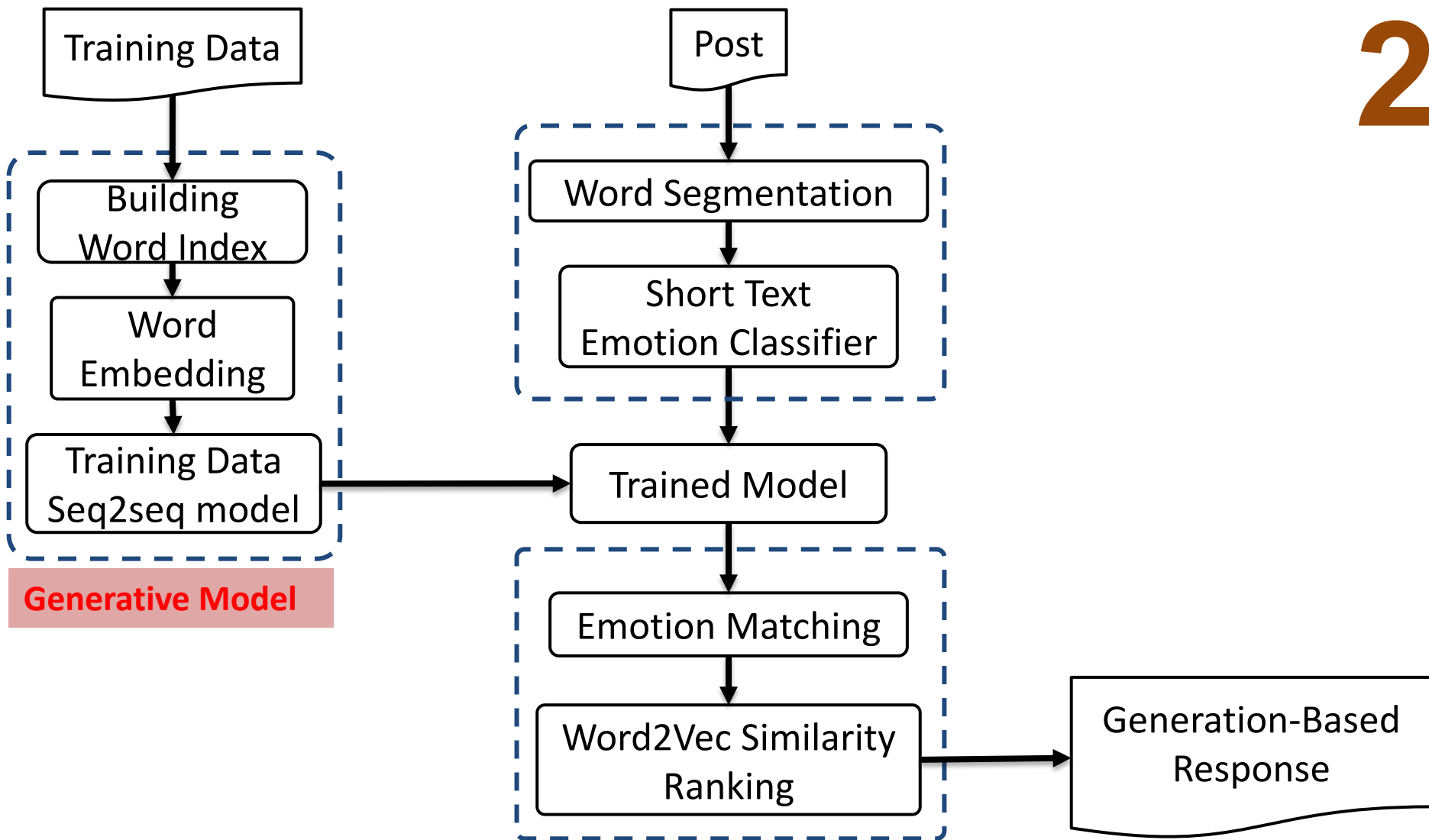
1



The system architecture of IMTKU generation-based model for NTCIR-14 STC-3

Generation-Based Model

2

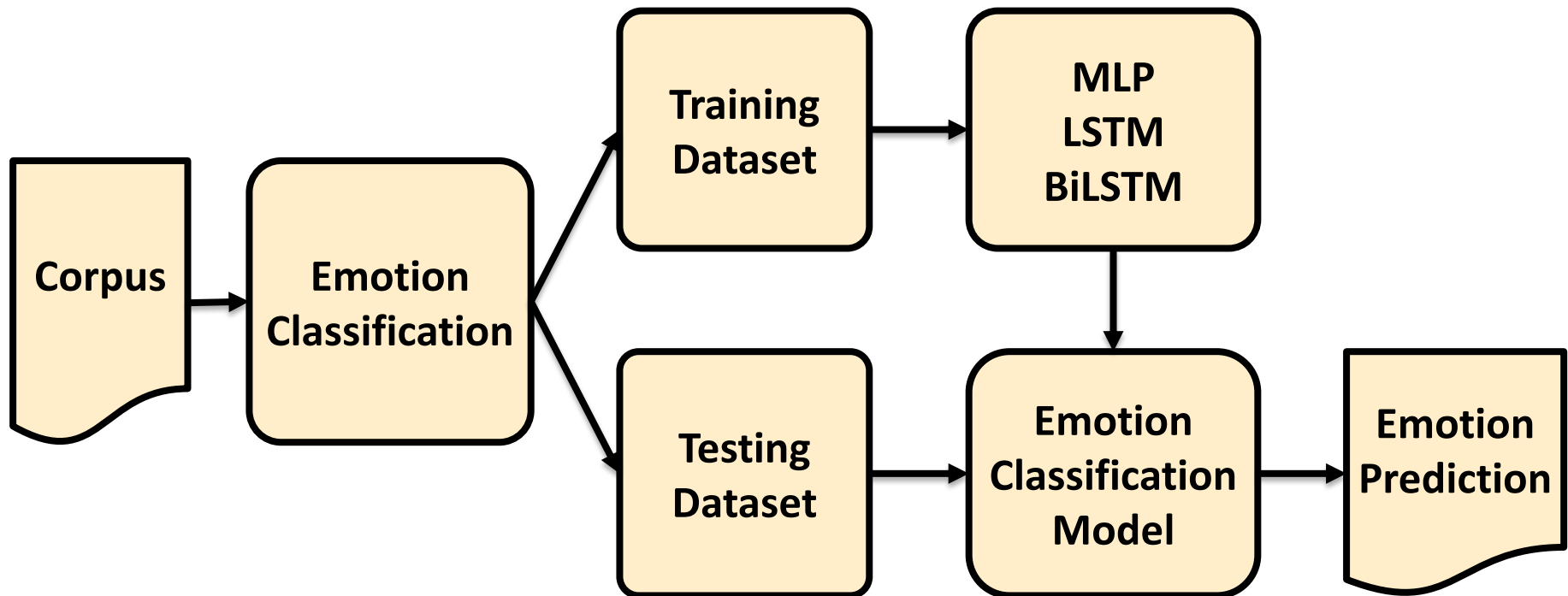


The system architecture of IMTKU emotion classification model for NTCIR-14 STC-3



Emotion Classification Model

3

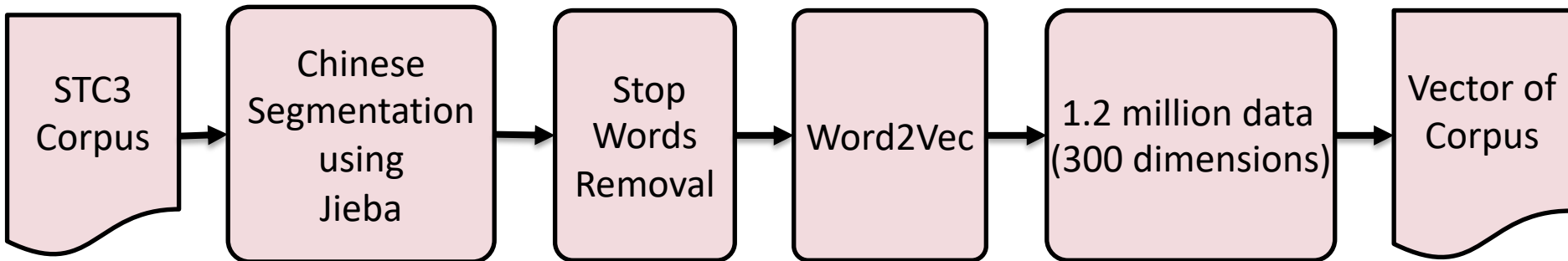


The system architecture of IMTKU Response Ranking for NTCIR-14 STC-3



Response Ranking

4





Short Text Conversation Task (STC-3)

Chinese Emotional Conversation Generation (CECG) Subtask

NTCIR Short Text Conversation

STC-1, STC-2, STC-3

	Japanese	Chinese	English	
NTCIR-12 STC-1 22 active participants	Twitter, Retrieval	Weibo, Retrieval		Single-turn, Non task-oriented
NTCIR-13 STC-2 27 active participants	Yahoo! News, Retrieval+ Generation	Weibo, Retrieval+ Generation		
NTCIR-14 STC-3		Weibo, Generation for given emotion categories		Multi-turn, task-oriented (helpdesk)
		Weibo+English translations, distribution estimation for subjective annotations		

Chinese Emotional Conversation Generation (CECG) subtask

Dialogue Quality (DQ) and Nugget Detection (ND) subtasks

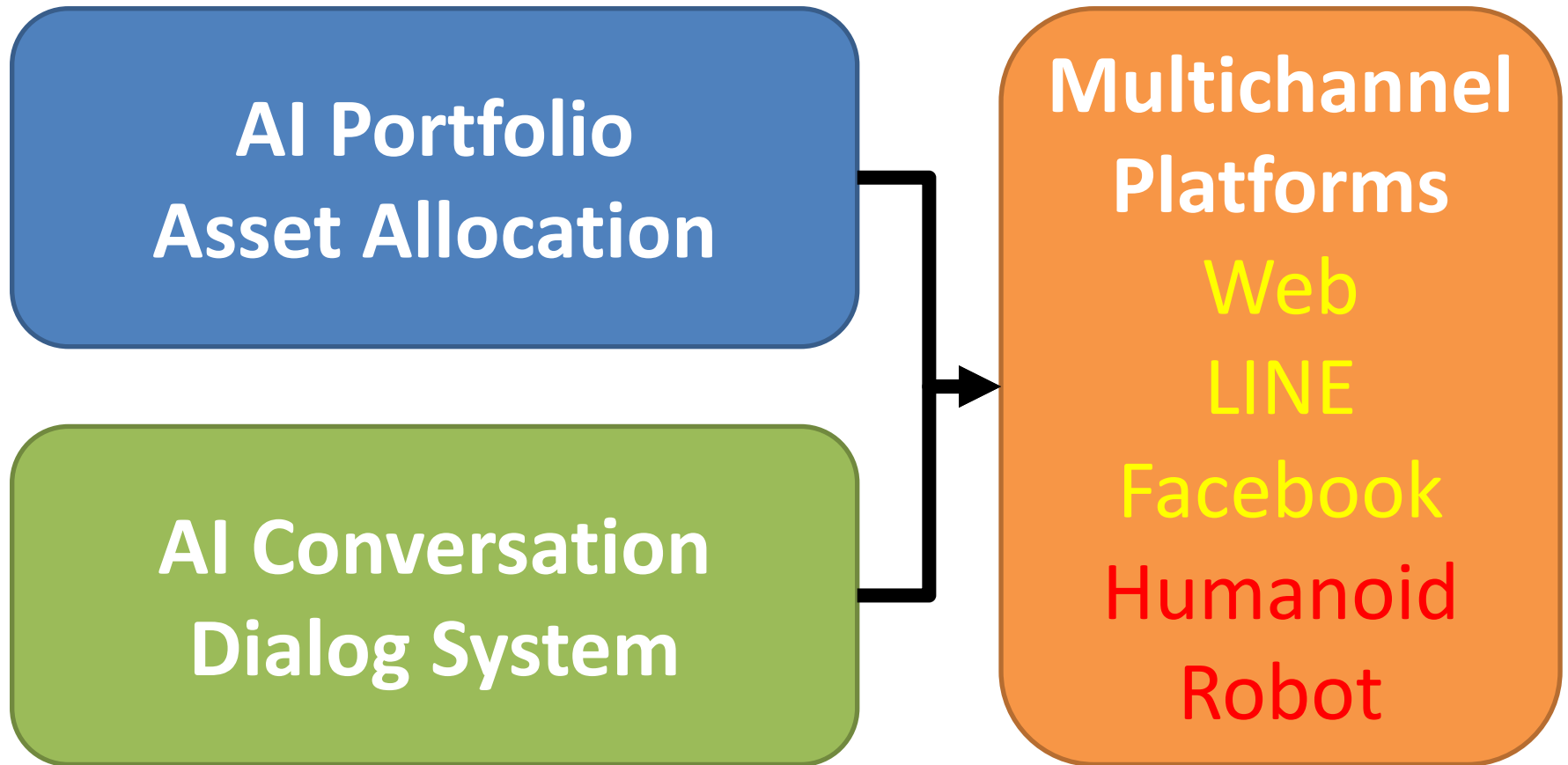
Source: <https://waseda.app.box.com/v/STC3atNTCIR-14>

