

SNS Platform Failure Detection System (AI)

Apex

Team:

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Kim, Young Il

each smile telling a story of shared effort and success.....



Agenda

In this presentation, we'll be going over the following:

01

Exploration

02

Motivation of development and
Differentiation Existing
technology

03

Overview

04

Challenges and Solutions

05

Explanation System model

06

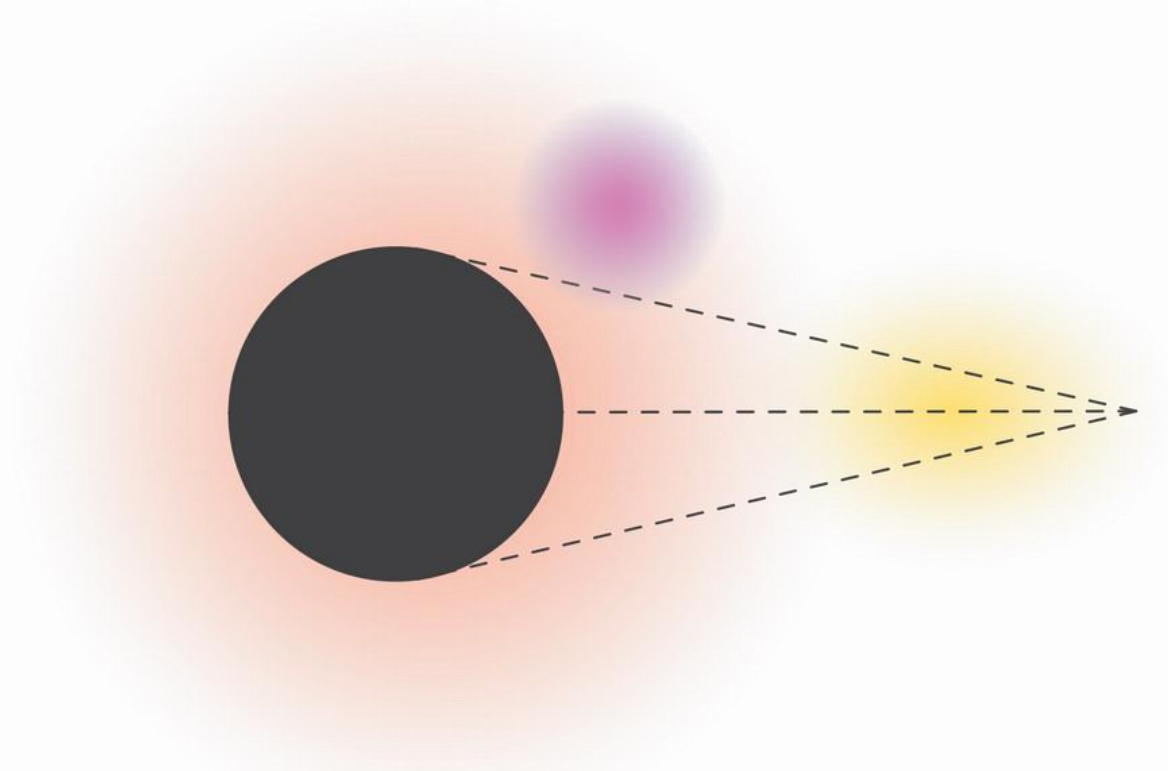
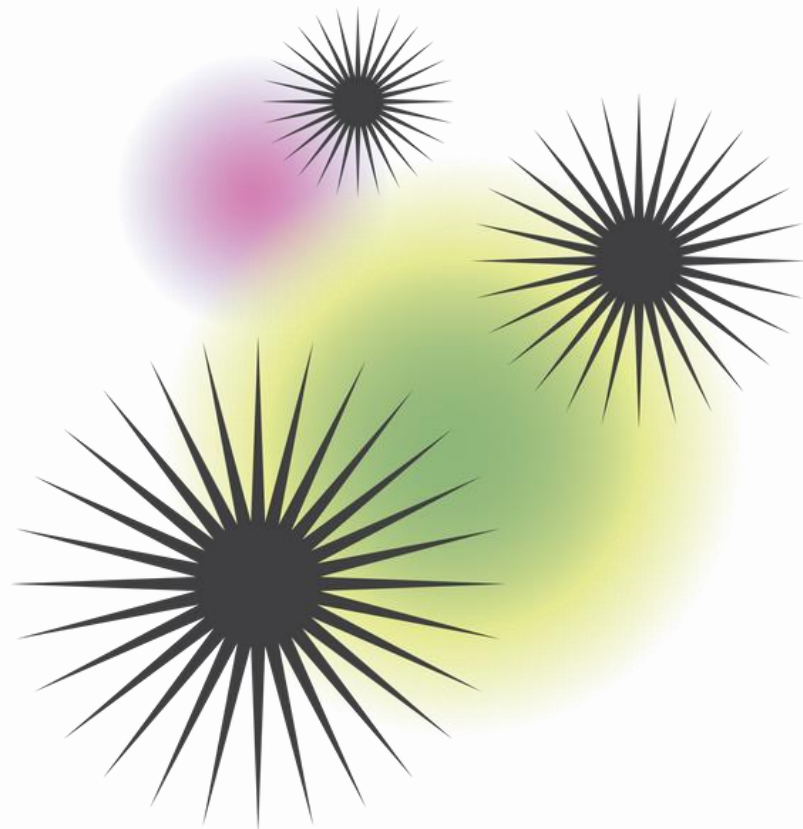
Expected effect
and utilization plan

