



# Constructing HKU COVID-19 DIGITAL ARCHIVES

Harnessing AI for Building Comprehensive  
Research Collection

# Agenda

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Project outline

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Website walkthrough

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What we have done

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Coping with the AI challenge

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Q & A



# Forward

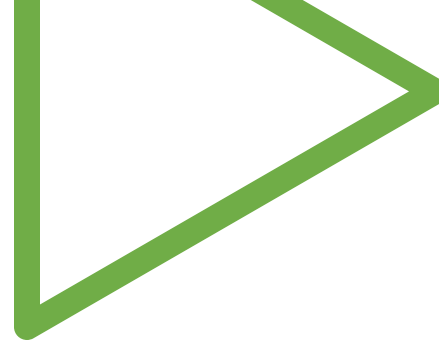
- This project aims to collect, preserve and provide access to the digitally born records relating to the COVID-19 created by The University of Hong Kong. A designated Digital Archives that serves as a centralised repository of all HKU produced digital materials including electronic scholarly articles, publications, research data and media presentations in audio-visual formats. Other records of major HKU-sponsored activities such as the LYH Community Vaccination Centre and the LoveU LoveHK initiative will also be included.
- This project will try to cover all outputs from all departments, faculties and administrative units as extensive as possible. The final digital platform will serve as public access point and will be searchable and be accessible by local and international communities within the allowance of copyright and privacy ordinance.

# KE Funded Project

- In Feb 2020. The FightCovid19 (<https://fightcovid19.hku.hk/>) web site was launched to highlight the work on COVID19 across HKU faculties and departments. The site consists of mostly contents aggregated from across the university, with some original content (such as the series of live video interviews with HKU experts.) The site was put on hiatus in 2020, when COVID19 took a break.
- As the 2.0 version of the 2020 FightCovid19 site, the proposed project will be much enhanced with stronger search capacity, automatic aggregation. The site will also be sustainable and continuously updated until COVID becomes endemic.

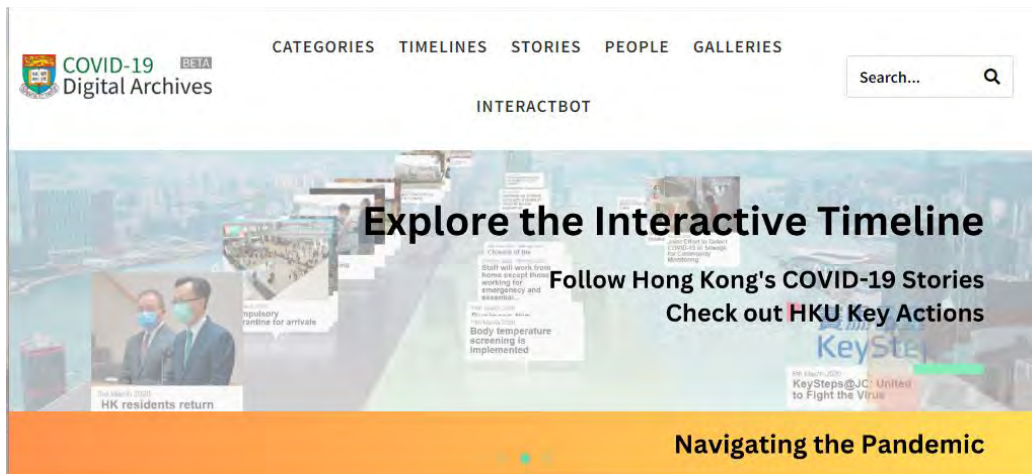
## Design philosophy

- Promote /show off HKU contributions during pandemic
- Record + Story + Archive
- For researchers and also general public



# HKU COVID-19 Digital Archives (<https://covid19.lib.hku.hk>)

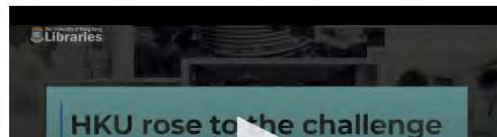
- To collect, preserve and provide access to the digitally born records relating to the COVID-19 created by The University of Hong Kong.
- Act as a centralised repository of all HKU produced digital materials
  - including electronic scholarly articles, publications, research data and media presentations in audio-visual formats.



Overview

## Discover HKU COVID-19 Digital Archives


Discover the unwavering efforts of the dedicated members of the HKU community in responding to the COVID-19 pandemic. From groundbreaking research on the virus and its transmission, to impactful activities aimed at educate and inform the public, the HKU community is at the forefront of the fight against COVID-19.



**160+**  
HKU units involved



**800+**  
Scholars contributed



**11,000+**  
Items recorded



# Website Walkthrough



Overview

## Discover HKU COVID-19 Digital Archives



# Challenges

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Time constraint (Mid Dec 2022 – June 2023)

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Limited manpower

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Heterogenous data type

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Diverse data sources

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Copyright and license

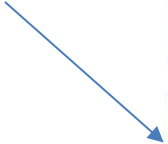
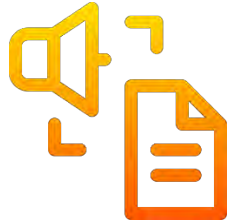
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Web pages have been taken down



# Data Processing Flow Diagram

Web/data scrapping



Azure OpenAI  
GPT-4



Extract Information



Summarize text



NER

Digital Archive System



YouTube, WikiData, PubMed, DOI API



Visualization & Stories

# Content management system

WordPress

Advantage:

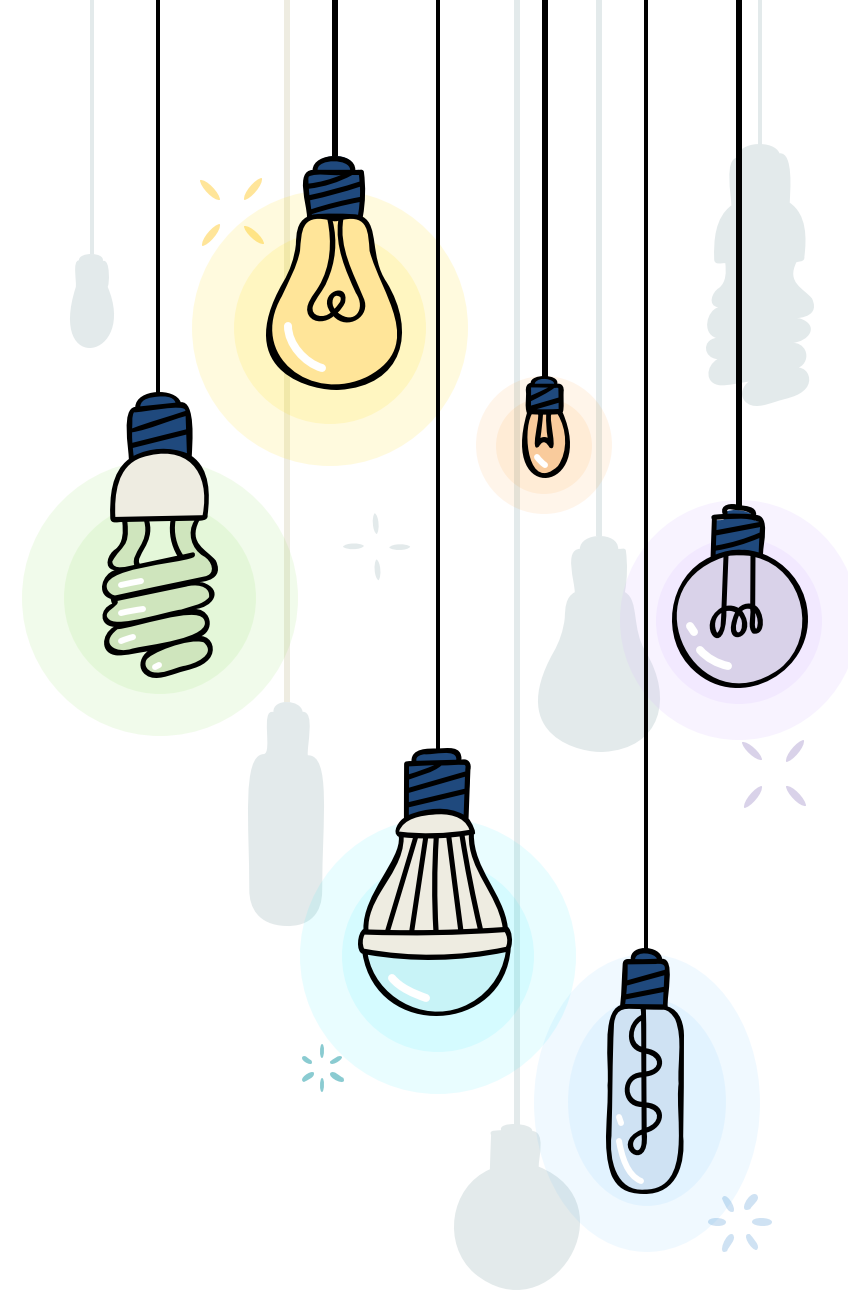
- Low code
- Minimize the webpage design work
- Plugin (e.g. Elementor, Jupiter X) as website builder, with lots of template

Disadvantage:

- Slow and lagging if it hosts too much data
- May not be able to customize the style or function setting



# + How do we collect the data?



# Data Collection from Web Scraping

## News:

Major source: WiseNews to get the title, text content, date, publisher;