Chatbots: Evolution of UI/UX

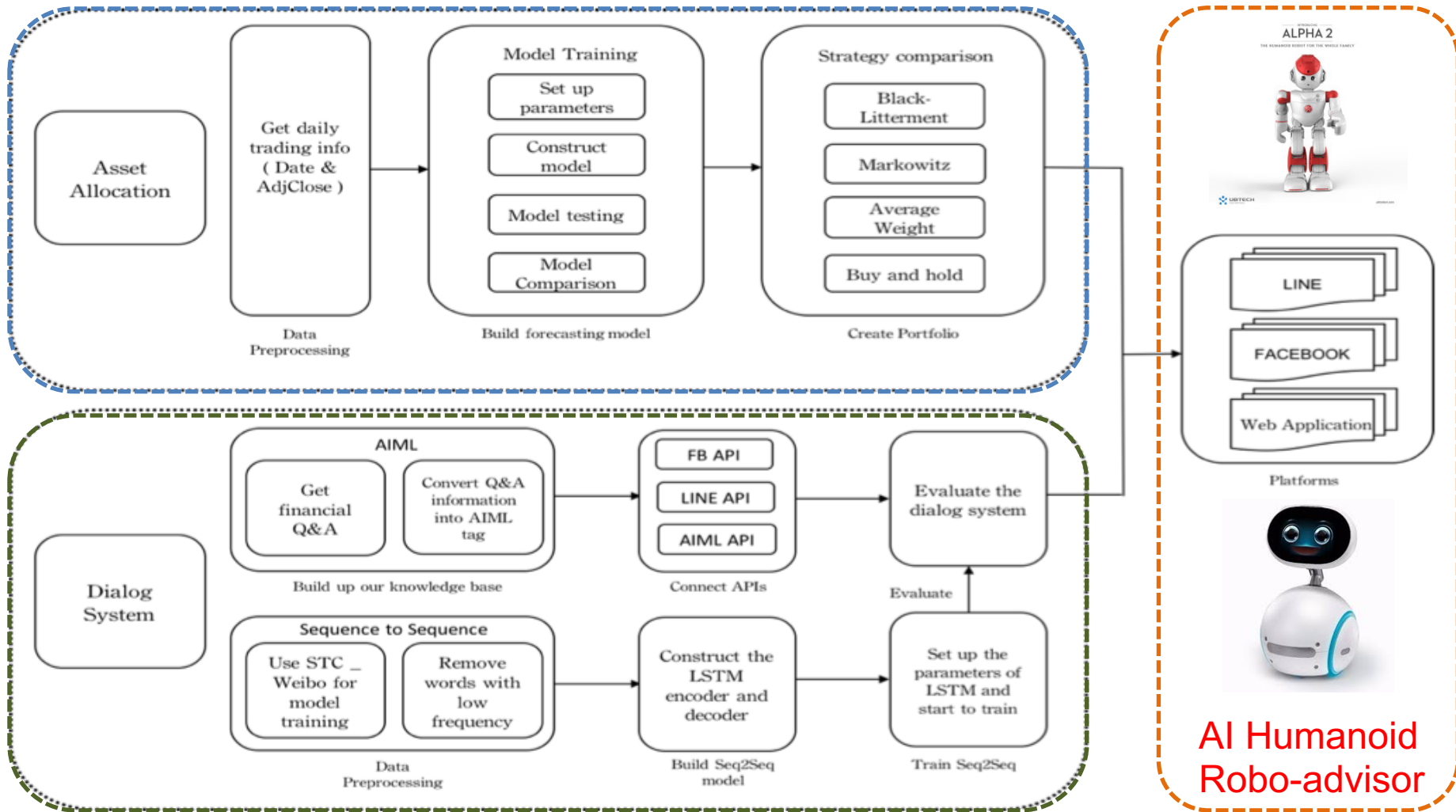
Paradigm	mid - 80s PC	mid - 90s Web	mid - 00s Smartphone	mid - 10s Messaging
Platform <i>Examples</i>	Desktop DOS, Windows, Mac OS	Browser Mosaic, Explorer, Chrome	Mobile OS iOS, Android	Messaging Apps WhatsApp, Messenger, Slack
Applications <i>Examples</i>	Clients Excel, PPT, Lotus	Website Yahoo, Amazon	Apps Angry Birds, Instagram	Bots Weather, Travel
UI/UX	Native Screens	Web Pages	Native Mobile Screens	Message
S/w Dev	Client-side	Server-side	Client-side	Server-side

AI Humanoid Robo-Advisor

AI Humanoid Robo-Advisor for Multi-channel Conversational Commerce

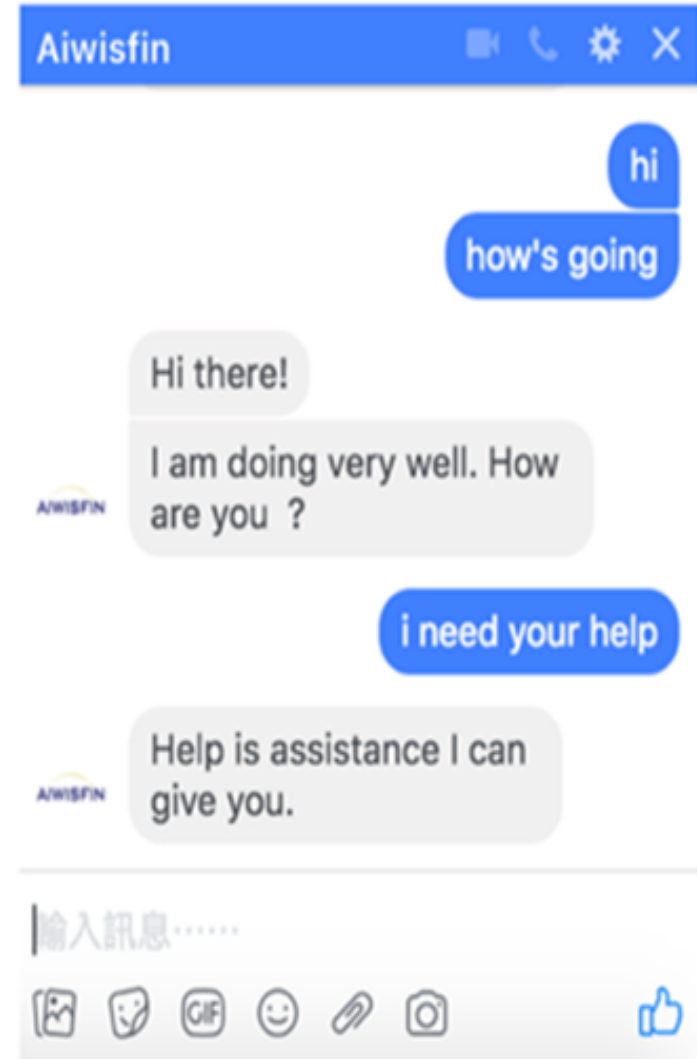


System Architecture of AI Humanoid Robo-Advisor



AI Humanoid Robo-advisor

Conversational Model (LINE, FB Messenger)