07

Demo

08

Q&A



Our Journey During The Semester

Introducing The Project

Getting the project Idea and Tasks from the Company

Making Plan

Dividing tasks and steps, making plan how to develop with our team

System Architecture

Making System Architecture to understand the project better

Web Scraping

As it is the main root of our project we began from this

HLD

High Level Diagram

LLD

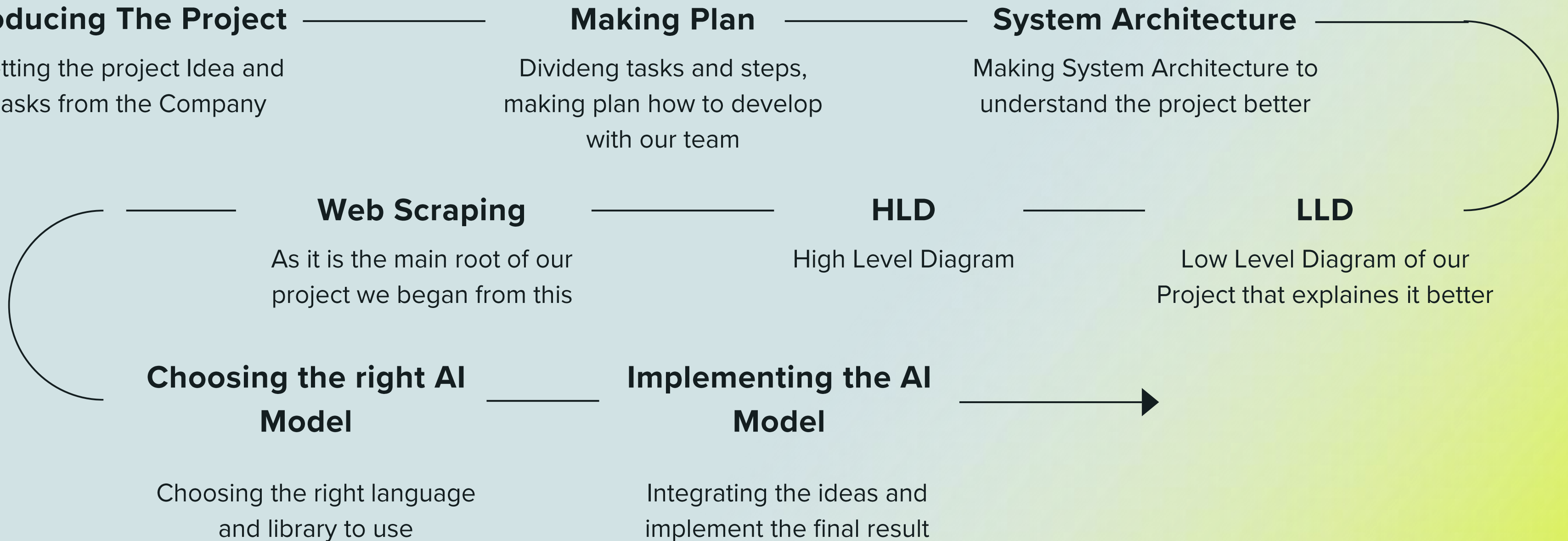
Low Level Diagram of our Project that explains it better