GovNews to get gov policy related news

Supplementary: Google search engine to get the News source link

Challenge: Cannot send too many requests to google, IP address will be blocked

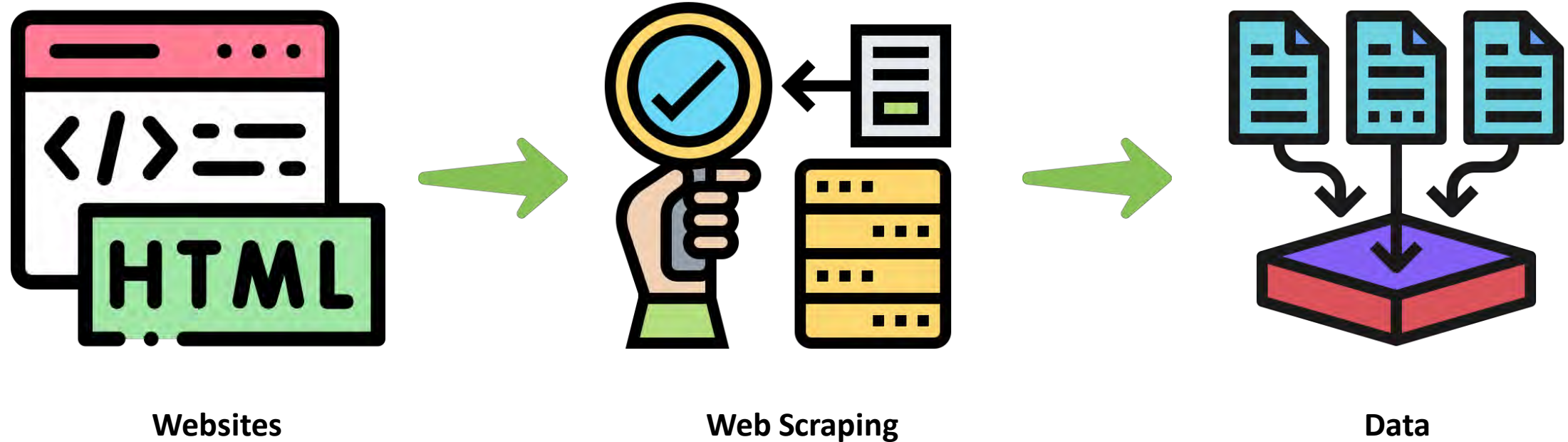
## HKU organised event:

Major source: HKU press release, HKU UVision, HKU E-notice

Supplementary: email to Faculty to gather the remaining events

The logo for WiseNews, featuring the word "WiseNews" in a bold, blue, sans-serif font.The multi-colored Google logo, with the letters G (blue), o (red), o (yellow), g (blue), l (green), and e (red).The logo for news.gov.hk, featuring the word "news." in red, "gov.hk" in black, and "政府新聞網" in red Chinese characters below.

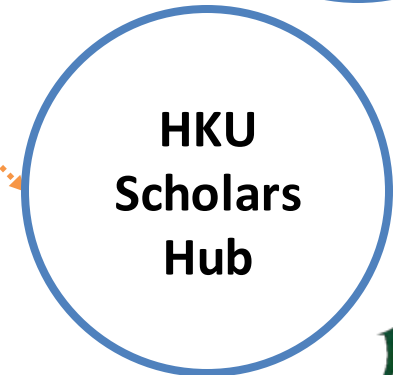
# Data Collection from Web Scraping



- Python libraries like Requests-HTML, BeautifulSoup & Selenium to effectively extract HTML code from websites and parse it into Python objects.
- For no-code option, you can use Chrome Extension e.g. Data Miner, Web Scraper

# Data Collection from APIs

➤ Obtain title, description, tag, thumbnail, transcript for HKU related COVID-19 YouTube video



➤ Obtain Abstract, Subject, Author, Publish Date, Affiliation for HKU related COVID-19 research paper



- Pages
- Comments 10
- programme series
- Stories
- Map
- People
- Covid resources**
- Covid resources
- Add New Post
- video structure
- Place\_id\_covid\_resources
- Visualisation
- Contributor
- Non HKU People
- HKU people
- Organisation
- RPID\_covid resources
- News Author
- Resource type
- Wave of Covid
- Subject
- Category
- Sellkit
- Elementor
- Templates
- Crocoblock

Edit with Elementor

- Covid resources Block X
- Summary
- video structure
- Place\_id\_covid\_resources
- Visualisation
- Contributor
- Non HKU People
- HKU people
- Organisation
- RPID\_covid resources
- News Author
- Resource type
- Wave of Covid
- Subject
- Category

**Settings**

**Resource ID**  
Name: resource-id  
WW\_205

**Resource title**  
Name: resource-title  
抗疫優先：生死別離誰管得？ = Priority in fighting the pandemic: Who can control life and death?

**Resource description**  
Name: resource-description  
隔離確診新冠病毒的病人以防病毒肆虐，在法理上都是合理的；不過長者或垂危的病人會因此得不到親人的照顧，探訪而覺得特別孤獨甚至抑鬱。在反思法理與人情之間的平衡。

**Resource description 2**  
Name: resource-description-2

**Resource date**  
Name: resource-date  
August 15, 2021

**Source URL**  
Name: source-url  
[https://mmis.hkpl.gov.hk/coverpage/-/coverpage/view?p\\_r\\_p\\_-1078056564\\_c=QF757YsWv5%2Bn4efK&nHqLzd2nFx5Sqv](https://mmis.hkpl.gov.hk/coverpage/-/coverpage/view?p_r_p_-1078056564_c=QF757YsWv5%2Bn4efK&nHqLzd2nFx5Sqv)

**citation**  
Name: citation

**Publisher**  
Name: publisher

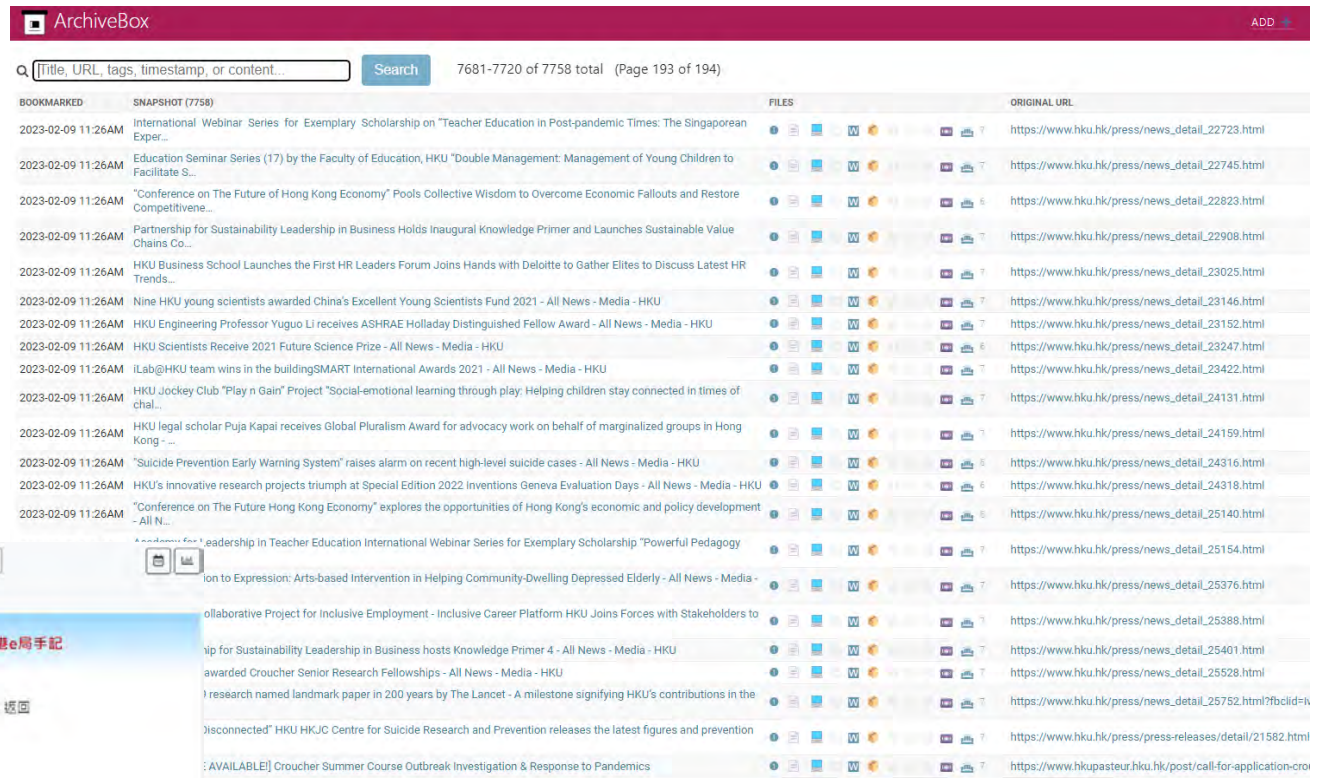
**author\_ordered**  
Name: author\_ordered



# Web archiving

## ➤ ArchiveBox (A self-hosted web archiving)

- Preserved the webpage as it can be taken down in the future
- Save web archive files(WARCS), html, media
- But Facebook post cannot be archived