Conversational Robo-Advisor Multichannel UI/UX Robots



ALPHA 2

ZENBO



AI Dialogue System

Dialogue Subtasks

Browse > Natural Language Processing > Dialogue

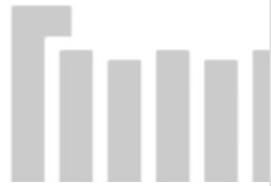
Dialogue subtasks

Dialogue Generation

Dialogue Generation

📄 9 leaderboards

35 papers with code



Dialogue State Tracking

📄 2 leaderboards

30 papers with code



Visual Dialog

📄 3 leaderboards

28 papers with code

Task-Oriented Dialogue Systems

Task-Oriented Dialogue Systems

20 papers with code



Goal-Oriented Dialog

15 papers with code

Short-Text Conversation

Dialogue Management

10 papers with code



Dialogue Understanding

6 papers with code

Short-Text Conversation

5 papers with code

Goal-Oriented Dialogue Systems

3 papers with code

Task-Completion Dialogue Policy Learning

2 papers with code

Chatbot

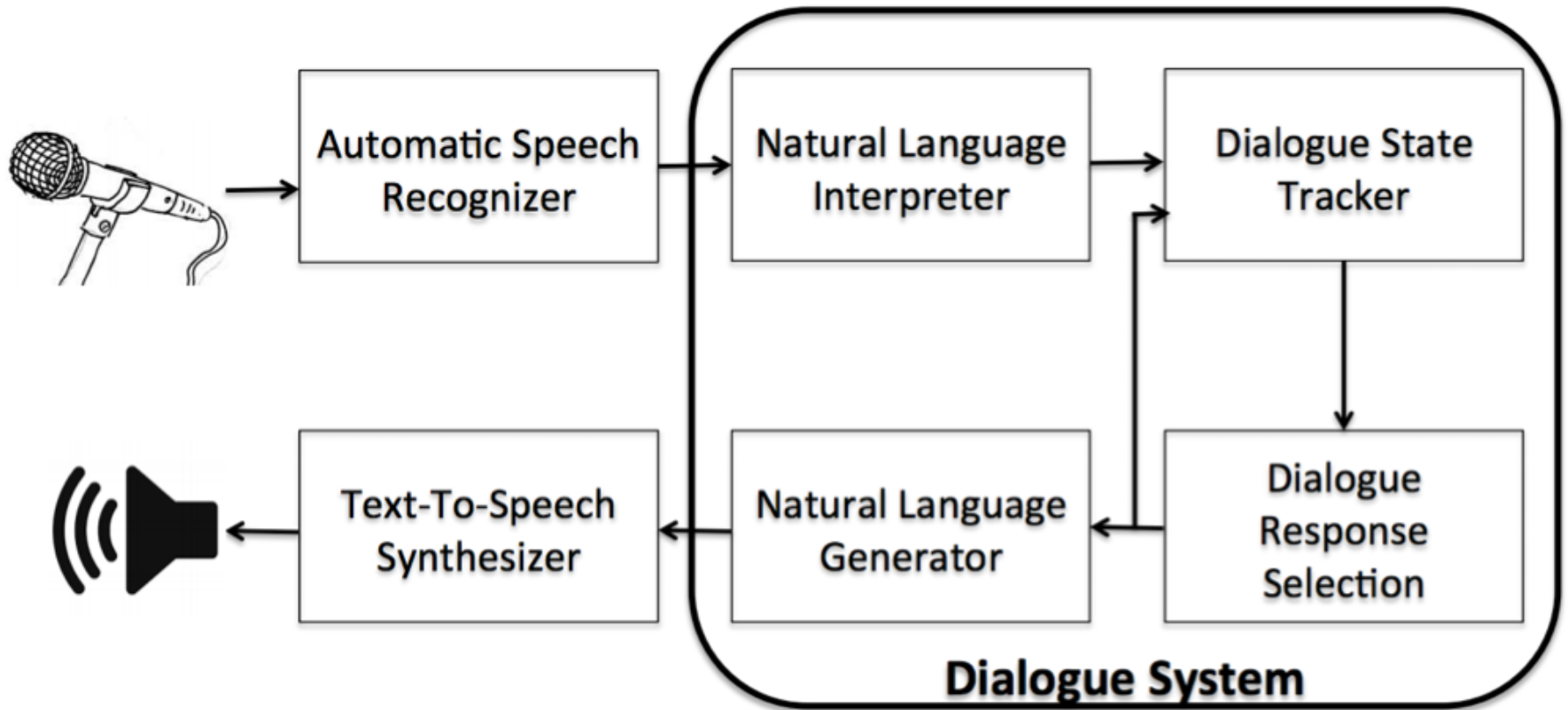
Dialogue System

Intelligent Agent

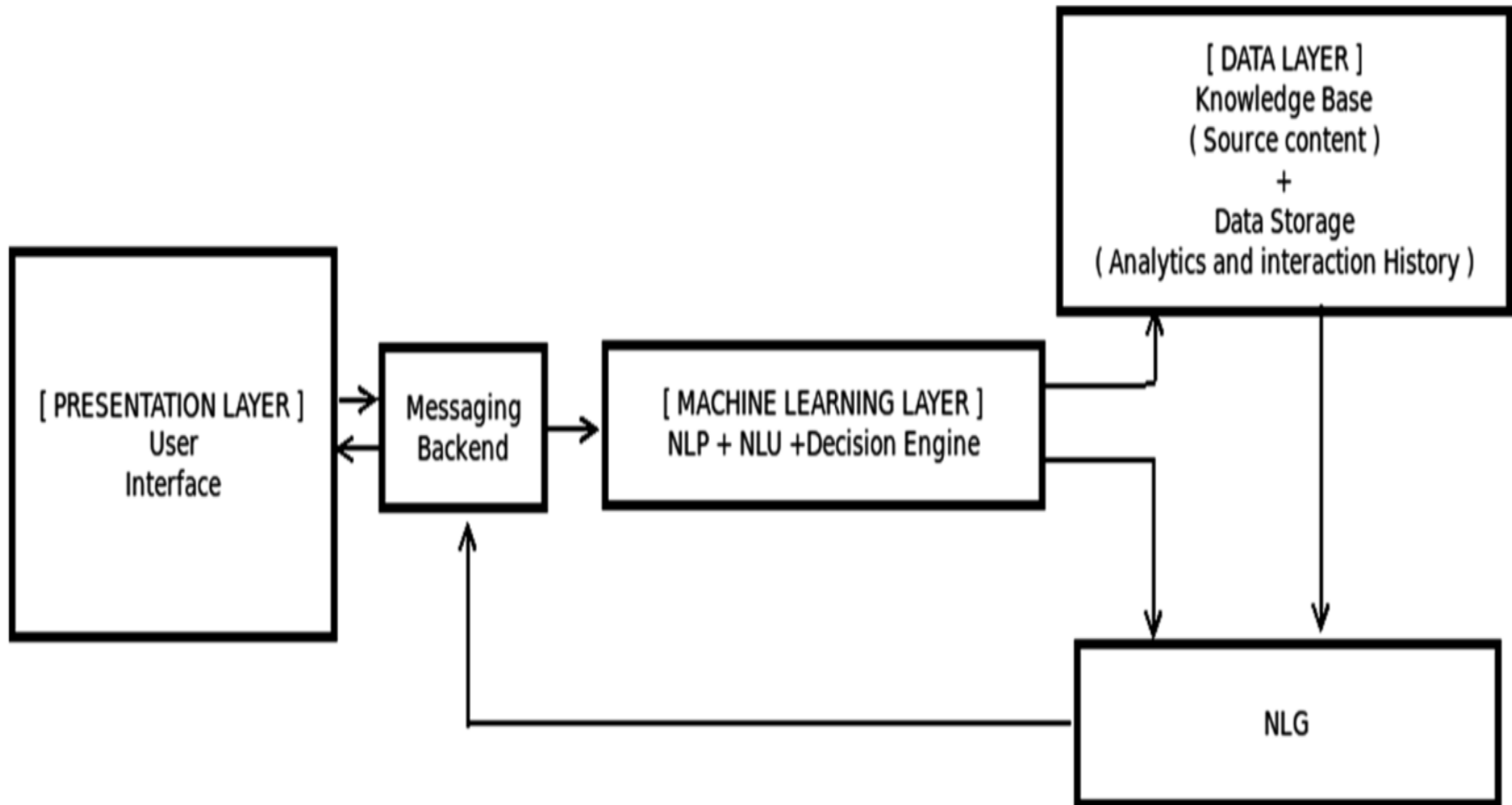
Chatbot



Dialogue System



Overall Architecture of Intelligent Chatbot



Can machines think?

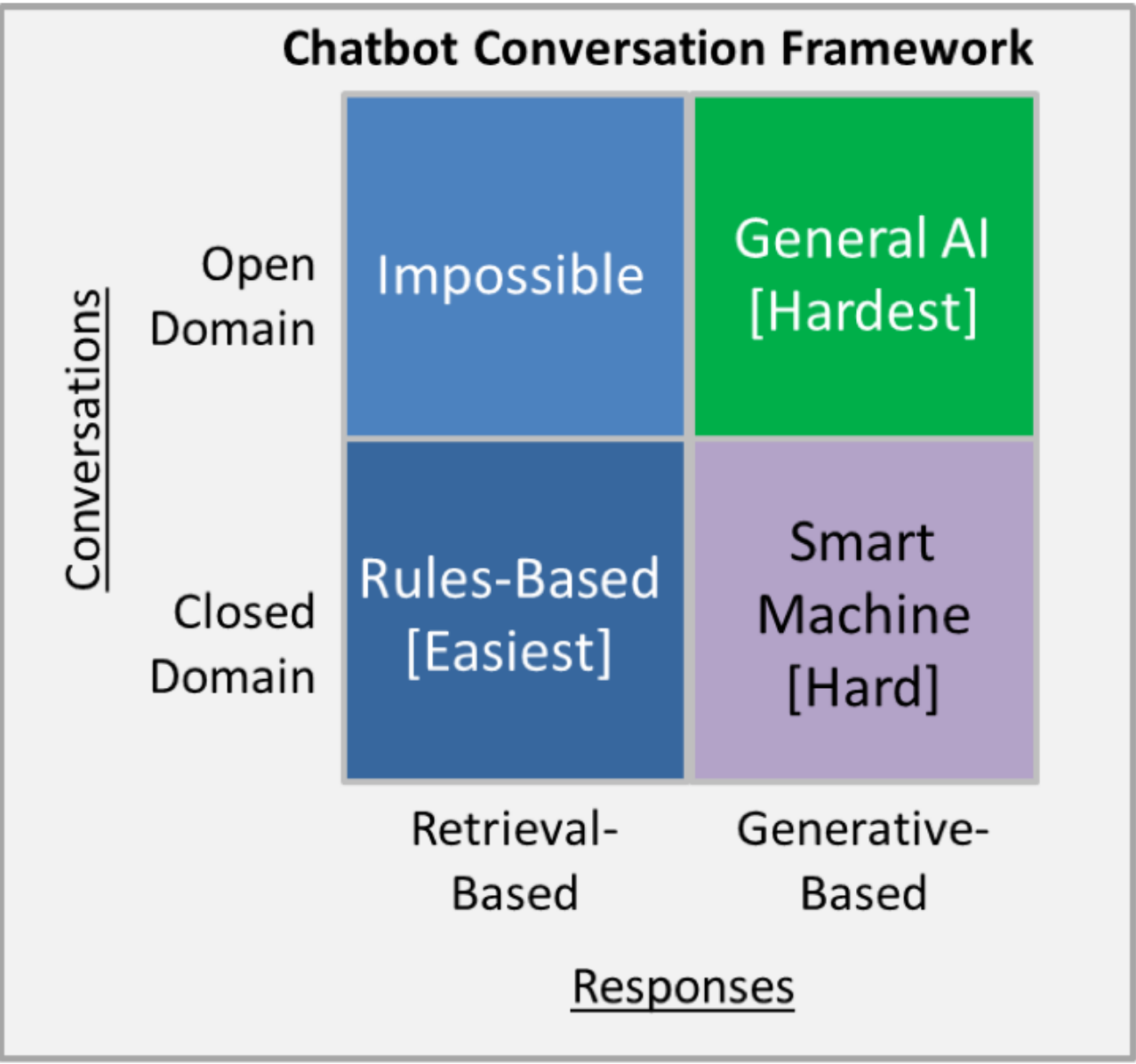
(Alan Turing ,1950)

Source: Cahn, Jack. "CHATBOT: Architecture, Design, & Development."
PhD diss., University of Pennsylvania, 2017.

Chatbot

**“online human-computer
dialog system
with
natural language.”**

Chatbot Conversation Framework

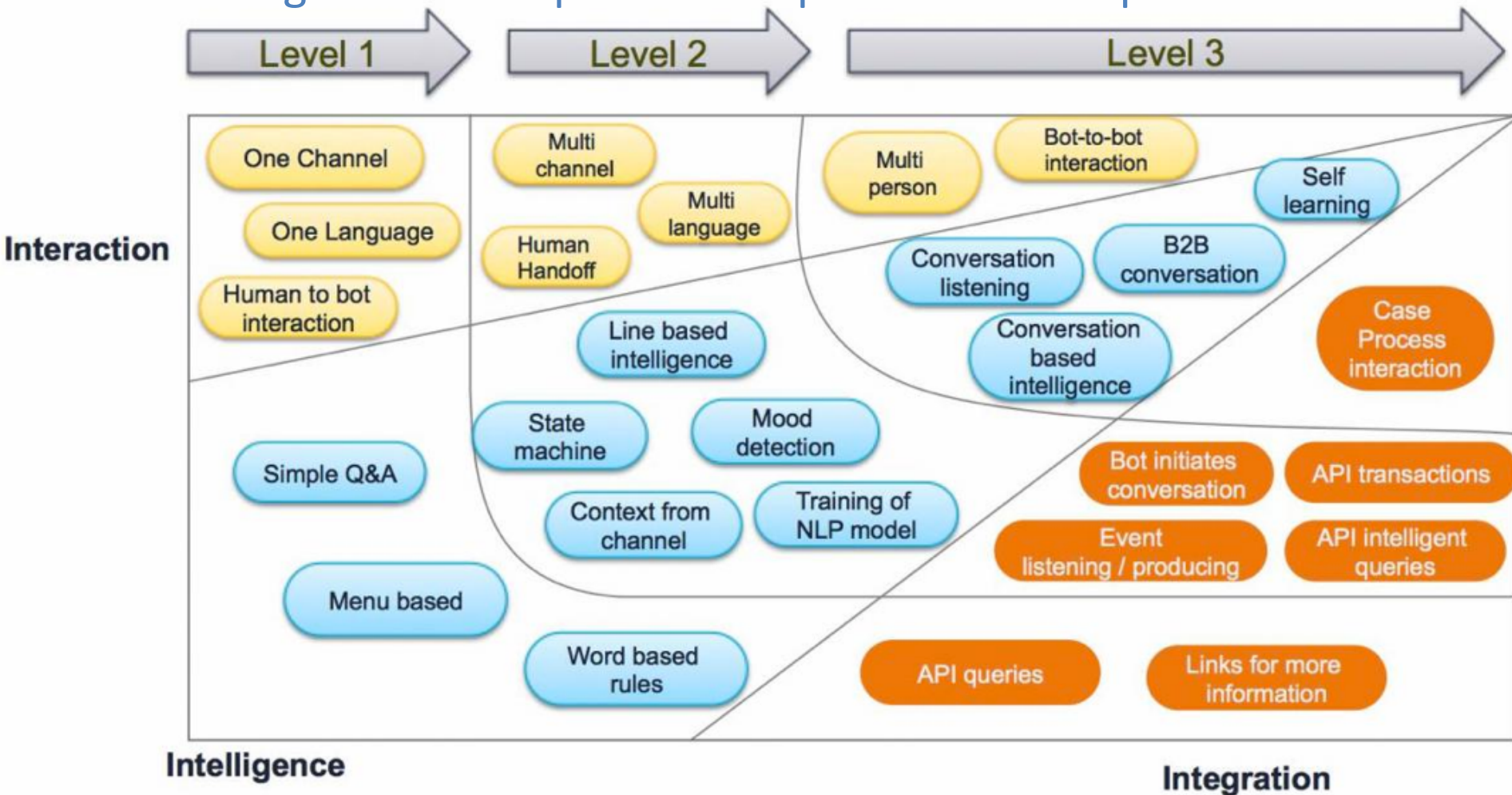


Source: <https://chatbotslife.com/ultimate-guide-to-leveraging-nlp-machine-learning-for-you-chatbot-531ff2dd870c>

Chatbots

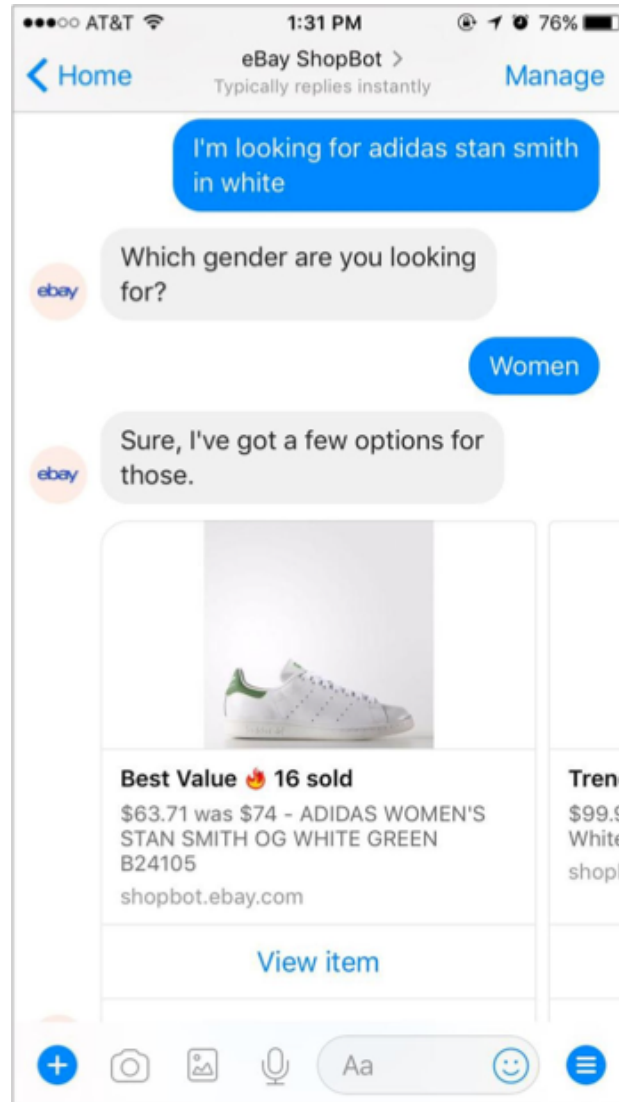
Bot Maturity Model

Customers want to have simpler means to interact with businesses and get faster response to a question or complaint.