Choosing the right AI Model

Choosing the right language and library to use

Implementing the AI Model

Integrating the ideas and implement the final result





Temporary Error (500)

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503

Service Unavailable

The server is temporarily busy, try again later!



← 카카오톡 계정



카카오 서비스 오류 안내

예상하지 못한 오류가 발생했습니다. 서버의 일시적인 장애이거나 네트워크 문제일 수 있습니다. 해당 오류는 카카오톡에서 확인 및 대응 중입니다.

[확인](#)

Kakao service crash puts crack in company's dominance as users branch out



A Kakao employee walks into the Kakao Pangyo Aqtr, Kakao's headquarters in Seongnam, Gyeonggi, on Monday. [YONHAP]

TECHNOLOGY

Google shares drop \$100 billion after its new AI chatbot makes a mistake

FEBRUARY 9, 2023 · 10:15 AM ET

By Emily Olson



Kakao Faces Class Action Suit As It Loses 2 Million Users Resulting from Service Disruption

Meanwhile two messaging operators significantly gain users.



NEWS

October 18th, 2022

Kakao is now dealing with severe backlash following the disruption of Kakao Talk service for more than 10 hours on October 15 due to a fire at an SK C&C data center in Seongnam, Gyeonggi Province.

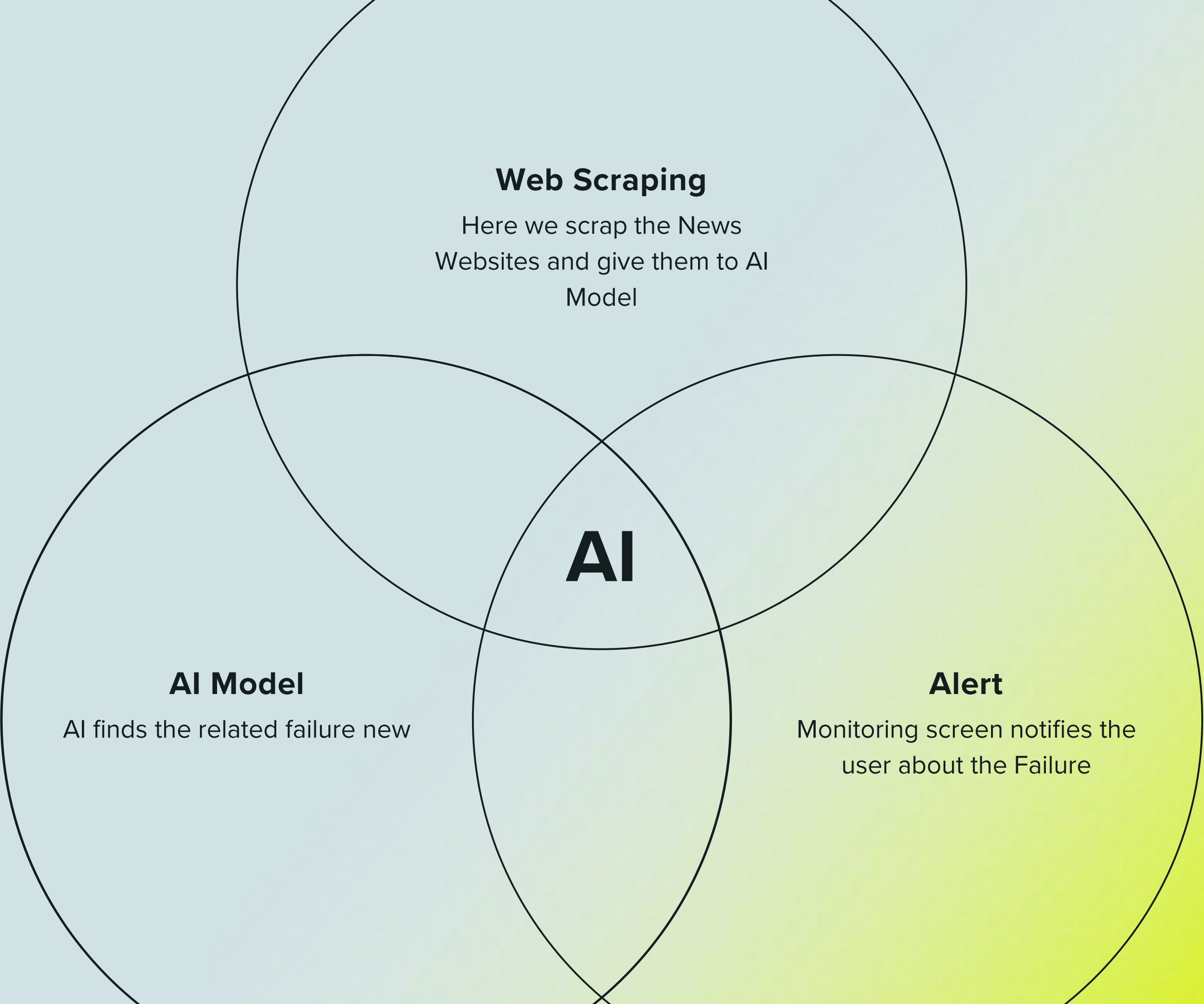
Google recognized failure and announced 30 min later
 → Google lost [\\$2.3 million](#).

Kakao recognized failure 44 min after the fire
 → Kakao lost [2 million](#) users.

HERE COMES A QUESTION:

HOW CAN WE QUICKLY NOTICE THE FAILURE ON EACH PLATFORM WHERE THE FAILURE OCCURED SO THAT THEY DON'T MISS THE GOLDEN HOUR ?

Let's find the Solution



Apex

Motivation of Development

In embarking on our capstone project, we were presented with a compelling challenge by a forward-thinking company: developing a Social Networking Services (SNS) platform failure detection system based on news analysis.

Motivation

The motivation behind this endeavor stems from the critical need to enhance the resilience and reliability of contemporary social media platforms. As these platforms have become integral to global communication, their failures can have far-reaching consequences.

The Purpose

The purpose of our project is to proactively identify potential issues by leveraging news data, enabling timely interventions and minimizing user impact.

The necessity of such a system is evident in the increasing reliance on SNS platforms and the potential for widespread disruptions when these platforms falter.

Technical Research, differentiation from existing technology

Unlike existing technologies and products, our approach harnesses the power of advanced natural language processing and sentiment analysis algorithms to dynamically scan news sources for indicators of potential platform failures.

Overview

System model

The failure detection system collects all the latest news from about 40 media companies and analyzes its meaning using the AI model.

Whether the AI model has a failure on the platform through each news.

If a failure occurs by determining whether or not, it will send a notification that the failure has been detected along with a link to an article related to it.

Process of developing a failure detection system

In the crawling part for post collection,

Previous way:

Collecting News articles related to each platform individually using keywords



Confirmed that there are news that is not related at all in collected news



Changed way:

Collecting all latest News articles

Features

Real-time Monitoring

Continuous monitoring of critical system parameters.

Alerting Mechanism

Instant notifications via email, SMS, or other configurable channels.