BOOKMARKED	SNAPSHOT (7758)	FILES	ORIGINAL URL
2023-02-09 11:26AM	International Webinar Series for Exemplary Scholarship on "Teacher Education in Post-pandemic Times: The Singaporean Exper...		<a href="https://www.hku.hk/press/news_detail_22723.html">https://www.hku.hk/press/news_detail_22723.html</a>
2023-02-09 11:26AM	Education Seminar Series (17) by the Faculty of Education, HKU "Double Management: Management of Young Children to Facilitate S...		<a href="https://www.hku.hk/press/news_detail_22745.html">https://www.hku.hk/press/news_detail_22745.html</a>
2023-02-09 11:26AM	"Conference on The Future of Hong Kong Economy" Pools Collective Wisdom to Overcome Economic Fallout and Restore Competitiveness...		<a href="https://www.hku.hk/press/news_detail_22823.html">https://www.hku.hk/press/news_detail_22823.html</a>
2023-02-09 11:26AM	Partnership for Sustainability Leadership in Business Holds Inaugural Knowledge Primer and Launches Sustainable Value Chains Co...		<a href="https://www.hku.hk/press/news_detail_22908.html">https://www.hku.hk/press/news_detail_22908.html</a>
2023-02-09 11:26AM	HKU Business School Launches the First HR Leaders Forum Joins Hands with Deloitte to Gather Elites to Discuss Latest HR Trends...		<a href="https://www.hku.hk/press/news_detail_23025.html">https://www.hku.hk/press/news_detail_23025.html</a>
2023-02-09 11:26AM	Nine HKU young scientists awarded China's Excellent Young Scientists Fund 2021 - All News - Media - HKU		<a href="https://www.hku.hk/press/news_detail_23146.html">https://www.hku.hk/press/news_detail_23146.html</a>
2023-02-09 11:26AM	HKU Engineering Professor Yuguo Li receives ASHRAE Holladay Distinguished Fellow Award - All News - Media - HKU		<a href="https://www.hku.hk/press/news_detail_23152.html">https://www.hku.hk/press/news_detail_23152.html</a>
2023-02-09 11:26AM	HKU Scientists Receive 2021 Future Science Prize - All News - Media - HKU		<a href="https://www.hku.hk/press/news_detail_23247.html">https://www.hku.hk/press/news_detail_23247.html</a>
2023-02-09 11:26AM	iLab@HKU team wins in the buildingSMART International Awards 2021 - All News - Media - HKU		<a href="https://www.hku.hk/press/news_detail_23422.html">https://www.hku.hk/press/news_detail_23422.html</a>
2023-02-09 11:26AM	HKU Jockey Club "Play n Gain" Project "Social-emotional learning through play: Helping children stay connected in times of chal...		<a href="https://www.hku.hk/press/news_detail_24131.html">https://www.hku.hk/press/news_detail_24131.html</a>
2023-02-09 11:26AM	HKU legal scholar Puja Kapai receives Global Pluralism Award for advocacy work on behalf of marginalized groups in Hong Kong - ...		<a href="https://www.hku.hk/press/news_detail_24159.html">https://www.hku.hk/press/news_detail_24159.html</a>
2023-02-09 11:26AM	"Suicide Prevention Early Warning System" raises alarm on recent high-level suicide cases - All News - Media - HKU		<a href="https://www.hku.hk/press/news_detail_24316.html">https://www.hku.hk/press/news_detail_24316.html</a>
2023-02-09 11:26AM	HKU's innovative research projects triumph at Special Edition 2022 Inventions Geneva Evaluation Days - All News - Media - HKU		<a href="https://www.hku.hk/press/news_detail_24318.html">https://www.hku.hk/press/news_detail_24318.html</a>
2023-02-09 11:26AM	"Conference on The Future Hong Kong Economy" explores the opportunities of Hong Kong's economic and policy development - All N...		<a href="https://www.hku.hk/press/news_detail_25140.html">https://www.hku.hk/press/news_detail_25140.html</a>
	Leadership in Teacher Education International Webinar Series for Exemplary Scholarship "Powerful Pedagogy		<a href="https://www.hku.hk/press/news_detail_25154.html">https://www.hku.hk/press/news_detail_25154.html</a>
	tion to Expression: Arts-based Intervention in Helping Community-Dwelling Depressed Elderly - All News - Media -		<a href="https://www.hku.hk/press/news_detail_25376.html">https://www.hku.hk/press/news_detail_25376.html</a>
	collaborative Project for Inclusive Employment - Inclusive Career Platform HKU Joins Forces with Stakeholders to		<a href="https://www.hku.hk/press/news_detail_25388.html">https://www.hku.hk/press/news_detail_25388.html</a>
	ip for Sustainability Leadership in Business hosts Knowledge Primer 4 - All News - Media - HKU		<a href="https://www.hku.hk/press/news_detail_25401.html">https://www.hku.hk/press/news_detail_25401.html</a>
	awarded Croucher Senior Research Fellowships - All News - Media - HKU		<a href="https://www.hku.hk/press/news_detail_25521.html">https://www.hku.hk/press/news_detail_25521.html</a>
	research named landmark paper in 200 years by The Lancet - A milestone signifying HKU's contributions in the		<a href="https://www.hku.hk/press/news_detail_25752.html?fbclid=H">https://www.hku.hk/press/news_detail_25752.html?fbclid=H</a>
	isconnected" HKU HKJC Centre for Suicide Research and Prevention releases the latest figures and prevention		<a href="https://www.hku.hk/press/press-releases/detail/21582.html">https://www.hku.hk/press/press-releases/detail/21582.html</a>
	AVAILABLE] Croucher Summer Course Outbreak Investigation & Response to Pandemics		<a href="https://www.hkupasteur.hku.hk/post/call-for-application-cro">https://www.hkupasteur.hku.hk/post/call-for-application-cro</a>

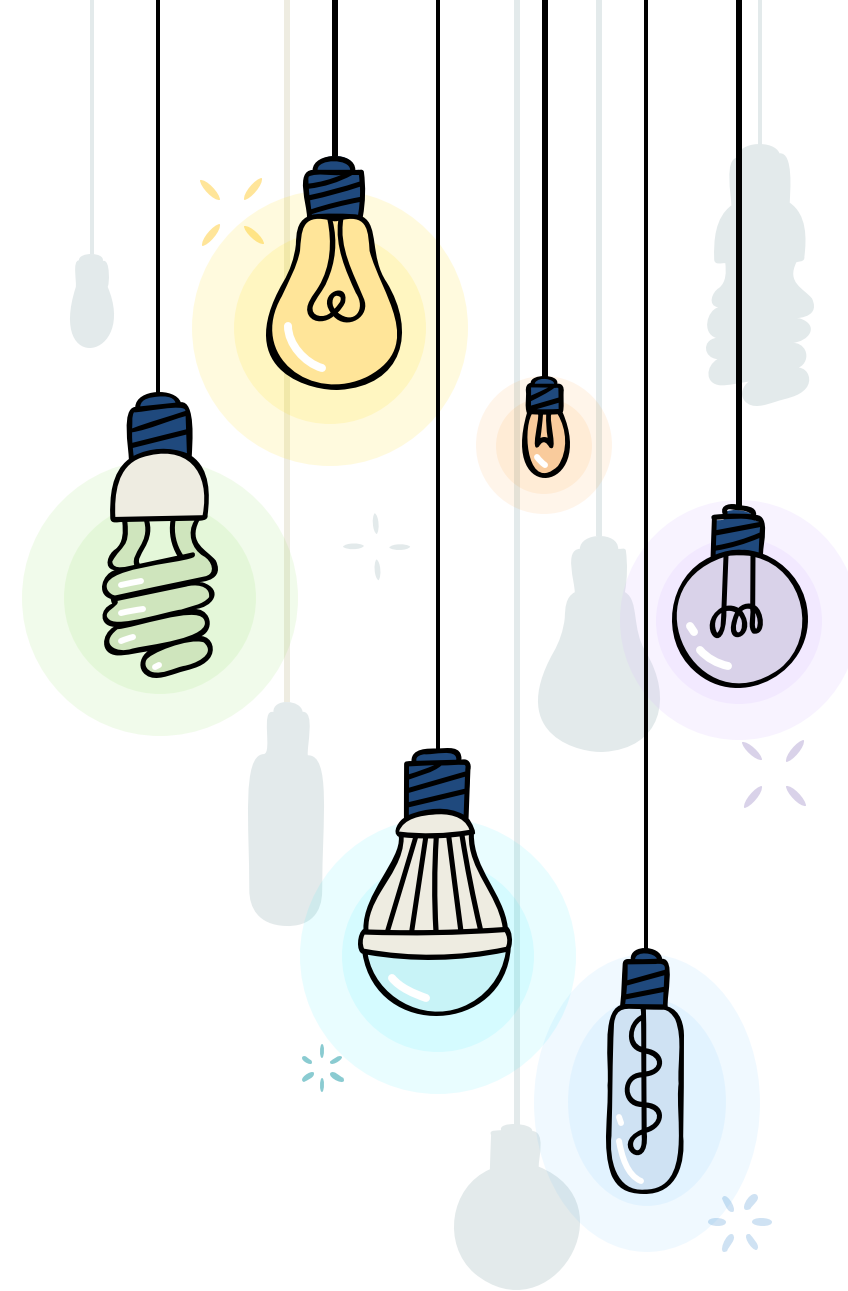


## ➤ Pywb (Python Wayback Machine)

- Replay the archived web data stored in WARC
- Easy for user to access the archived webpage



+ **How do we  
process the data?**



# What information to be extracted from the scrapped data?

News: Text

Research articles: Text

Media: Video (get transcript: Text)

Webpage: Text

Information to be extracted:

Title, date, Description, people, organization, keywords

Method:

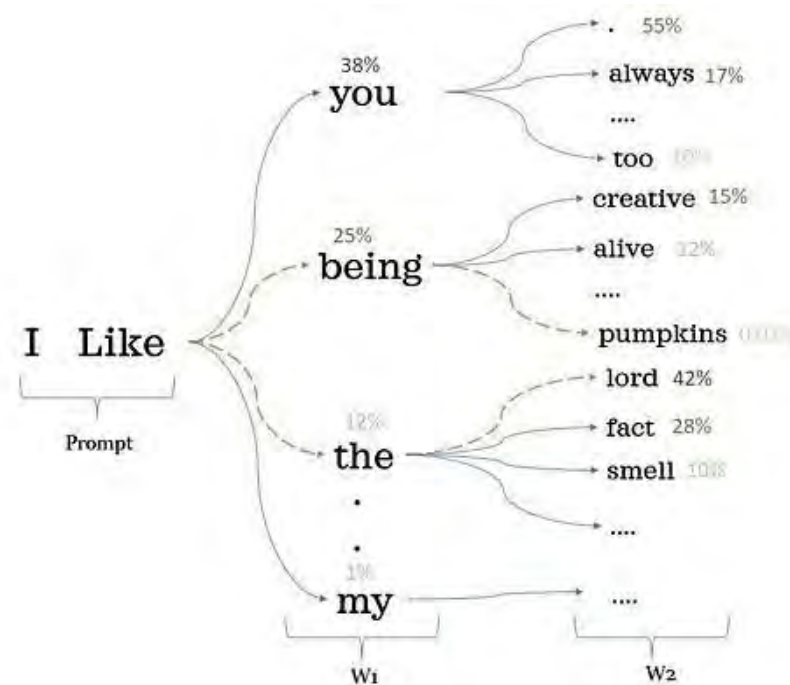
- Applied NLP (HanLP) for Chinese entity before the release of OpenAI, but have text limit
- Applied OpenAI LLM for information extraction

The screenshot shows a news article page with the following details:

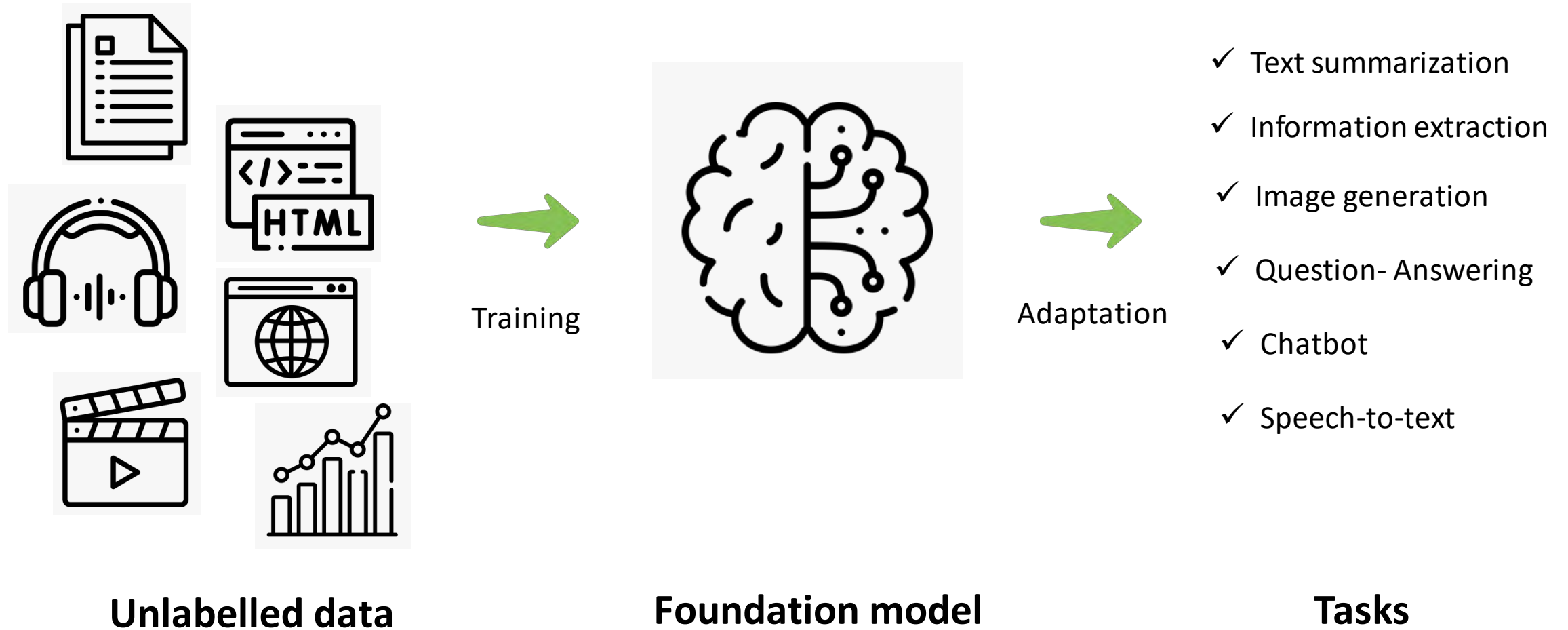
- Title:** 保障冷凍食品安全 嚴防病毒輸入風險
- Author:** Chan Sophia, Siu Chee
- Organization:** School of Nursing
- Buttons:** Go to Link (with arrow icon), Archive (with lock icon)
- Description:** 局長網誌(前食物及衛生局):為防止新冠病毒通過冷凍食品輸入和傳播,食物環境衛生署加強對來自不同國家/地區進口的冷凍食品及其包裝進行檢測,已檢測超過1,000個樣本,所有結果均為陰性。該部門還為冷凍食品行業的工人制定了加強個人和環境衛生的指南,並為持牌冷藏庫工人安排自願和免費的病毒檢測。
- Resource Type:** Article
- Keywords:** #個人衛生 #冷凍食品安全 #冷藏庫工人 #指南 #新冠病毒防控 #環境衛生 #病毒檢測 #進口冷凍食品 #食物環境衛生署
- Addition Details:**
  - Date: 2020-12-27
  - Wave of COVID: 4th
  - Category: Welfare and Wellbeing
  - Source URL: [https://www.healthbureau.gov.hk/blog/cn/2020/post\\_202012](https://www.healthbureau.gov.hk/blog/cn/2020/post_202012)
- Share:** Facebook, Twitter, WhatsApp, Email, LinkedIn

# Understand how does LLM work

- LLM is a deep learning model that based on transformers, a type of neural network architecture
- Transformers architecture allows to train models on massive text dataset and learns context and meaning by tracking relationships in data.
- To simplify: LLM is a language model to learn the patterns and relationship between words



# Foundation model functionality



# Process data with Azure OpenAI LLM

## 維生素A+精油治療 恢復新冠患者嗅覺



NER

Hung Fan  
Ngai Ivan

Li Ka Shing Faculty of Medicine

Go to Link →

Archive



Summarize text

### Description

香港大學的一項研究發現，新冠肺炎患者失去嗅覺功能後，服用維生素A並使用芳香療法可以改善病情。該團隊對兩名患者進行了全面評估，包括鼻腔內窺鏡檢查、定量嗅覺靈敏度評估和大腦功能性磁力共振掃描。結果顯示，維生素A和芳香療法的結合可以促進患者嗅覺感官和嗅覺神經網絡功能的恢復。

Journalist

郭詩詩

Publisher

香港經濟日報

Resource Type

NewsArticle

### Addition Details

Date: 2021-06-08

Category: News

Source URL:

<https://paper.hket.com/article/2976803/%E7%B6%AD%E7%9%E7%B2%BE%E6%B2%B9%E6%B2%BB%E7%99%82%20%E>

Share



Information  
Extraction

#嗅覺 #新冠肺炎 #維生素A #芳香療法

# Prompt

Example prompt: *“You are a journalist. Extract people, organization, top 10 subjects (exclude COVID and \‘hong kong\’) and summary in traditional chinese and english. Desired JSON Format: {“people\_en”:[],“people\_zh”:[],“org\_en”:[],“org\_zh”:[],“summary\_en”:“”,“summary\_zh”:“”,“keyword\_en”:[],“keyword\_zh”:[]}”*

Sample output: {“keyword\_en”: [“Henry Fok Foundation”, “Macau”, “donation”, “University of Hong Kong”, “Li Ka Shing Faculty of Medicine”, “epidemic monitoring program”, “COVID-19”, “community transmission”, “10,000 participants”, “12 weeks”], “keyword\_zh”: [“澳門霍英東基金”, “捐款”, “香港大學”, “李嘉誠醫學院”, “疫情監察計劃”, “新冠病毒”, “社區傳播”, “一萬名參加者”, “十二星期”, “即時數據”], “summary\_en”: “The Henry Fok Foundation in Macau has donated HKD 10 million to support the University of Hong Kong’s Li Ka Shing Faculty of Medicine in implementing the ‘United We Stand Epidemic Monitoring Program’. The program aims to collect real-time data from the local community to assess and monitor the community transmission of COVID-19 in Hong Kong. It will recruit 10,000 participants, including those who have completed or are currently participating in large-scale research projects managed by the HKU Faculty of Medicine’s School of Public Health, as well as randomly sampled citizens from all 18 districts in Hong Kong. The program will begin soon and initially last for 12 weeks.”, “summary\_zh”: “澳門霍英東基金捐款一千萬港元支持香港大學李嘉誠醫學院推行「眾志成城疫情監察計劃」。該計劃旨在收集本港社區的即時數據，以評估及監察香港新冠病毒的社區傳播情況。計劃將招募一萬名參加者，包括已完成或正在進行港大醫學院公共衛生學院管理的大型研究計劃的參加者，以及全港十八區隨機抽樣的市民。計劃將於日內開始，初步為期十二星期。”}