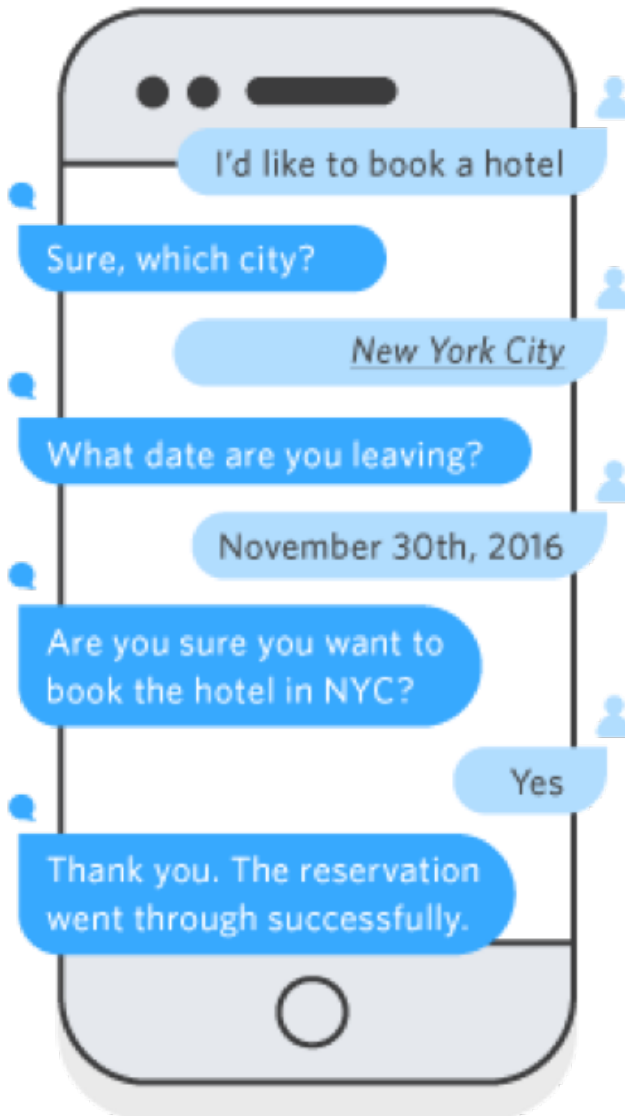
**From
E-Commerce
to
Conversational Commerce:
Chatbots
and
Virtual Assistants**

Conversational Commerce: eBay AI Chatbots



Hotel Chatbot

BookHotel



Intents

An intent performs an action in response to natural language user input

Intent Detection

Utterances

Spoken or typed phrases that invoke your intent

Slots

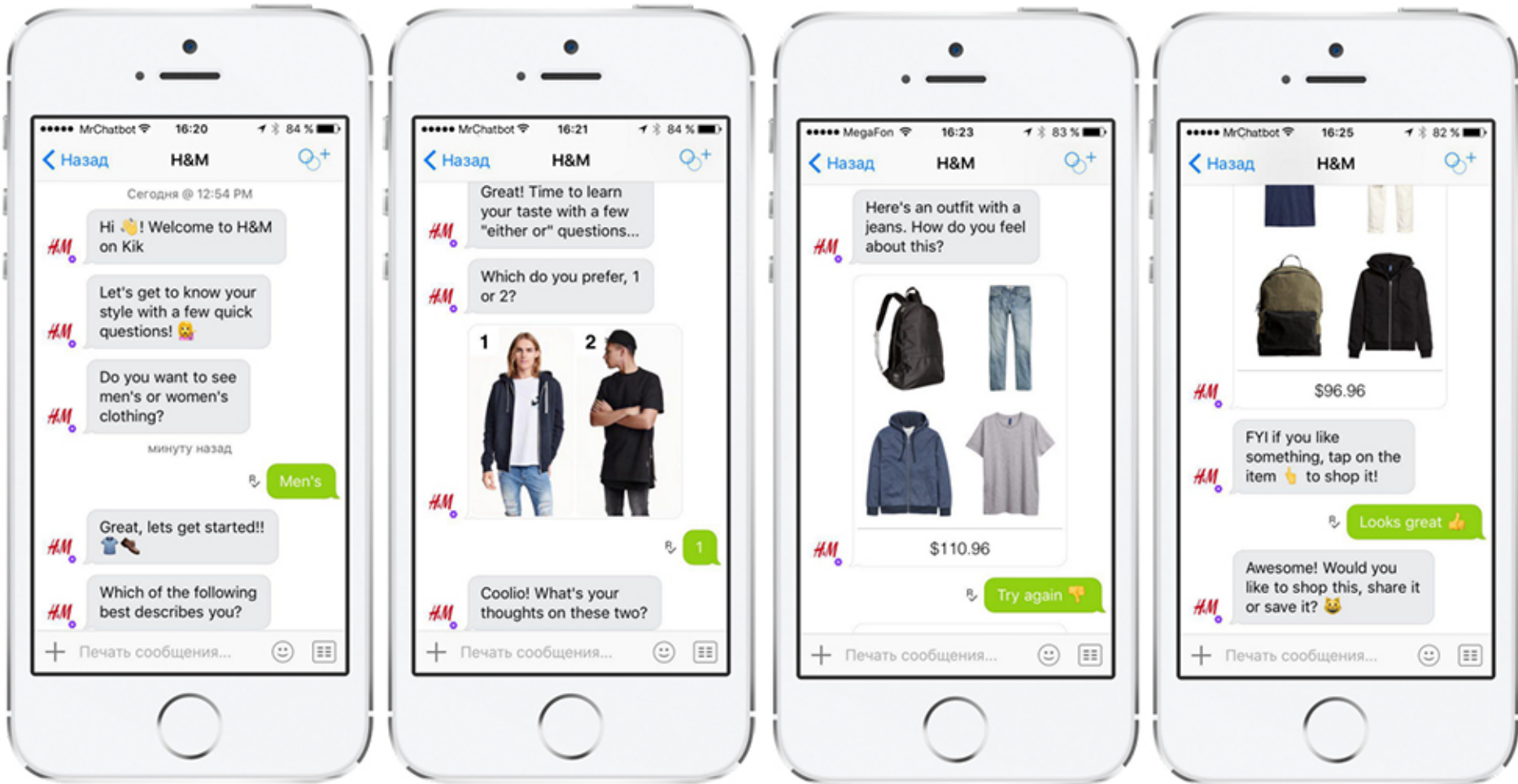
Slots are input data required to fulfill the intent

Slot Filling

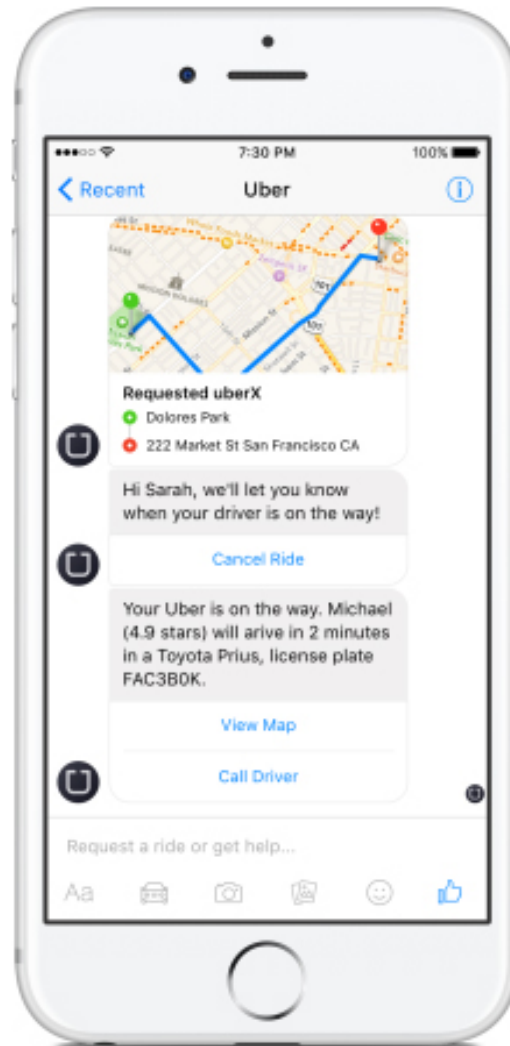
Fulfillment

Fulfillment mechanism for your intent

H&M's Chatbot on Kik



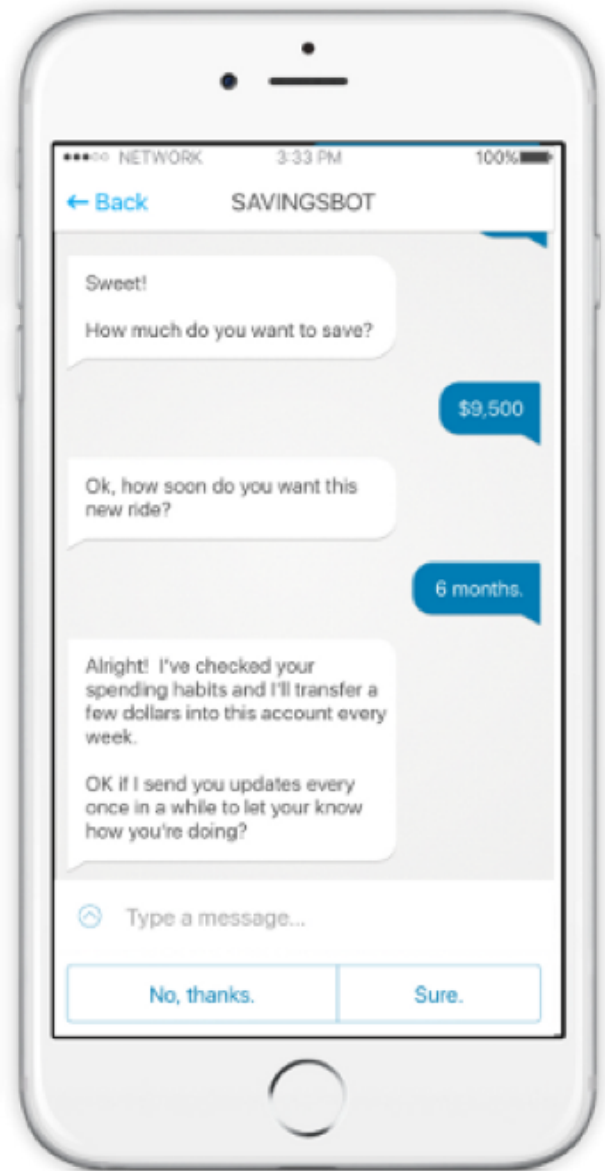
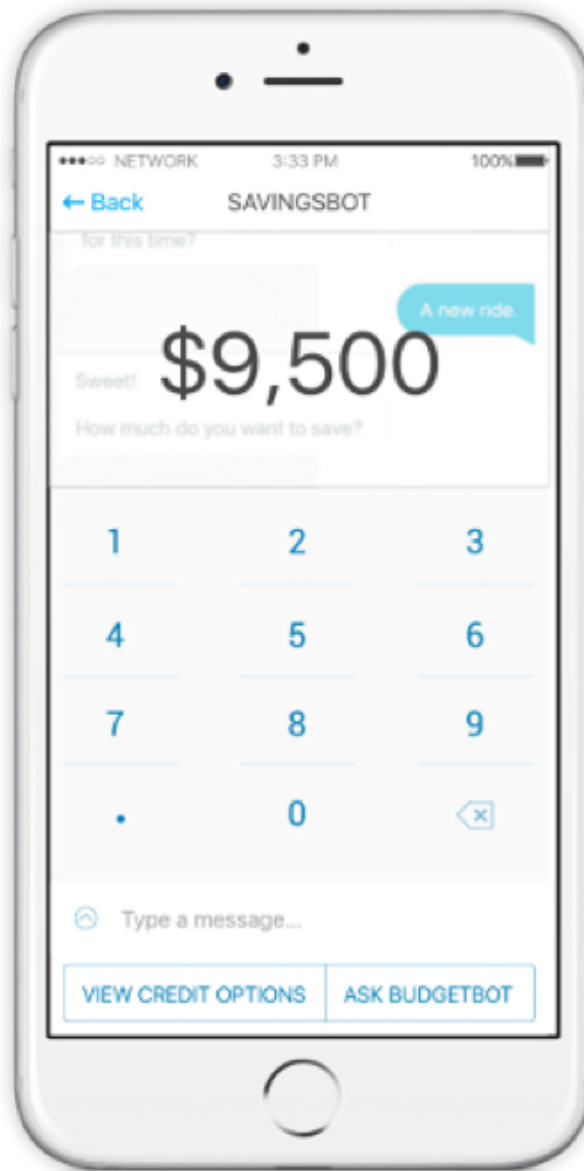
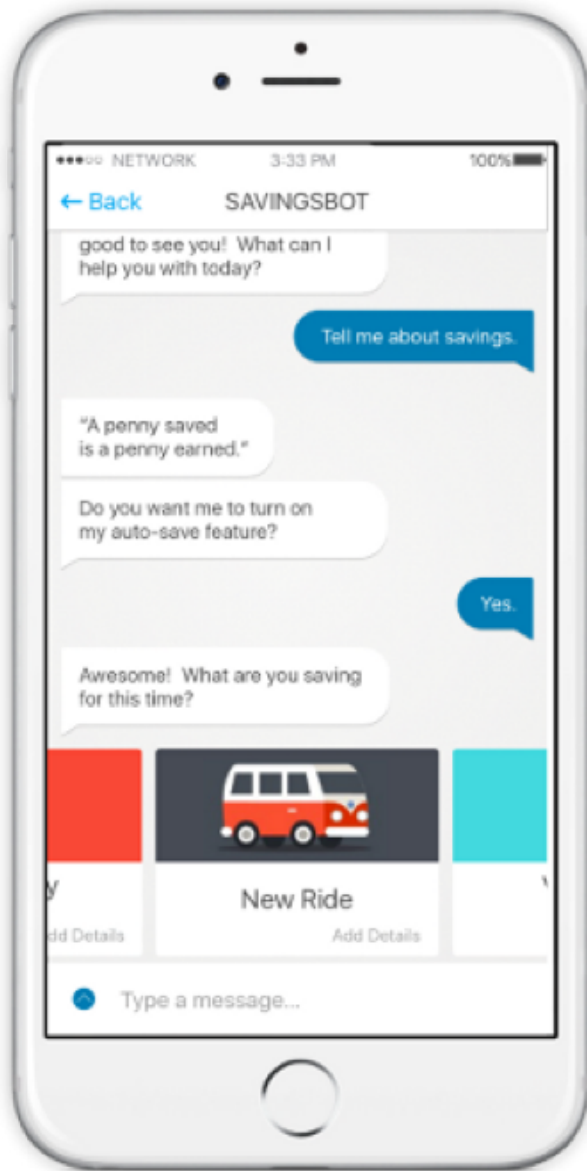
Uber's Chatbot on Facebook's Messenger