Customizable

Set threshold values for different parameters to tailor the system to your needs.

Historical Data

Maintain a record of historical data for analysis and trend identification.

Solution Overview

>20,000 latest news
from 40+ platforms
in 8 seconds

 이데일리	 일간스포츠	 매일경제	 세계일보	 스포츠조선
 조선비즈	 오마이뉴스	 연합뉴스 TV	 아이뉴스 24	 스포츠서울
 조선일보	 코리아중앙데일리	 중앙일보	 스포츠동아	 MBN
 지디넷코리아	 지지통신	 코리아헤럴드	 시사인	 MBC
 파이낸셜뉴스	 프레시안	 YTN	 JTBC	 SBS
 한겨레	 한국경제	 헤럴드경제	 KBS	 OSEN
 한국경제TV	 한국일보	 블로터	 노컷뉴스	+5 more



What we need to Consider

- Speed
- Accuracy
- Data Source

Challenges and Solutions During the Project

Title	Potential Challenge	Proposed Solution
Web Scraping	Finding the right library	Some websites block scraping. Selenium was the best option
Finding Data	Lack of failure news for training	Actively searching for data with our team
AI Model	Finding the right Model for both Korean and English Languages	Universal Sentence Encoder , BERT, Huggingface pre-trained model

Data Collection Step

- List of Web Sites**

 1. Naver
 2. Kakao
 3. Daum
 4. Google News
 5. News related websites

Keywords
Related Words to our target

Data Collection Module

Python:

1. Crawl the WebSites
2. Collect Data in JSON format
3. Filtering the Data

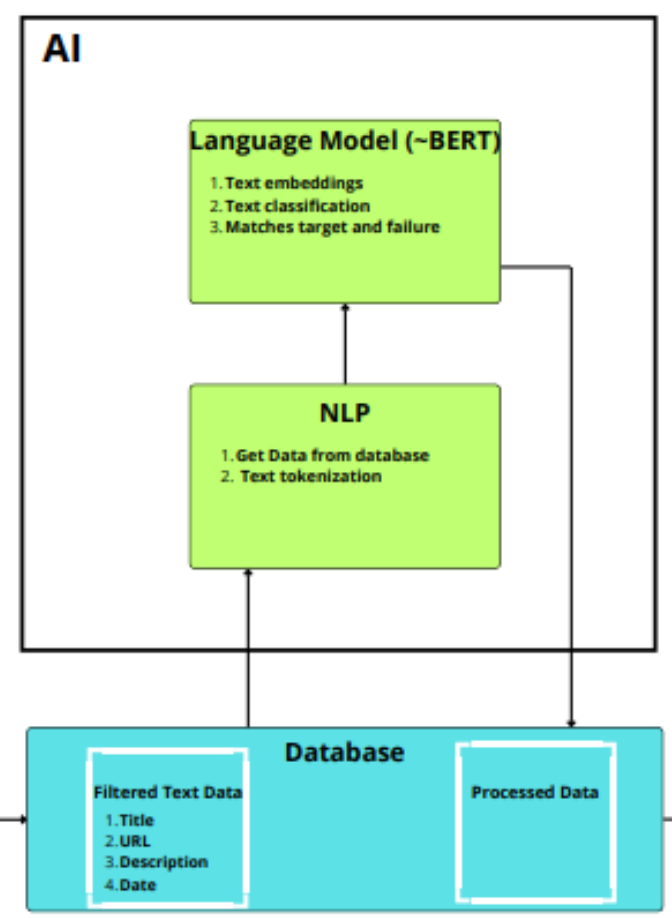
Data in JSON Format

```

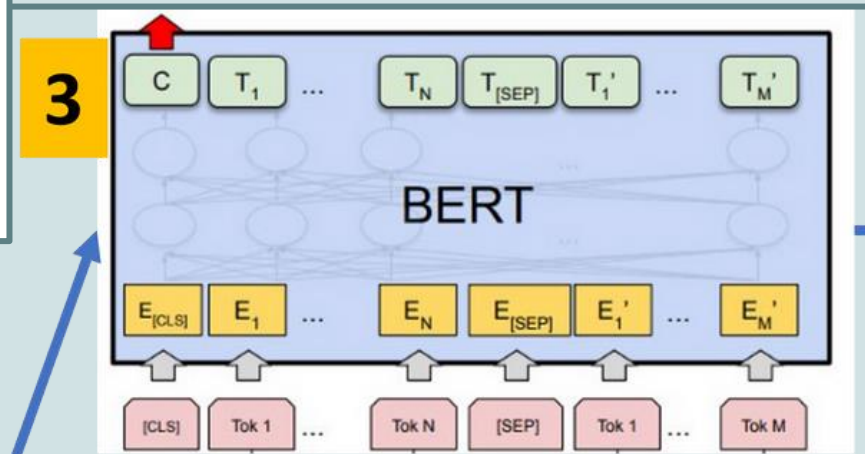
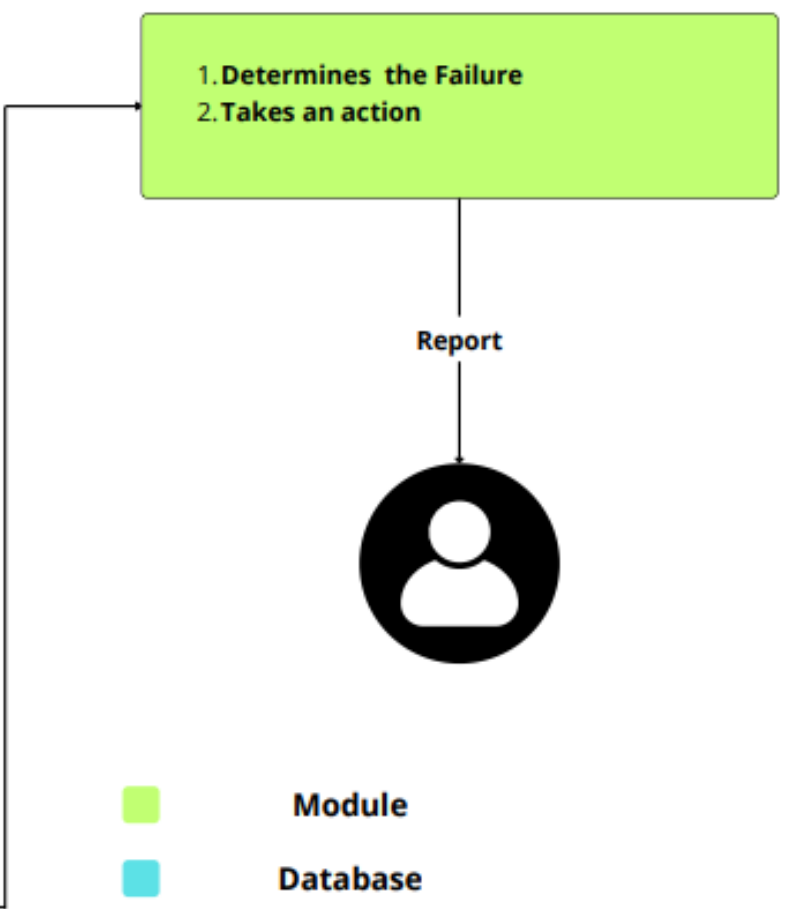
{
  "src": "SGML",
  "GlossTerm": "Standard Generalized Markup Language",
  "Acronym": "SGML",
  "Abbrev": "ISO 8879:1986",
  "GlossDef": {
    "para": "A meta-markup language, used to create markup languages such as DocBook."
  }
}
        
```

- We have (Keywords, List of websites)
- Our Web Scraping Model gets data based on them
- It gives us HTML data (related)
- WE will filter them and send to Database
- AI Model gets Filtered data from Database