# Process data with Azure OpenAI LLM (Example of worksheet)

headline	source	ageNr	sectio	publishDate	news_url	wisenevs_docId	fulltext	summary_zh	summary_en	keywords_zh	keywords_en	people_zh	people_en	org_zh	org_en
尚港現病例學者倡	明報	A04	港聞	2020-01-05	https://news.i	news:2709^2020010	武漢肺炎病因	中大呼吸系統科講座 Professor Xu Shuch	Professor Xu Shuch	["SARS", "冠狀病毒", "港"]	["SARS", "coronaviru"]	["許樹昌", "曹軼"]	["Xu Shuchang", "Kwoi"]	["香港中文大學", "香港大"]	["Chinese University of Hor
袁國勇料內地已知	香港經濟	A17	港聞	2020-01-08	https://paper.	news:24jc^20200108	武漢不明肺炎	袁國勇表示, 內地經	Yuen Kwok-yung, a	["武漢", "冠狀病毒", "鄂"]	["Wuhan", "coronavi"]	["袁國勇"]	["Yuen Kwok-yung"]	["港大"]	["University of Hong Kong"]
何栢良促覓野味源	明報	A02	要聞	2020-01-10	https://news.i	news:2790^2020011	武漢不明肺炎	專家估計武漢冠狀病	Experts estimate th	["冠狀病毒", "武漢", "海"]	["coronavirus", "Wul"]	["黃婉婷", "何栢良"]	["黃婉婷", "何栢良"]	["台灣疾病管制署", "香港"]	["Taiwan Centers for Diseas
內地揭新冠狀病毒	明報	A02	要聞	2020-01-10	https://news.i	news:27j0^2020011	武漢不明肺炎	內地專家已經確認武	Experts from mainl	["新型冠狀病毒", "武漢"]	["new coronavirus", "袁國勇", "黃加"]	["Yuen Kwok-yung", "H"]	["香港大學", "世界衛生組"]	["Hong Kong University", "W	
武漢肺炎遞流感高	晴報	P02	港聞	2020-01-10	https://skypos	news:25de^2020011	武漢不明肺炎	武漢肺炎病原體已被	The Wuhan pneum	["武漢肺炎", "新型冠狀"]	["Wuhan pneumonia"]	["王月丹", "黃加"]	["Wang Yuedan", "Hua"]	["衛生防護中心", "港大"]	["Health Protection Center
武漢肺炎元兇 證實	東方日報	A01	要聞	2020-01-10		news:26di^2020011	湖北武漢近月	新型冠狀病毒已被證	A new type of coro	["冠狀病毒", "武漢肺炎"]	["coronavirus", "Wul"]	["袁國勇", "黃加"]	["Yuen Kwok-yung"]	["世界衛生組織", "香港大"]	["World Health Organizatio
港索基因圖譜 待內	星島日報	A02	要聞	2020-01-10	https://std.sth	news:26e5^2020011	三年沙士,	香港專家尚未參與武	Hong Kong experts	["冠狀病毒", "武漢", "基"]	["coronavirus", "Wul"]	["黃加慶", "袁國"]	["Huang Jiaqing", "Yua"]	["衛生防護中心", "港大醫"]	["Health Protection Center
武漢肺炎斷為新冠	星島日報	A02	要聞	2020-01-10		news:25ag^2020011	武漢肺炎	中國武漢爆發的不明	A new type of coro	["冠狀病毒", "肺炎", "冠"]	["coronavirus", "pne"]	["徐建國", "袁國"]	["Xu Jianguo", "Yuen K"]	["香港大學"]	["Hong Kong University"]
不明肺炎 武漢證實	蘋果日報	A01	要聞	2020-01-10		news:044i^2020011	武漢不明肺炎	中國專家初步判定武	Chinese experts ha	["武漢肺炎", "新型冠狀"]	["Wuhan pneumonia"]	["徐建國", "黃加"]	["Xu Jianguo", "Huang"]	["國家衛健委", "世界衛生"]	["National Health Commiss
新病毒勢人傳人 尚	東方日報	A02	專題新	2020-01-10	https://orient	news:25fc^2020011	湖北武漢市爆	香港專家呼籲市民加	Experts in Hong Ko	["新型冠狀病毒", "個人"]	["new coronavirus", "袁國勇", "何栢"]	["Yuen Kwok-yung", "H"]	["香港大學", "香港中文大"]	["University of Hong Kong",	
武漢肺炎病原體初	香港仔	P01	要聞	2020-01-10		news:2614^2020011	武漢不明肺炎	根據初步實驗室結果	The pathogen of th	["冠狀病毒", "武漢肺炎"]	["coronavirus", "Wul"]	["徐建國", "黃加"]	["Xu Jianguo", "Huang"]	["國家衛生健康委員會", "National Health Commiss	
袁國勇擬假定病毒	頭條日報	P04	要聞	2020-01-10		news:04c2^2020011	內地專家組初	內地專家初步判定,	Mainland experts g	["武漢", "肺炎", "冠狀病"]	["Wuhan", "pneumo"]	["袁國勇", "王月"]	["Yuen Kwok-yung", "V"]	["香港大學", "北京大學", "University of Hong Kong",	
未獲基因圖譜 港府	明報	A08	港聞	2020-01-11	https://news.i	news:16bh^2020011	內地雖已破	韓國和台灣敦促中國	South Korea and Te	["武漢肺炎", "基因排序"]	["Wuhan pneumonia"]	["胡克", "何栢良"]	["Hu Ke", "Ho Pak-leur"]	["香港衛生防護中心", "港"]	["Hong Kong Centre for Hea
基因圖譜曝光 武漢	明報	A05	港聞	2020-01-12	https://news.i	news:244d^2020011	內地專家在上	專家已破解武漢肺炎	Experts have decoc	["新型冠狀病毒", "武漢"]	["new coronavirus", "袁國勇", "馬仲"]	["Yuen Kwok-yung", "M"]	["香港大學", "公共醫療醫"]	["Hong Kong University", "P	
武漢新冠狀病毒是	0 成報	A03	港聞	2020-01-12		news:247f^2020011	有內地專家公	香港大學微生物學系	Hong Kong Univers	["冠狀病毒", "沙士", "冠"]	["coronavirus", "SAR"]	["袁國勇", "黃加"]	["Yuen Kwok-yung", "V"]	["香港大學", "上海公共衛"]	["University of Hong Kong",
新冠狀病毒八成似	星島日報	A04	要聞	2020-01-12		news:24d9^2020011	武漢新冠狀	武漢衛健委報告新型	The Wuhan Health	["武漢", "冠狀病毒", "鄂"]	["Wuhan", "coronavi"]	["袁國勇"]	["Yuen Kwok-yung"]	["武漢衛健委", "衛生防護"]	["Wuhan Health Commissic
專家料新病毒肺炎	文匯報	A05	文匯要	2020-01-12		news:149c^2020011	湖北省武漢市	湖北省武漢市新型冠	The first death cas	["武漢", "冠狀病毒", "鄂"]	["Wuhan", "coronavi"]	["袁國勇", "梁子"]	["Yuen Kwok-yung", "L"]	["香港大學", "香港醫學會"]	["University of Hong Kong",
基因圖譜網上曝光	蘋果日報	A08	要聞	2020-01-12		news:06h2^2020011	由新冠狀病	武漢肺炎疫情出現首	The first death fro	["武漢肺炎", "沙士", "冠"]	["Wuhan coronavirus"]	["袁國勇", "何栢"]	["Yuen Kwok-yung", "H"]	["香港大學", "衛生署", "Hong Kong University", "L	
最接近浙江舟山	星島日報	A04	要聞	2020-01-12		news:050f^2020011	內地仍然未正	香港大學教授袁國勇	Yuen Kwok-yung, a	["武漢病毒", "沙士", "冠"]	["Wuhan virus", "SAR"]	["袁國勇", "何栢"]	["Yuen Kwok-yung", "H"]	["香港大學"]	["University of Hong Kong"]
基因排序八成似沙	士 東方日報	A01	要聞	2020-01-12		news:2634^2020011	內地日前公布	中國已確認首宗武漢	The first death fro	["武漢冠狀病毒", "沙士"]	["Wuhan coronaviru"]	["黃加慶", "袁國"]	["Huang Jiaqing", "Yue"]	["衛生防護中心", "香港中"]	["Centre for Health Protect
港獲新冠狀病毒基	大公報	A03	要聞	2020-01-13	http://www.ta	news:146f^2020011	世界衛生組織	世界衛生組織已收到	The World Health	["基因序列", "快速測試"]	["genetic sequence"]	["何栢良"]	["Ho Pak-leung"]	["世界衛生組織", "香港衛"]	["World Health Organizatio
港將獲新冠狀病毒	香港商報	A02	重要新	2020-01-13	https://www.l	news:06hc^2020011	衛生署衛生防	衛生署衛生防護中心	The Centre for Hea	["基因排序", "新型冠狀"]	["gene sequencing", "何栢良"]	["He Bailiang"]	["衛生署", "衛生防護中心"]	["Department of Health", "D	
新冠狀病毒快速測	星島日報	A06	港聞	2020-01-13		news:18eg^2020011	武漢上月風	衛生防護中心已接獲	The Centre for Hea	["武漢肺炎", "基因排序"]	["Wuhan pneumonia"]	["何栢良"]	["Ho Pak-leung"]	["衛生防護中心", "國家衛"]	["Centre for Health Protect
武漢肺炎圖譜公開	am730	A01	NEWS	2020-01-13	https://www.a	news:04da^2020011	武漢爆發由新	香港報告了6例新型	Hong Kong reporte	["武漢", "肺炎", "冠狀病"]	["Wuhan", "pneumo"]	["譚德基", "何栢"]	["Tedros Adhanom Gh"]	["世界衛生組織", "GISAID"]	["World Health Organizatio
新冠狀病毒人傳人	香港經濟	A22	港聞	2020-01-15		news:15c8^2020011	武漢肺炎疫	世界衛生組織澄清,	The World Health	["武漢肺炎", "新型冠狀"]	["Wuhan pneumonia"]	["許樹昌", "何栢"]	["Tedros Adhanom Gh"]	["世界衛生組織", "路透社"]	["World Health Organizatio
據泰國確診個案	香港商報	A03	重要新	2020-01-15	https://www.l	news:156i^2020011	記者周偉立	世界衛生組織 (WHO)	The World Health	["新型冠狀病毒", "武漢"]	["new coronavirus", "馮子健", "林鄭"]	["Feng Zijian", "Carrie"]	["世界衛生組織", "香港衛"]	["World Health Organizatio	
專家促入境健康申	報明報	A02	要聞	2020-01-16	https://news.i	news:057i^2020011	武漢新冠狀	香港新增5宗武漢新	Hong Kong has rep	["武漢新冠狀病毒", "健"]	["Wuhan coronaviru"]	["張竹君", "何栢"]	["Cheung Chuk-kwan", "何栢"]	["香港大學", "香港醫學"]	["Hong Kong University", "H
內地不排除新病毒	明報	A02	要聞	2020-01-16	https://news.i	news:04i8^2020011	內地對外公布	內地對外公布武漢	After half a month	["武漢肺炎, 有限度人傳"]	["Wuhan pneumonia", "limited human-to-human transmission", "seafood market", "virus", "investigation"]				
日爆首宗確診 港	更 香港經濟	A21	港聞	2020-01-17		news:23i9^2020011	武漢肺炎疫	隨著武漢冠狀病毒的	As the Wuhan coro	["武漢冠狀病毒", "日本"]	["Wuhan coronavirus"]	["陳肇始", "袁國"]	["Chen Zhuoshi", "Yue"]	["香港大學", "國家衛健委"]	["Hong Kong University", "N
日確診者服退燒藥	明報	A03	港聞	2020-01-17	https://news.i	news:03e9^2020011	武漢爆發新	武漢爆發的新型冠	The new coronavir	["新型冠狀病毒", "武漢"]	["new coronavirus", "30多歲男子"]	["the 30-year-old man"]	["世界衛生組織", "香港衛"]	["WHO", "Hong Kong Food	
港完成新冠狀病毒	大公報	A07	要聞	2020-01-17		news:25kf^2020011	本港昨日再	香港報告了兩起新的	Hong Kong reporte	["武漢肺炎", "快速測試"]	["Wuhan pneumonia"]	["袁國勇"]	["Yuen Kwok-yung"]	["香港大學醫學院", "衛生"]	["Hong Kong University Me
專家促查病毒動物	東方日報	A06	專題新	2020-01-18	https://orient	news:0541^2020011	武漢肺炎日	有一宗新的武漢肺炎	A new death case	["武漢肺炎", "快速測試"]	["Wuhan virus", "rap"]	["袁國勇", "許樹"]	["Yuen Kwok-yung", "H"]	["香港大學", "香港中文大"]	["University of Hong Kong",
專家料醫第二輪	香港經濟	A13	港聞	2020-01-21	https://paper.	news:02kd^2020012	武漢肺炎已有	香港大學專家警告,	Experts from the U	["武漢肺炎", "爆發", "牙"]	["Wuhan pneumonia"]	["王月丹", "張竹"]	["Wang Yuedan", "Zha"]	["香港大學", "北京大學", "University of Hong Kong",	