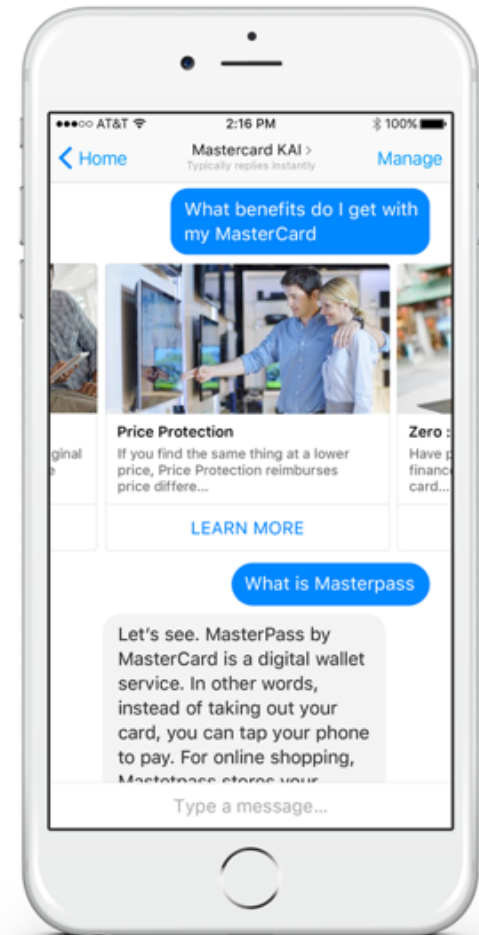
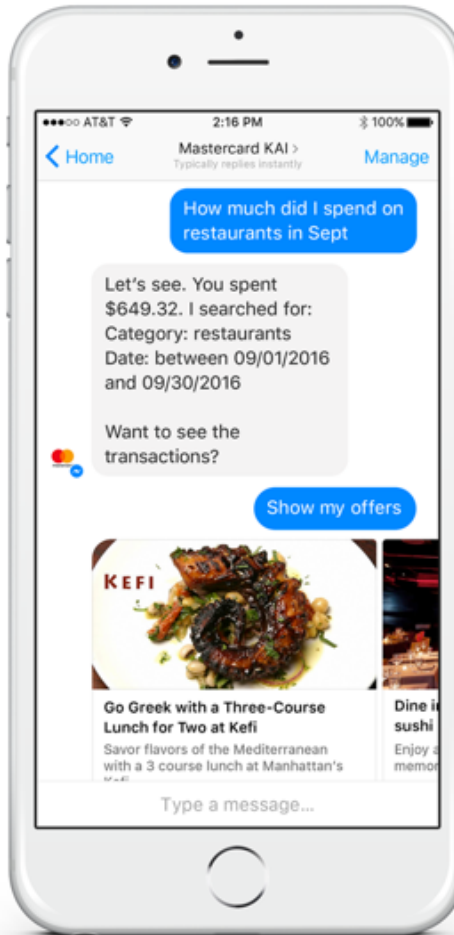
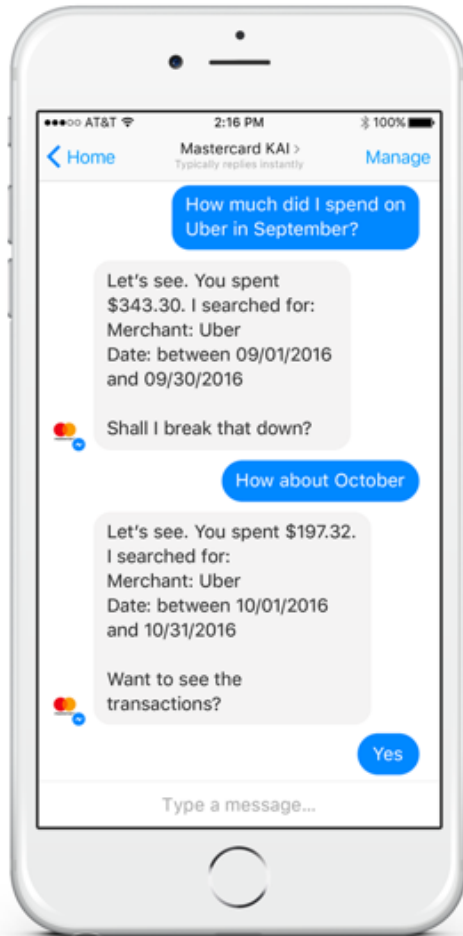
- Uber's chatbot on Facebook's messenger
- one main benefit: it loads much faster than the Uber app

Source: <http://www.guided-selling.org/from-e-commerce-to-conversational-commerce/>

Savings Bot



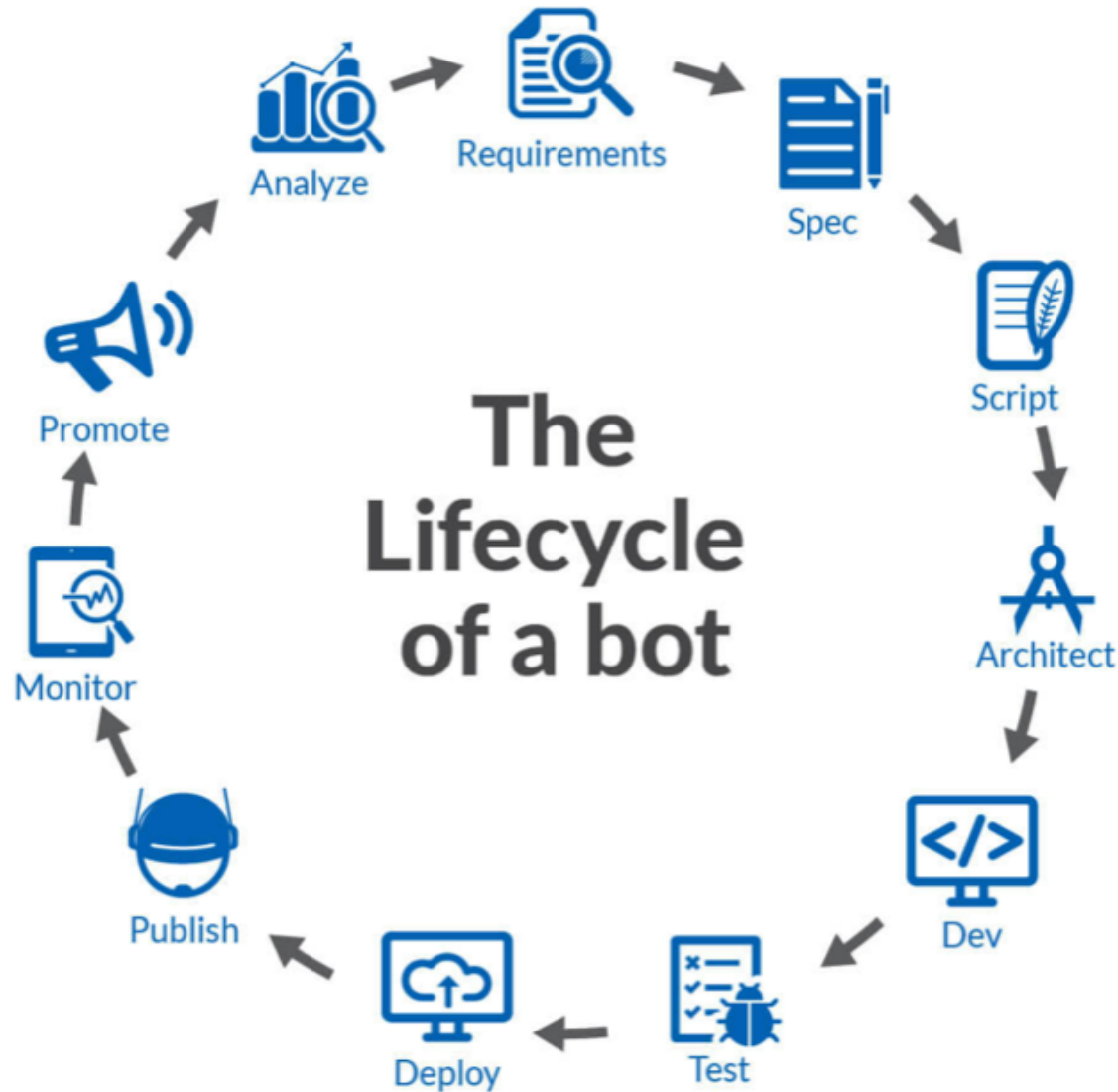
Mastercard Makes Commerce More Conversational



POWERED BY
Kasisto

Bot Life Cycle and Platform Ecosystem

The Bot Lifecycle



The bot platform ecosystem and the emerging giants

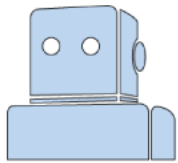
Nearly every large software company has announced some sort of bot strategy in the last year. Here's a look at a handful of leading platforms that developers might use to send messages, interpret natural language, and deploy bots, with the emerging bot-ecosystem giants highlighted.

General AI agents with platforms

Developer access available now or announced



Bot frameworks and deployment platforms



Wit.ai
Facebook



BotKit
Howdy



Chatfuel

AUTOMAT

Automat



Bot Framework
Microsoft



Api.ai
Google



Pandorabots



MindMeld



Gupshup



Sequel

Bots with traction

Personal assistants

Virtual agents/ Customer service

Communication/ Productivity/ Security

Connectors/ Shared Services

AI Tools: Natural Language Processing, Machine Learning, Speech & Voice Recognition

Bot Discovery

Bot developer frameworks and tools

Analytics

Messaging

Food

The Wine Pairer Plum Pescetarian Kitchen Hungry Foodie

Fitmeal Entrée Chatobook Make My Sushi Voome

Communication

Tangowork Typeform Anony Tajirjimy Refugio Rescue Messenger Match

Sensay LangLearnBot Chat Club Lingio Translate Decodemoji U-Report Global Twiggo

Utilities

Poncho Calcbot Smokey DotCom Server Monitoring

English Dictionary Youtube Search Idea Bot QRbot Instant Translator

Personal

M Assist Operator Uber Swelly AskVoila

Ikea Build Selectionnist Bud Light Bot Ask Gary Vee Gidi Visabot

Analytics

SISENSE Stockflare Pagesights DAM BuzzLogger Trading Bot



Design

ColoretoBot Connie Digital AWWWARDS Mr. Norman Graphic Design SnapBot

News

CNN TIA Digg WSJ Reddit Bot Al Jazeera

Hacker News Wired The Guardian France Info Chatbots Mag VentureBeat

Travel

Grindbase KLM British Airways Space Explorer Austrian Airlines

SnapTravel Skyscanner Kayak Ticketbot Rapido

Entertainment

Spotify Kim Kardashian La Bringue 50 Cent Loquillo Fiel Lindsay Lohan Maroon 5

MTV News Axwell A Ingresso RedBull TV SantaBot Star Wars Bot Citron Pokébot

Developer Tools

HackerOne Wiredelta

Robbie Zilly

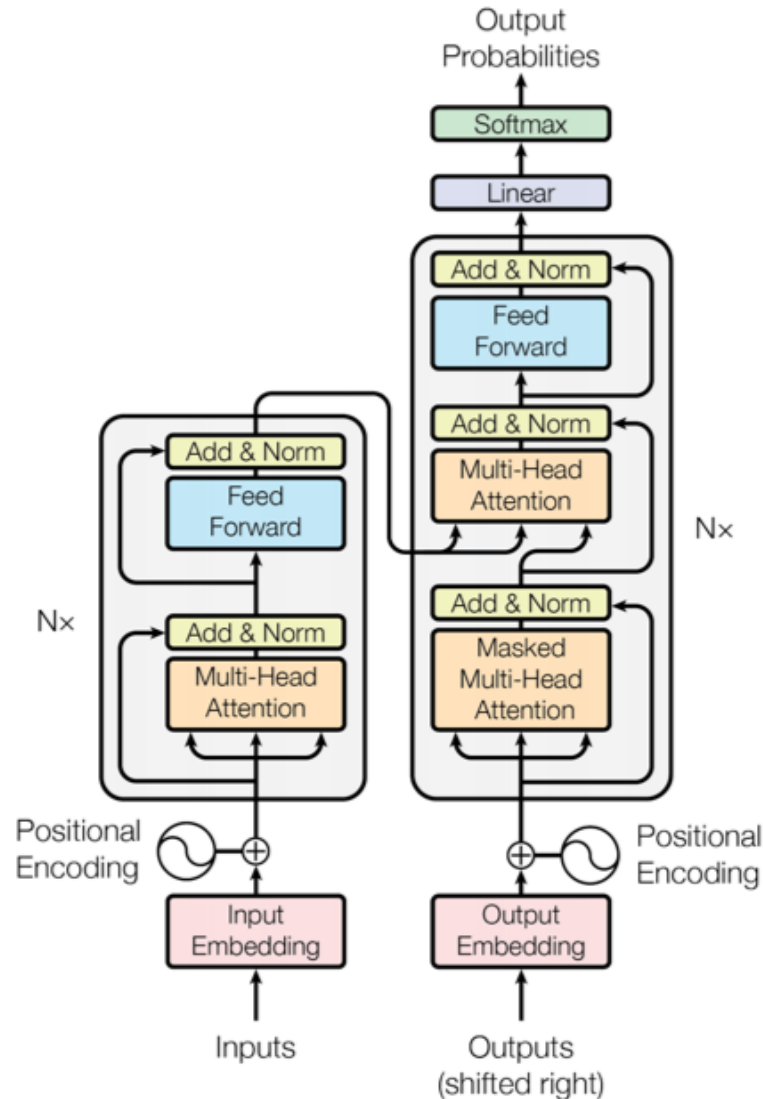
Education

Genius Kimchi

MemoryzerBot Einstein

Transformer (Attention is All You Need)