Semantic Analysis Model



Action Trigger Module



1



2

```

{"title": "'오늘도 사랑스럽게' 김이경X이현우, 묘하게 끌리는 이유",
"desc": "'오늘도 사랑스럽게' 김이경과 이현우의 관계에는 과거 어떤 사건이 숨겨져 있을지 관심이 쏠리고",
"url": "https://v.daum.net/v/20231123181203875"},
{"title": "'송년특집' 문화교류 통해 중국단체관광객 유치한다",
"desc": "'송년특집' 중국과의 청소년 문화 교류를 시작으로 단체관광객을 늘려간다. 도는 23-24일 중국 청소년",
"url": "https://v.daum.net/v/2023112318101827"},
{"title": "[속보] 산은 \"/>
        
```

4

Is Failure detected?

Notification

Expected effect



Build trust with user:

Build user trust by quickly recognizing and coping with failures



Prevent the loss of revenue:

Prevent major damage by not missing the golden hour in case of failure

Utilization plan

Estimate and select the cause of the failure, identifying common problems among user feedbacks

Use as a **system to detect potential failures** before they occur by analyzing the patterns of user feedbacks



Sardor

Phase 1

- Developing the Web Scraper
- Getting on well with the Project

Phase 2

- Making Weekly reports
- Finding Information
- Making Plans

Phase 3

- Developing the AI

Phase 4

- Finding the best Model
- Developing the Ai



Juuouna

- Developing the Web Scraper
- Getting on well with the Project

- Making Weekly reports
- Finding Information
- Making Plans

- Making Presentations

- Finding the AI Model
- PPT slides
- Competition preparations



Daler

- Developing the Web Scraper
- Getting on well with the Project

- Making Weekly reports
- Finding Information
- Making Plans

- Finding Data (News)

- Scraping given web sites
- Testing web Scraper



Rustam

- Developing the Web Scraper
- Getting on well with the Project

- Making Weekly reports
- Finding Information
- Making Plans

- Writing Reports and Documentations

- Contributing for AI Model development
- Finding and making Datasets

Demo

Personal localhost

RUNNING... Stop Deploy

SNS Platforms Failure Detection System

Analyze Now

Analyzing failure-related news in real-time...

id	title	desc
0	카카오 모은 서비스 장애, 이르면 밤 10시쯤 재개 예정	[영커] 오늘 오후부터 카카오톡 등 카카오 관련 모든 서비스
1	수도권 아파트 거래 급감 속 하락 거래 비중 확대	최근 수도권 아파트 거래량이 급감한 가운데 종전 거래비
2	'우리 딸 고생 했다'	[서울=연합뉴스] 김도훈 기자 = 26일 오전 2024학년도 수
3	'병역의 벽에 막혀' 안광수, 지난해 두산 이어 롯데에도 불발	프로야구 롯데가 재일 교포 3세 외야수 안광수(30)와 알별
4	황정민 "강추돌과 같은 학교 같은 반... 앓을 크고 시끄러웠다"	[서울=뉴스1] 김학진 기자 = 배우 황정민이 씨름선수 출신
5	AUSTRALIA GOLF	epu10955570 Crowds look on during the final round
6	전남 주재서 화재 잇따라...1명 사망 3명 부상	초저물때 접어든 전남 자리에 화재 화재로 인한 인명피해
7	단양군, 2년 연속 환경부 '탄소중립 우수 지자체' 선정	[단양=뉴스1] 조영석 기자 = 충북 단양군이 환경부의 202
8	충남도, 중국인관광객 유치율 위한 본격 시동	충남문화관광재단(이하 재단)이 중국인 관광객 유치를 발
9	전주시 2023 기부자의 날 행사...홍경식, 정찬모 등 표창	만물을 맞아 뜻깊은 기부물 받은 분들에게 감사를 전하는

Analysis Result

Generating embeddings for the data... Please wait.

By APEX Team for EurusOSent (유용한인공지능)

Made with Streamlit

Q&A

Thank you for your attention!