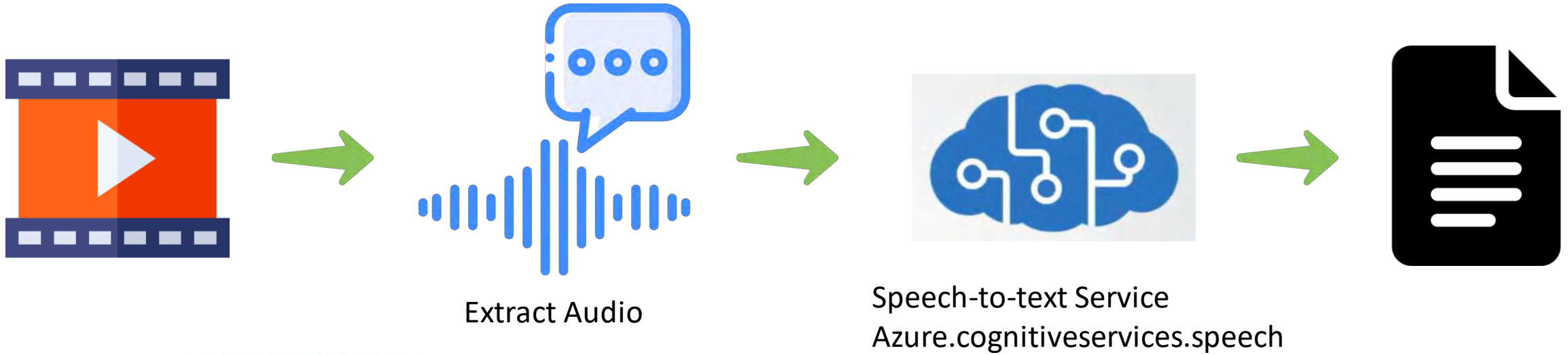
# YouTube video

1. Use YouTube API to search for relevant videos
2. Use YouTube API to get the transcript, if available.

- `query='+( "university of hong kong" | "hong kong university" | "香港大學" | HKU | "港大" ) +( covid | "新冠" | "肺炎" | coronavirus | pneumonia | epidemic | pandemic ) '`

`query='+( "university of hong kong" | "香港大學" | HKU | "港大" ) +( "covid-19" | "新冠" | "肺炎" | delta | omicron | coronavirus | epidemic | pandemic ) '`

# Video Transcription



正念抗疫 - 楊紫芝教授篇(一)



- Transcribe audio to text into preferred language

# Process research article data

## Major source:

HKU Scholar Hub

## Supplementary source:

Scopus, PubMed, Crossref

## Consistent Detection of 2019 Novel Coronavirus in Saliva



Department of Medicine, Department of Microbiology

- Authors in order (include both HKU and non- HKU scholar)
- Identify the HKU scholar (some scholar are not recorded in our scholar hub)
- Name normalization

- Involved HKU department (check with affiliation)



### Abstract

The 2019 novel coronavirus (2019-nCoV) was detected in the self-collected saliva of 91.7% (11/12) of patients. Serial saliva viral load monitoring generally showed a declining trend. Live virus was detected in saliva by viral culture. Saliva is a promising noninvasive specimen for diagnosis, monitoring, and infection control in patients with 2019-nCoV infection.

### Citation

To, K. K.-W., Tsang, O. T.-Y., Yip, C. C.-Y., Chan, K.-H., Wu, T.-C., Chan, J. M.-C., ... Yuen, K.-Y. (2020, February 12). Consistent Detection of 2019 Novel Coronavirus in Saliva. *Clinical Infectious Diseases*. Oxford University Press (OUP). <http://doi.org/10.1093/cid/ciaa149>

Resource Type  
[ScholarlyArticle](#)

#2019 novel coronavirus #diagnostics #saliva #Transmission #viral load

### Addition Details

Date: 2020-08-01  
Wave of COVID: 3rd  
Category: [Research](#)  
Source URL:  
<http://dx.doi.org/10.1093/cid/ciaa143>

### Share



- Abstract obtained from Scopus/PubMed/HKU Scholar Hub

- Citation in APA format
- From CiteAs API with DOI

- Subject from Crossref API/HKU Scholar Hub

# Challenges

## 1. Need to validate if the scrapped news and videos are truly related to HKU

- We have scrapped nearly 10,000 news. Even the news carried keywords “HKU” or “Covid-19”, it maybe not related to HKU contribution/involvement
- Misinformation
- Required manpower on screening

## 2. Variants of Name and Organization

e.g: Yuen Kwok Yung, Yuen-Kwok Yung, Kwok Yung Yuen; 香港大學醫學院公共衛生學院, 港大公共衛生學院 , 香港大學李嘉誠醫學院公共衛生學院

- LLM extracted terms directly from the text content
- Do normalization, develop an authority list
- Use OpenRefine reconciliation
- Apply fuzzy matching with python to do approximate string matching

organisation_id	organisation	variant
O129	School of Public Health	香港大學李嘉誠醫學院公共衛生學院
O129	School of Public Health	港大醫學院公共衛生學院公共衛生實驗室科學分部
O129	School of Public Health	香港大學醫學院公共衛生學院
O129	School of Public Health	香港大學醫學院公共衛生學院
O129	School of Public Health	香港大學李嘉誠醫學院公共衛生學院
O129	School of Public Health	香港大學公共衛生學院研究
O129	School of Public Health	香港大學醫學院公共衛生實驗室科學分部
O129	School of Public Health	香港大學公共衛生學院
O129	School of Public Health	港大公共衛生學院流行病
O129	School of Public Health	香港大學醫學院公共衛生學院
O129	School of Public Health	港大醫學院公共衛生學院公共衛生實驗室
O129	School of Public Health	港大醫學院公共衛生學院
O129	School of Public Health	香港大學醫學院公共衛生學院
O129	School of Public Health	港大公共衛生學院實驗室
O129	School of Public Health	港大李嘉誠醫學院公共衛生學院
O129	School of Public Health	香港大學公共衛生實驗室
O129	School of Public Health	港大公共衛生學院
O129	School of Public Health	港大李嘉誠醫學院公共衛生學院
O129	School of Public Health	香港大學李嘉誠醫學院公共衛生學院
O129	School of Public Health	港大公共衛生學院
O129	School of Public Health	港大醫學院公共衛生學院運動學分部
O129	School of Public Health	香港大學李嘉誠醫學院公共衛生學院「賽馬會智家樂計劃」團隊
O129	School of Public Health	香港大學公共衛生學院實驗室
O129	School of Public Health	港大醫學院公共衛生學院
O129	School of Public Health	港大公共衛生實驗室
O129	School of Public Health	港大醫學院公共衛生學院抗生素耐藥性研究組
O129	School of Public Health	香港大學公共衛生學
O129	School of Public Health	香港大學李嘉誠醫學院公共衛生學院「
O129	School of Public Health	港大李嘉誠醫學院公共衛生學院
O129	School of Public Health	港大公共衛生學院實驗室
O129	School of Public Health	香港大學公共衛生學院研究
O129	School of Public Health	港大醫學院公共衛生學院流行病和生物統計學分部

# Challenges

## 3. Use OpenAI LLM for information extraction can give you different output format

- Affect data injection
- Highly depends on the prompt
- Example prompt: *“You are a journalist. Extract people, organization, top 10 subjects (exclude COVID and \ 'hong kong\ ') and summary in traditional chinese and english. Desired JSON Format: {“people\_en”:[],“people\_zh”:[],“org\_en”:[],“org\_zh”:[],“summary\_en”:“”,“summary\_zh”:“”,“keyword\_en”:[],“keyword\_zh”:[]}”*
- Sample output: *{“keyword\_en”: [“Henry Fok Foundation”, “Macau”, “donation”, “University of Hong Kong”, “Li Ka Shing Faculty of Medicine”, “epidemic monitoring program”, “COVID-19”, “community transmission”, “10,000 participants”, “12 weeks”], “keyword\_zh”: [“澳門霍英東基金”, “捐款”, “香港大學”, “李嘉誠醫學院”, “疫情監察計劃”, “新冠病毒”, “社區傳播”, “一萬名參加者”, “十二星期”, “即時數據”], “summary\_en”: “The Henry Fok Foundation in Macau has donated HKD 10 million to support the University of Hong Kong’s Li Ka Shing Faculty of Medicine in implementing the ‘United We Stand Epidemic Monitoring Program’. The program aims to collect real-time data from the local community to assess and monitor the community transmission of COVID-19 in Hong Kong. It will recruit 10,000 participants, including those who have completed or are currently participating in large-scale research projects managed by the HKU Faculty of Medicine’s School of Public Health, as well as randomly sampled citizens from all 18 districts in Hong Kong. The program will begin soon and initially last for 12 weeks.”, “summary\_zh”: “澳門霍英東基金捐款一千萬港元支持香港大學李嘉誠醫學院推行「眾志成城疫情監察計劃」。該計劃旨在收集本港社區的即時數據，以評估及監察香港新冠病毒的社區傳播情況。計劃將招募一萬名參加者，包括已完成或正在進行港大醫學院公共衛生學院管理的大型研究計劃的參加者，以及全港十八區隨機抽樣的市民。計劃將於日內開始，初步為期十二星期。”}*

# Best practices for prompt engineering

1. Put instruction at the beginning of prompt
2. Include context
3. Use specific, descriptive, as detailed as possible
4. desired output format
5. Provide few-shot example if possible

## Less Effective:

Extract the entities mentioned in the text below. Extract the following 4 entity types: company names, people names, specific topics and themes.