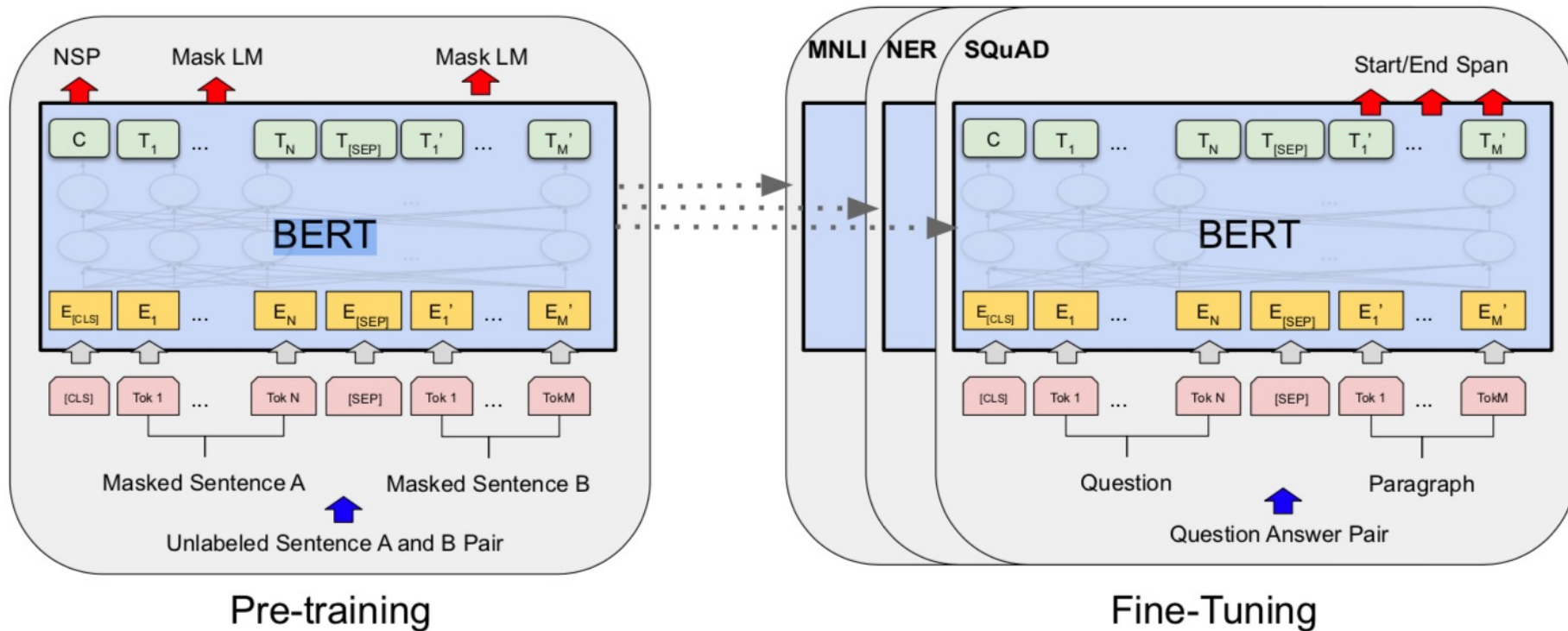
(Vaswani et al., 2017)



BERT: Pre-training of Deep Bidirectional Transformers for Language Understanding

BERT (Bidirectional Encoder Representations from Transformers)

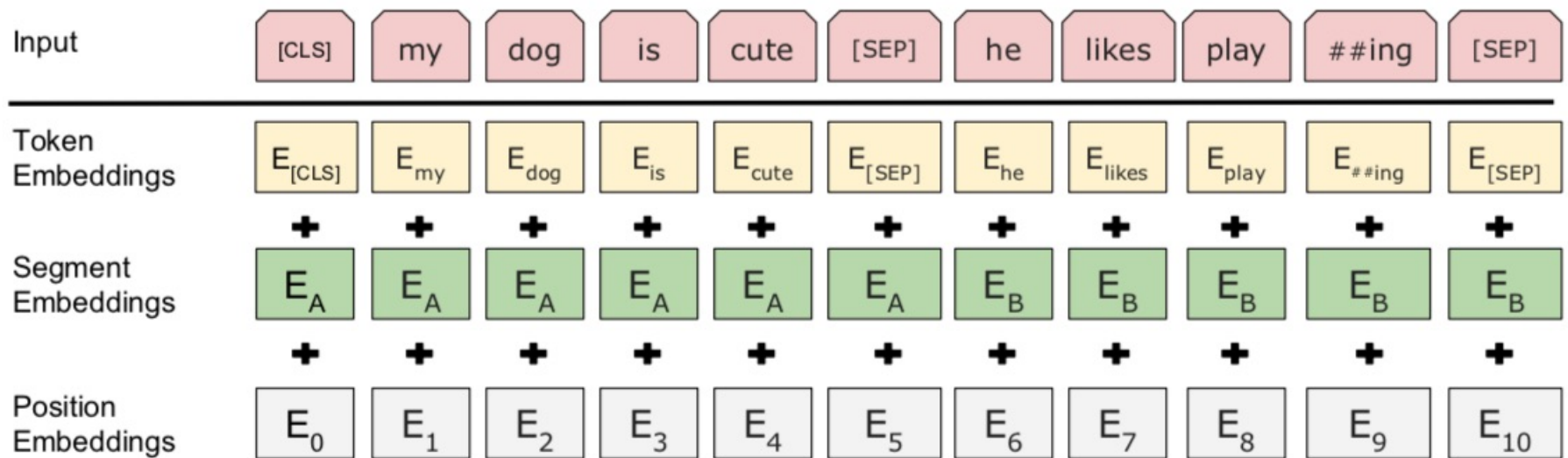
Overall pre-training and fine-tuning procedures for BERT



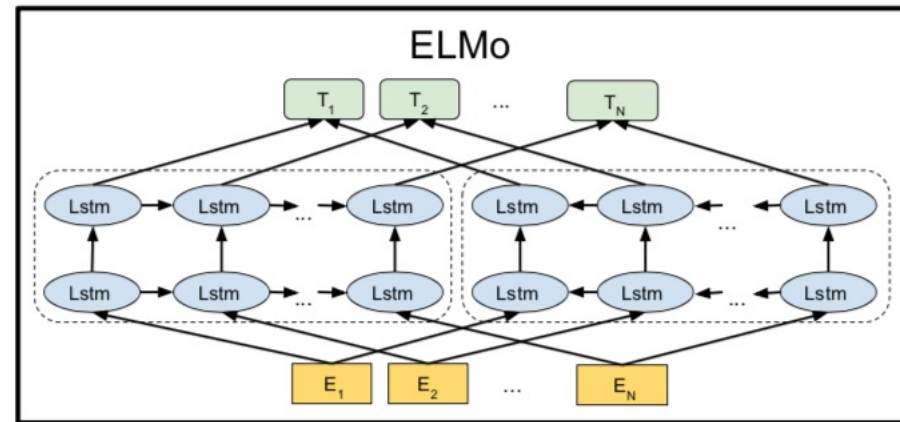
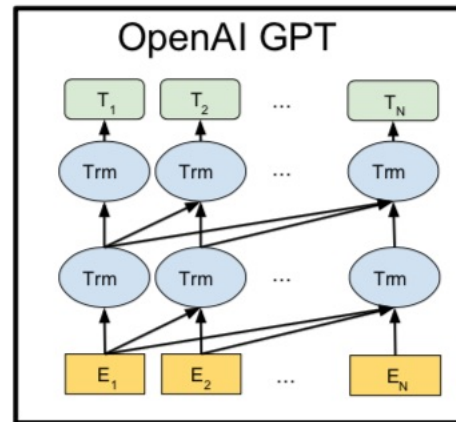
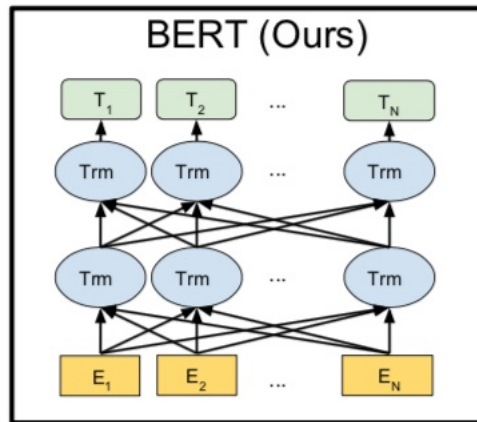
BERT: Pre-training of Deep Bidirectional Transformers for Language Understanding

BERT (Bidirectional Encoder Representations from Transformers)

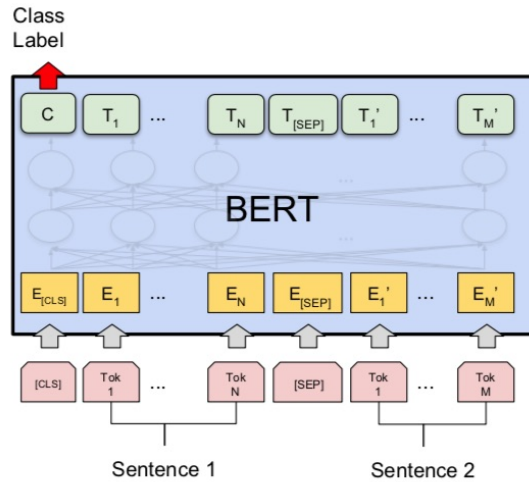
BERT input representation



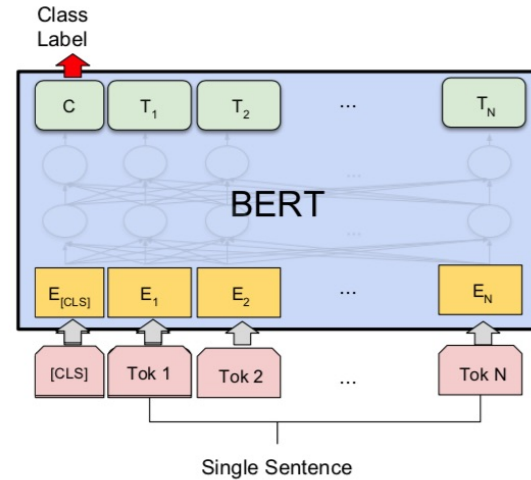
BERT, OpenAI GPT, ELMo



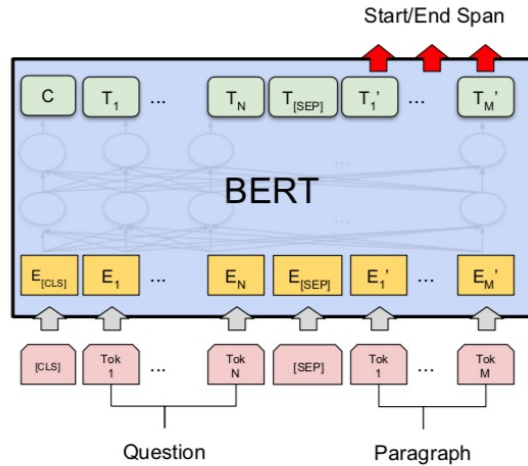
Fine-tuning BERT on Different Tasks



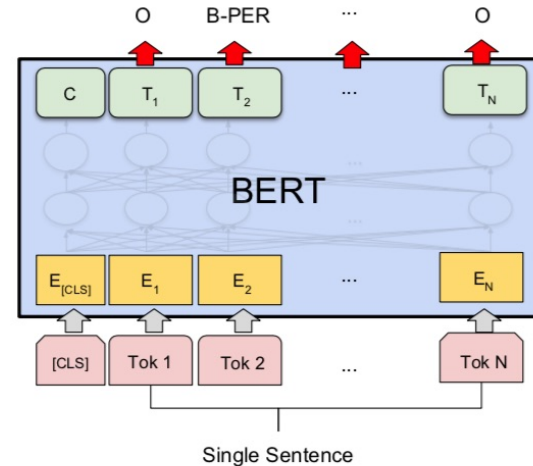
(a) Sentence Pair Classification Tasks:
MNLI, QQP, QNLI, STS-B, MRPC,
RTE, SWAG