Text: {text}

## Better:

Extract the important entities mentioned in the text below. First extract all company names, then extract all people names, then extract specific topics which fit the content and finally extract general overarching themes

Desired format:

Company names: <comma\_separated\_list\_of\_company\_names>

People names: -||-

Specific topics: -||-

General themes: -||-

Text: {text}

# Challenges

## 4. The keywords extracted from GPT has different variants

term_id	Word
3978	aerosol
50100	fecal aerosols
50099	respiratory aerosols
12016	respiratory droplets
58879	age limit
59149	age requirement
50091	AI
50362	AI technologies
67	Artificial intelligence
7185	artificial intelligence learning
1651	Machine learning
58488	air crew
59156	aircrews
59020	airport ground crew
59013	cabin crew
59158	crew members
58740	air transmission
2426	Airborne Infection
678	airborne particles
85	Airborne transmission
50101	short-range airborne transmission
59051	air travel bubble
58633	travel bubble
59184	airport cleaner
2914	coating
59062	airport workers

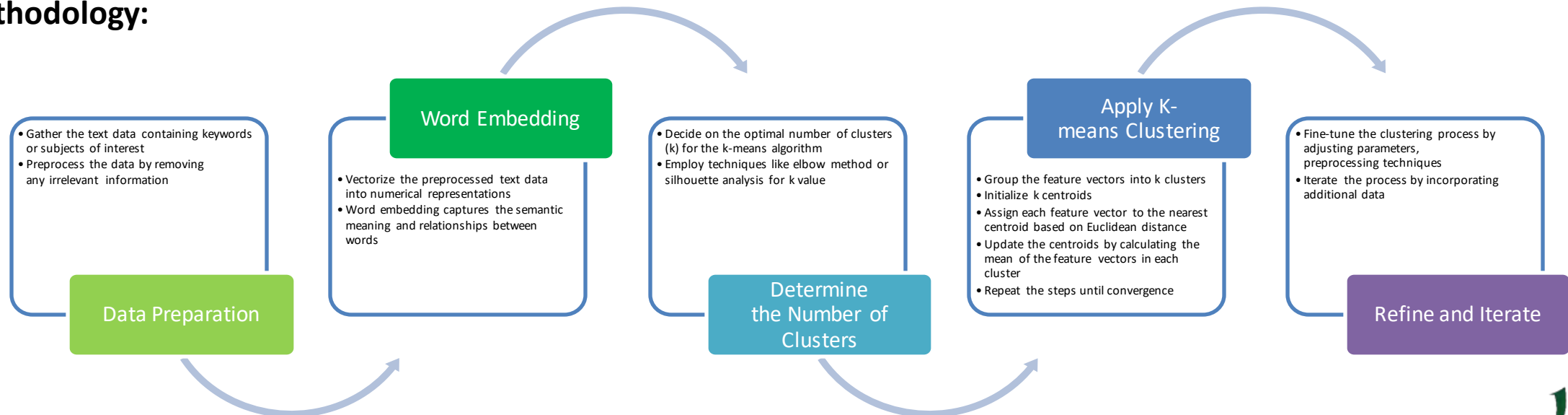


# Keyword/subject clustering

- Application of K-means clustering for keyword/subject clustering using Unsupervised Machine Learning

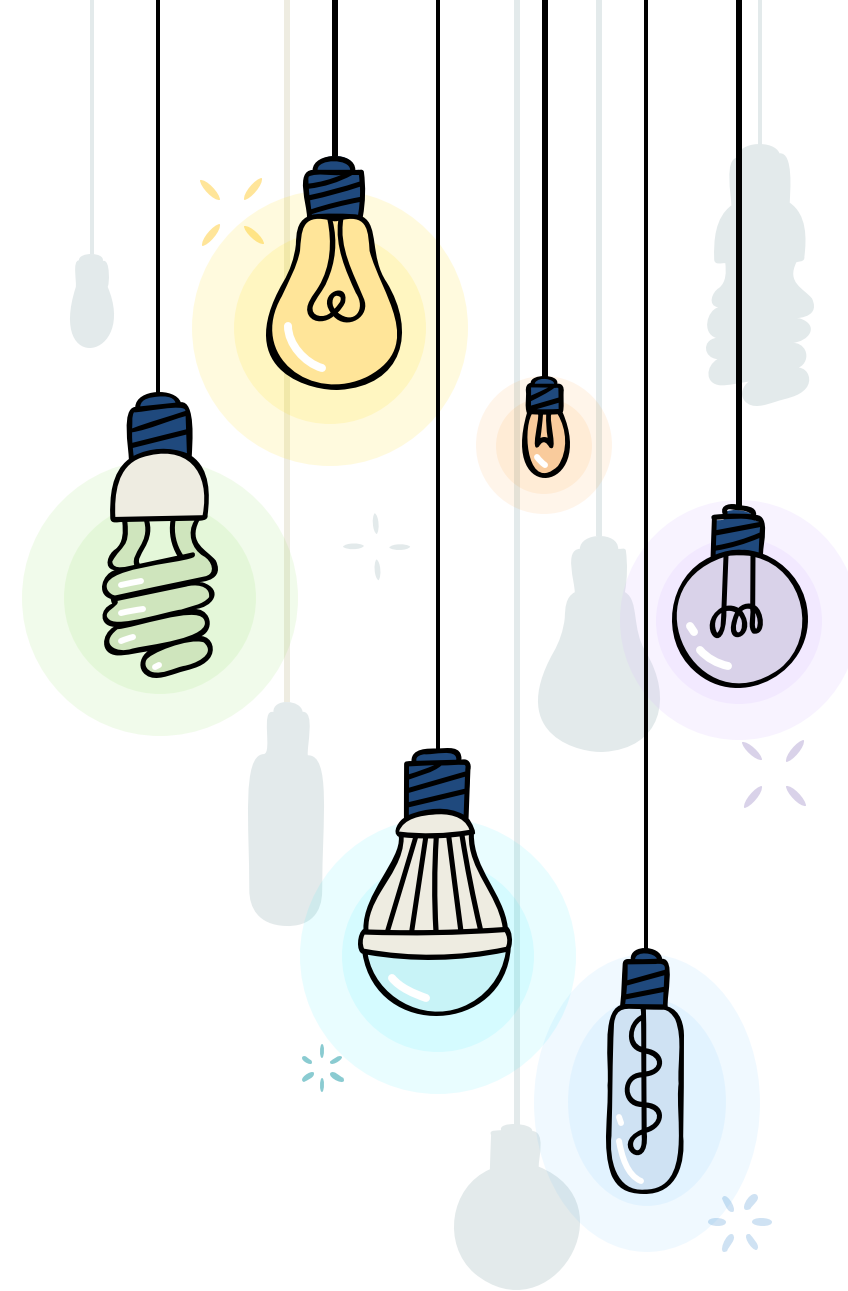


## Methodology:





# + How do we visualize the data?



# Partnerships for COVID-19 Research at HKU

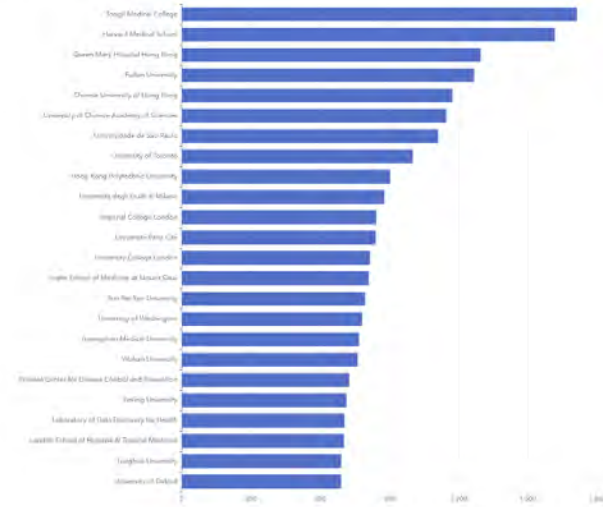
The worldwide partners for COVID-19 research at HKU represent an expansive network of collaborative partnerships with leading experts and organizations from around the world. HKU's global network of collaborative partnerships enables the university to work with institutions and professionals from different fields and regions, leveraging their collective knowledge and capabilities to advance research in vaccine development, epidemiology, public health, and social and behavioral sciences.



The map below is an interactive visualization showcasing global collaboration. As you zoom in, you'll unveil the names of collaborators involved in each endeavor, providing a deeper understanding of the individuals and organizations driving these collaborative efforts.



Top 20 institutions cited HKU research output



A tree map to show the collaboration partnership with other institutions.

1. Download and extract affiliations of researchers by Scopus Search API
2. Use GoogleMap Geocoding API to get the lat, long data
3. Reconcile coordinates against ISO-3166 (Country Codes)
4. Data analytics methods to find the geo-relationship among all data

	A	B	C	D	E	F	G
1	affiliation_id	affiliation_name	affiliation_ci	affiliation_co	lat	lon	count
2625	60014991	European Centre for Disease Prevention ar	Solna	Sweden	59.3726	18.0168298	4
2626	60014991	European Centre for Disease Prevention ar	Stockholm	Sweden	59.3726	18.0168298	4
2627	60007420	Karlstad Central Hospital	Karlstad	Sweden	59.3749398	13.4804298	1
2628	60275452	North Estonia Medical Centre	Tallinn	Estonia	59.3983667	24.7010389	1
2629	60111747	University of South-Eastern Norway	Kongsberg	Norway	59.568633	9.2788923	1
2630	60003858	Uppsala Universitet	Uppsala	Sweden	59.8509005	17.6300093	3
2631	60010348	Universitetet i Oslo	Oslo	Norway	59.9404992	10.7215296	5
2632	60105037	Oslo Universitetssykehus	Oslo	Norway	59.9512235	10.7218215	1
2633	60028444	Modum Bad	Modum	Norway	59.9677413	9.942791	2
2634	60002952	Helsingin Yliopisto	Helsinki	Finland	60.1726348	24.9510419	5
2635	60103653	Aalto University	Espoo	Finland	60.1866693	24.827682	1
2636	60016987	Helsinki University Hospital	Helsinki	Finland	60.2025011	24.9072624	3
2637	60028758	Finnish Red Cross Blood Service	Helsinki	Finland	60.29427677	24.84676934	1
2638	60030280	Haukeland Universitetssjukehus	Bergen	Norway	60.3732829	5.3591418	3
2639	60114851	NORCE Norwegian Research Centre AS	Bergen	Norway	60.3840971	5.3333402	1
2640	60029622	Universitetet i Bergen	Bergen	Norway	60.3878586	5.3217549	1
2641	60006876	Turun yliopisto	Turku	Finland	60.4542267	22.284785	2
2642	60011916	Norwegian Institute of Public Health	Oslo	Norway	60.472024	8.468946	1
2643	126876717	SAG Flowmedik Oy	Helsinki	Finland	61.0030743	24.4796698	1
2644	60011170	Tampere University	Tampere	Finland	61.4941073	23.7792354	1
2645	60008760	University Hospital of Tampere	Tampere	Finland	61.4977524	23.7609535	10
2646	114085680	Russian Clinical and Research Center of G	Moscow	Russian Federat	61.52401	105.318756	1
2647	60013141	Norges Teknisk-Naturvitenskapelige Univer	Trondheim	Norway	63.4194872	10.401994	1
2648	60105357	Institute of Biology of the Komi Science Cer	Syktyvkar	Russian Federat	63.8630539	54.8312689	1
2671							