(b) Single Sentence Classification Tasks:
SST-2, CoLA



(c) Question Answering Tasks:
SQuAD v1.1

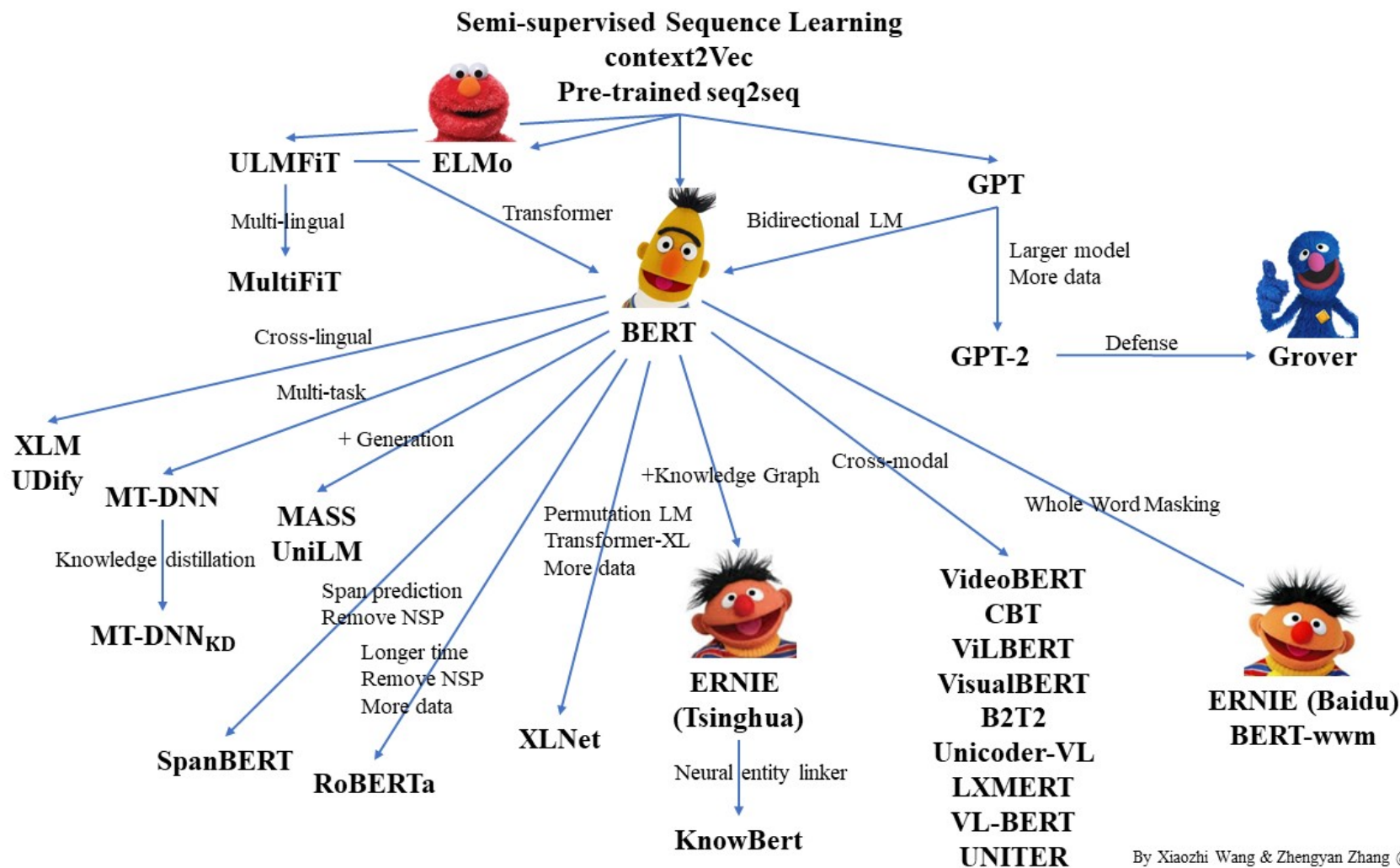


(d) Single Sentence Tagging Tasks:
CoNLL-2003 NER

Source: Devlin, Jacob, Ming-Wei Chang, Kenton Lee, and Kristina Toutanova (2018).

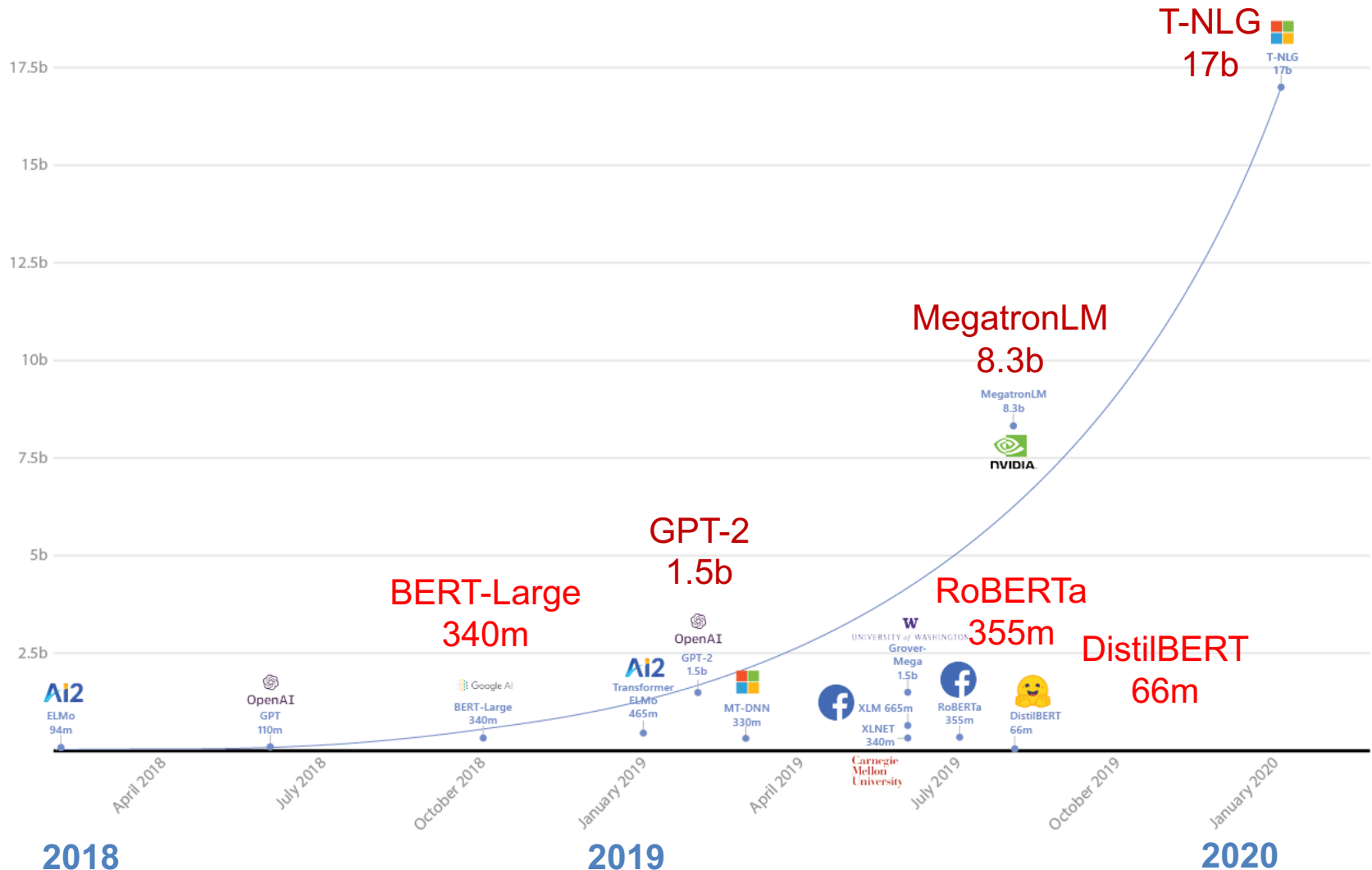
"Bert: Pre-training of deep bidirectional transformers for language understanding." arXiv preprint arXiv:1810.04805.

Pre-trained Language Model (PLM)



By Xiaozhi Wang & Zhengyan Zhang @THUNLP

Turing Natural Language Generation (T-NLG)



Transformers Transformers

State-of-the-art Natural Language Processing for TensorFlow 2.0 and PyTorch

- Transformers
 - pytorch-transformers
 - pytorch-pretrained-bert
- provides state-of-the-art general-purpose architectures
 - (BERT, GPT-2, RoBERTa, XLM, DistilBert, XLNet, CTRL...)
 - for Natural Language Understanding (NLU) and Natural Language Generation (NLG)
with over 32+ pretrained models
in 100+ languages
and deep interoperability between TensorFlow 2.0 and PyTorch.

Transfer Learning in Natural Language Processing

Source: Sebastian Ruder, Matthew E. Peters, Swabha Swayamdipta, and Thomas Wolf (2019), "Transfer learning in natural language processing." In Proceedings of the 2019 Conference of the North American Chapter of the Association for Computational Linguistics: Tutorials, pp. 15-18.

NLP Benchmark Datasets

Task	Dataset	Link
Machine Translation	WMT 2014 EN-DE WMT 2014 EN-FR	http://www-lium.univ-lemans.fr/~schwenk/csmlm_joint_paper/
Text Summarization	CNN/DM Newsroom DUC Gigaword	https://cs.nyu.edu/~kcho/DMQA/ https://summari.es/ https://www-nlpir.nist.gov/projects/duc/data.html https://catalog.ldc.upenn.edu/LDC2012T21
Reading Comprehension Question Answering Question Generation	ARC CliCR CNN/DM NewsQA RACE SQuAD Story Cloze Test NarrativeQA Quasar SearchQA	http://data.allenai.org/arc/ http://aclweb.org/anthology/N18-1140 https://cs.nyu.edu/~kcho/DMQA/ https://datasets.maluuba.com/NewsQA http://www.qizhexie.com/data/RACE_leaderboard https://rajpurkar.github.io/SQuAD-explorer/ http://aclweb.org/anthology/W17-0906.pdf https://github.com/deepmind/narrativeqa https://github.com/bdhingra/quasar https://github.com/nyu-dl/SearchQA
Semantic Parsing	AMR parsing ATIS (SQL Parsing) WikiSQL (SQL Parsing)	https://amr.isi.edu/index.html https://github.com/jkkummerfeld/text2sql-data/tree/master/data https://github.com/salesforce/WikiSQL
Sentiment Analysis	IMDB Reviews SST Yelp Reviews Subjectivity Dataset	http://ai.stanford.edu/~amaas/data/sentiment/ https://nlp.stanford.edu/sentiment/index.html https://www.yelp.com/dataset/challenge http://www.cs.cornell.edu/people/pabo/movie-review-data/
Text Classification	AG News DBpedia TREC 20 NewsGroup	http://www.di.unipi.it/~gulli/AG_corpus_of_news_articles.html https://wiki.dbpedia.org/Datasets https://trec.nist.gov/data.html http://qwone.com/~jason/20Newsgroups/
Natural Language Inference	SNLI Corpus MultiNLI SciTail	https://nlp.stanford.edu/projects/snli/ https://www.nyu.edu/projects/bowman/multinli/ http://data.allenai.org/scitail/
Semantic Role Labeling	Proposition Bank OneNotes	http://propbank.github.io/ https://catalog.ldc.upenn.edu/LDC2013T19

**Dialogue
on
Airline Travel
Information System
(ATIS)**

The ATIS (Airline Travel Information System) Dataset

<https://www.kaggle.com/siddhadev/atis-dataset-from-ms-cntk>

Sentence	what	flights	leave	from	phoenix
Slots	O	O	O	O	B-fromloc
Intent	atis_flight				

Training samples: 4978

Testing samples: 893

Vocab size: 943

Slot count: 129

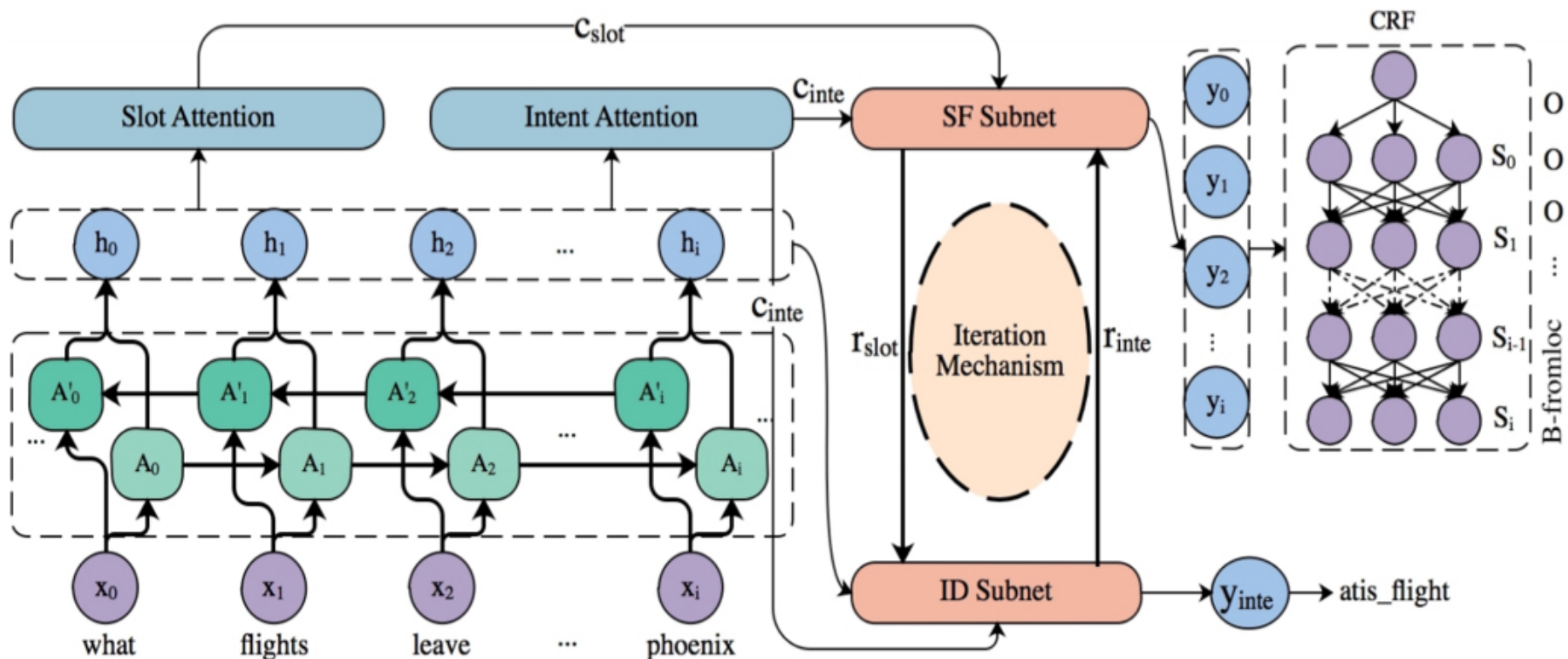
Intent count: 26

SF-ID Network (E et al., 2019)

Slot Filling (SF)

Intent Detection (ID)

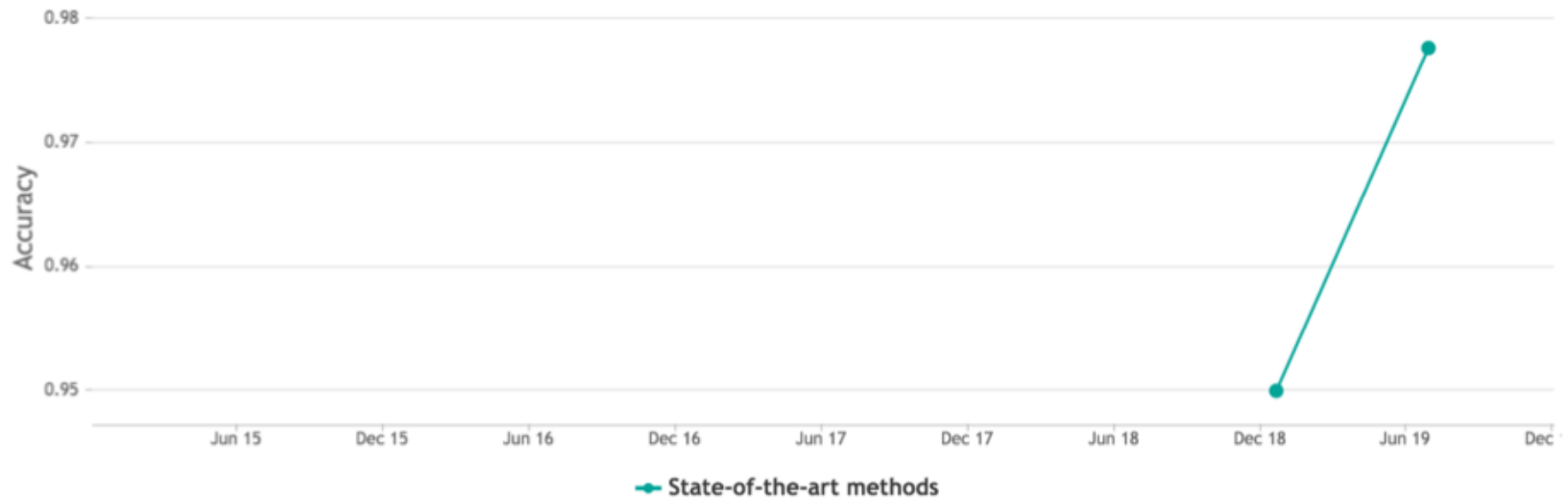
A Novel Bi-directional Interrelated Model for Joint Intent Detection and Slot Filling



Intent Detection on ATIS

State-of-the-art

Intent Detection on ATIS



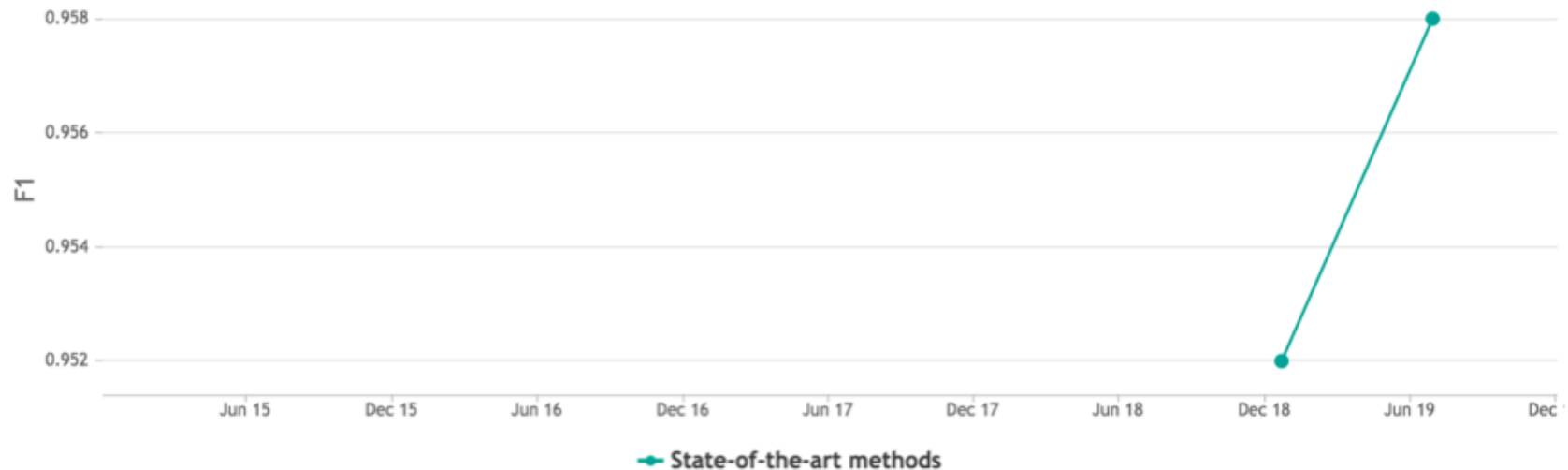
Edit

RANK	METHOD	ACCURACY	PAPER TITLE	YEAR	PAPER	CODE
1	SF-ID	0.9776	A Novel Bi-directional Interrelated Model for Joint Intent Detection and Slot Filling	2019		
2	Capsule-NLU	0.950	Joint Slot Filling and Intent Detection via Capsule Neural Networks	2018		

Slot Filling on ATIS

State-of-the-art

Slot Filling on ATIS



Edit

RANK	METHOD	F1	PAPER TITLE	YEAR	PAPER	CODE
1	SF-ID	0.958	A Novel Bi-directional Interrelated Model for Joint Intent Detection and Slot Filling	2019		
2	Capsule-NLU	0.952	Joint Slot Filling and Intent Detection via Capsule Neural Networks	2018		

Source: <https://paperswithcode.com/sota/slot-filling-on-atis>

Restaurants Dialogue Datasets

- MIT Restaurant Corpus
 - <https://groups.csail.mit.edu/sls/downloads/restaurant/>
- CamRest676
(Cambridge restaurant dialogue domain dataset)
 - <https://www.repository.cam.ac.uk/handle/1810/260970>
- DSTC2 (Dialog State Tracking Challenge 2 & 3)
 - <http://camdial.org/~mh521/dstc/>

CrossWOZ:

A Large-Scale Chinese Cross-Domain Task-Oriented Dialogue Dataset

MultiWOZ	CrossWOZ
usr: I'm looking for a college type attraction. ... usr: I would like to visit <u>in town centre</u> please. ... usr: Can you find an Indian restaurant for me that is also in the town centre ?	usr: 你好，可以帮我推荐一个评分是4.5分以上的景点吗？ Hello, could you recommend an attraction with a rating of 4.5 or higher? sys: 天安门城楼，簋街小吃和北京欢乐谷都是很不错的地方呢。 Tiananmen, Gui Street, and Beijing Happy Valley are very nice places. usr: 我喜欢北京欢乐谷，你知道这个景点周边的酒店都是什么吗？ I like Beijing Happy Valley. What hotels are around this attraction? sys: 那可多了，有A酒店, B酒店, C酒店。 There are many, such as hotel A, hotel B, and hotel C. usr: 太好了，我正打算在景点附近找个酒店住宿呢，知道哪家评分是4分以上，提供叫醒服务的不？ Great! I am planning to find a hotel to stay near the attraction . Which one has a rating of 4 or higher and offers wake-up call service?
Schema	
usr: I want a hotel in <u>San Diego</u> and I want to check out on Thursday next week. ... usr: I need a one way flight to go there .	

CrossWOZ:

A Large-Scale Chinese Cross-Domain Task-Oriented Dialogue Dataset

Type	Single-domain goal					Multi-domain goal		
Dataset	DSTC2	WOZ 2.0	Frames	KVRET	M2M	MultiWOZ	Schema	CrossWOZ
Language	EN	EN	EN	EN	EN	EN	EN	CN
Speakers	H2M	H2H	H2H	H2H	M2M	H2H	M2M	H2H
# Domains	1	1	1	3	2	7	16	5
# Dialogues	1,612	600	1,369	2,425	1,500	8,438	16,142	5,012
# Turns	23,354	4,472	19,986	12,732	14,796	115,424	329,964	84,692
Avg. domains	1	1	1	1	1	1.80	1.84	3.24
Avg. turns	14.5	7.5	14.6	5.3	9.9	13.7	20.4	16.9
# Slots	8	4	61	13	14	25	214	72
# Values	212	99	3,871	1363	138	4,510	14,139	7,871

Task-Oriented Dialogue

Initial user state (=user goal)

id=1(Attraction): fee=free,
name=?, nearby hotels=?

id=2(Hotel): **name=near (id=1)**,
wake-up call=yes, rating=?

id=3(Taxi): **from=(id=1), to=(id=2)**,
car type=? plate number=?

...

Final user state

id=1 (Attraction): name=Tiananmen Square,
fee=free, nearby hotels=[Beijing Capital
Hotel, Guidu Hotel Beijing]

id=2 (Hotel): **name=Beijing Capital Hotel**,
wake-up call=yes, rating=4.6

id=3 (Taxi): **from=Tiananmen Square**,
to=Beijing Capital Hotel,
car type=#CX, plate number=#CP



Source: Zhu, Qi, Kaili Huang, Zheng Zhang, Xiaoyan Zhu, and Minlie Huang. "Crosswoz: A large-scale chinese cross-domain task-oriented dialogue dataset." arXiv preprint arXiv:2002.11893 (2020).

任務型對話系統

The Evaluation of Chinese Human-Computer Dialogue Technology, SMP2019-ECDT

- 自然語言理解
Natural Language Understanding (NLU)
- 對話管理
Dialog Management (DM)
- 自然語言生成
Natural Language Generation (NLG)

Summary

- AI機器人在問答與對話系統的演進
- 任務導向對話系統自然語言核心技術
- 任務導向對話系統商業應用案例分析

References

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- Day, Min-Yuh, Chi-Sheng Hung, Yi-Jun Xie, Jhih-Yi Chen, Yu-Ling Kuo and Jian-Ting Lin (2019), "IMTKU Emotional Dialogue System for Short Text Conversation at NTCIR-14 STC-3 (CECG) Task", The 14th NTCIR Conference on Evaluation of Information Access Technologies (NTCIR-14), Tokyo, Japan, June 10-13, 2019.
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- Day, Min-Yuh, Chao-Yu Chen, Wan-Chu Huang, I-Hsuan Huang and Shi-Ya Zheng, Tz-Rung Chen, Min-Chun Kuo, Yue-Da Lin, and Yi-Jing Lin. "IMTKU Question Answering System for World History Exams at NTCIR-13 QA Lab-3." The 13th NTCIR Conference on Evaluation of Information Access Technologies (NTCIR-13), Tokyo, Japan, December 5-8, 2017.
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AI 機器人與任務導向對話系統

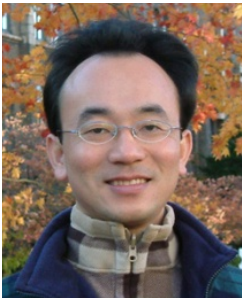
AI Robot and Task-Oriented Dialogue Systems

Host: Prof. I-Shyan Hwang
Yuan Ze University

Time: 19:00-20:30, 2020/05/22 (Friday)

Place: 1401B, Building 1, Yuan Ze University (YZU)

Address: 135 Yuan-Tung Road, Chung-Li, Taiwan



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2020-05-22