	A	B	C	D	E	F	G	H	I	J
1	count	affiliation_id	affiliation_name	affiliation_ci	affiliation_country	ISO	lat	lon		
36	593	60023691	University of California, San Francisco	San Francisco	United States	US	37.7626459	-122.4587106		
37	583	60027708	Tehran University of Medical Sciences	Tehran	Iran	IR	35.7058231	51.3941861		
38	579	60000481	Università degli Studi di Padova	Padua	Italy	IT	45.4067393	11.8771509		
39	575	60017161	National University of Singapore	Singapore City	Singapore	SG	1.2966426	103.7763939		
40	575	60012311	Karolinska Institutet	Stockholm	Sweden	SE	59.3481484	18.0236578		
41	571	60026245	Charité – Universitätsmedizin Berlin	Berlin	Germany	DE	52.5264618	13.3766245		
42	569	60017994	Yale School of Medicine	New Haven	United States	US	41.30323	-72.9338698		
43	569	60031101	University of Cambridge	Cambridge	United Kingdom	GB	52.20551377	0.1131679971		
44	564	60032838	Stanford University School of Medicine	Stanford	United States	US	37.4318102	-122.175758		
45	560	60002593	Southern Medical University	Guangzhou	China	CN	23.182586	113.334184		
46	550	60026004	Fundacao Oswaldo Cruz	Rio de Janeiro	Brazil	BR	-22.8772312	-43.243633		
47	538	60007997	Weill Cornell Medicine	New York	United States	US	40.7649151	-73.954897		
48	533	60122389	Zhongnan Hospital of Wuhan University	Wuhan	China	CN	30.552985	114.353743		
49	531	60080982	Renmin Hospital of Wuhan University	Wuhan	China	CN	30.535357	114.299525		
50	528	60001117	Johns Hopkins School of Medicine	Baltimore	United States	US	39.2992161	-76.5933799		
51	527	60004582	King Abdulaziz University	Jeddah	Saudi Arabia	SA	21.493472	39.2535		
52	526	60013983	City University of Hong Kong	Hong Kong	Hong Kong	HK	22.3370342	114.17272		
53	525	60011520	King's College London	London	United Kingdom	GB	51.51163327	-0.1160077318		
54	523	60029929	Massachusetts General Hospital	Boston	United States	US	42.3625677	-71.0687661		
55	522	60032350	Sapienza Università di Roma	Rome	Italy	IT	41.9037626	12.5144384		
			Chinese Academy of Medical							

55146	1	120952080	WHO Collaborating Centre for Knowledge Translation and Health Technology Assessment in Health Equity	Ottawa	Canada	CA	**ERROR: ZERO_RESULTS
55147	1	121500646	WHO GARD Planning Group	Salvador	Brazil	BR	**ERROR: ZERO_RESULTS
55148	1	125545212	WHO RNTCP Technical Support Network	Kolkata	India	IN	**ERROR: ZERO_RESULTS
55149	1	117493693	Wildlife Veterinary Consulting	Livermore	United States	US	**ERROR: ZERO_RESULTS
55150	1	125944287	Women Leaders for Planetary Health	Berlin	Germany	DE	**ERROR: ZERO_RESULTS
55151	1	121322659	Women's Brain Project	Zurich	Switzerland	CH	**ERROR: ZERO_RESULTS
55152	1	124788059	Women's Brain Project (WBP)	Gunterhausen	Switzerland	CH	**ERROR: ZERO_RESULTS
55153	1	127394056	WONCA World President			#N/A	**ERROR: ZERO_RESULTS
55154	1	125256312	Workday Integration Architect Huntington	Columbus	United States	US	**ERROR: ZERO_RESULTS
55155	1	112922920	World Federation for Mental Health	Woodbridge	United States	US	**ERROR: ZERO_RESULTS
55156	1	128934471	World Health Network	Son	Norway	NO	**ERROR: ZERO_RESULTS
55157	1	126777719	World Laureates Association	Shanghai	China	CN	**ERROR: ZERO_RESULTS

# The Worldwide Influence of HKU's COVID-19 Research

HKU's COVID-19 research output has had a profound effect worldwide. This interactive map depicts the research output cited by prominent institutions. It offers a compelling visual representation, illustrating the extent of HKU research paper's influence and fostering a deeper understanding of the pandemic on a global scale.

A bubble map to reveal the impact of HKU's COVID-19 research



GIS



1. By using by Scopus Search API, download and extract affiliations of those research papers that cited HKU COVID research papers.
2. Use GoogleMap Geocoding API to get the lat, long data

# A Timeline for HKU to battle COVID-19

<https://covid19.lib.hku.hk/timelines>

Explore our interactive timeline to dive into Hong Kong's COVID-19 events, HKU Campus actions, and HKU community services. Discover how HKU has contributed to public health during these challenging times.



A 3D-interactive timeline to showcase the correlation among HK COVID-19 events, HKU actions and community services

- Content source:
1. <https://www.news.gov.hk>
  2. HKU COVID-19 Info Hub
  3. Other HKU webpage

# COVID-19

## TIMELINE

- ▶ 2023
- ▶ 2022
- ▶ 2021
- ▼ 2020
  - December
  - November
  - October
  - September
  - August
  - July
  - June
  - May
  - April
  - March
  - February
  - January
- ▶ 2019

Home > News in Focus archive > COVID-19



### 2 more infections confirmed

January 31, 2020

The Centre for Health Protection is investigating two additional cases of novel coronavirus infection, which raises the number of confirmed cases to 12, the centre announces.

[READ MORE](#)



### HK probes 2 infection cases

January 29, 2020

The Centre for Health Protection is investigating two additional imported cases of novel coronavirus infection, which brings the number of confirmed imported cases to 10.

[READ MORE](#)



### 2 initially test positive for virus

January 29, 2020

Preliminary tests show that two seniors from Wuhan are positive for novel coronavirus, the Centre for Health Protection announces.

[READ MORE](#)



	A	B	C	D	E	F	G	H	I	J	K
1	ID	date	URL	title	URL_image	Desc			輸入個案	Fulltext	
44	N000043	2020-01-24	https://w	Public hospitals mobilise resource	https://www.news.gov.hk/	The Hospital Authority	ALST	增隔離病房病床 連串措施抗疫	The Hospital Autho	醫院管理局表示，因應新型冠狀病毒	
45	N000044	2020-01-24	https://w	Health declaration applies to XRL	https://www.news.gov.hk/	The Department of Hea	ALST	兩人確診染病 政府加強防疫	The Government w	本港兩宗輸入的新型冠狀病毒感染高	
46	N000045	2020-01-24	https://w	70 Wuhan-related cases recorded	https://www.news.gov.hk/	The Hospital Authority	ALST	公立醫院錄70宗武漢相關病例	The Hospital Autho	醫院管理局表示，截至中午12時，公	
47	N000046	2020-01-25	https://w	LNY school holiday extended	https://www.news.gov.hk/	The Education Bureau	ALST	全港學校延至下月17日復課	The Education Bur	教育局局長楊潤雄表示，為保障學童	
48	N000048	2020-01-25	https://w	65 Wuhan-related cases recorded	https://www.news.gov.hk/	The Hospital Authority	ALST	公立醫院錄65宗武漢相關病例	The Hospital Autho	醫院管理局表示，截至中午12時，公	
49	N000049	2020-01-26	https://w	No delay in fight against virus: CE	https://www.news.gov.hk/	The Government did no	ALST	六大策略應對新型冠狀病毒疫情	(To watch the videc	行政長官林鄭月娥公布六大策略，應	
50	N000050	2020-01-26	https://w	Hospital visits suspended	https://www.news.gov.hk/	The Hospital Authority	ALST	醫管局宣布暫停公院探訪安排	The Hospital Autho	醫院管理局宣布，因應政府就新冠	
51	N000051	2020-01-26	https://w	Quarantine centre sites explained	https://www.news.gov.hk/	The Centre for Health P	ALST	抗疫隔離設施優先考慮度假村	The Centre for Hee	衛生防護中心重申，在安排為沒有出	
52	N000052	2020-01-26	https://w	77 Wuhan-related cases recorded	https://www.news.gov.hk/	The Hospital Authority	ALST	公立醫院錄77宗武漢相關病例	The Hospital Autho	醫院管理局表示，截至中午12時，公	
53	N000053	2020-01-27	https://w	HK bans Hubei residents to fight v	https://www.news.gov.hk/	Hong Kong will impose	ALST	政府宣布限制湖北省居民到港	Hong Kong will imp	新型冠狀病毒感染疫情的督導委員會	
54	#infection	N000054	2020-01-27	https://w	6th infection case announced	https://www.news.gov.hk/	ALST	本港確診第六宗新型肺炎個案	(To watch the videc	本港確診第六宗輸入的新型冠狀病毒	
55	#infection	N000055	2020-01-27	https://w	2 new infections confirmed	https://www.news.gov.hk/	ALST	本港新增兩宗新型肺炎個案	Two new imported	本港新增兩宗輸入的新型冠狀病毒感	
56	N000056	2020-01-28	https://w	Advice for citizens who visited Hu	https://www.news.gov.hk/	The Department of Hea	ALST	港人湖北返港須申報	The Department of	衛生署表示，14日內曾往湖北的香港	
57	N000057	2020-01-28	https://w	Gov't rejects disease-related rum	https://www.news.gov.hk/	The Government dismi	ALST	政府澄清有關處理疫情謠言	The Government tc	有網上貼文指行政長官林鄭月娥同意	
58	N000058	2020-01-28	https://w	78 Wuhan-related cases recorded	https://www.news.gov.hk/	The Hospital Authority	ALST	公立醫院錄78宗武漢相關病例	The Hospital Autho	醫院管理局表示，截至中午12時，公	
59	N000059	2020-01-29	https://w	Further measures to fight virus	https://www.news.gov.hk/	Chief Executive Carrie	ALST	政府公布新一輪措施應對疫情	(To watch the videc	行政長官林鄭月娥公布新一輪措施應	
60	N000060	2020-01-29	https://w	2 initially test positive for virus	https://www.news.gov.hk/	Preliminary tests show	ALST	本港增兩宗新型肺炎懷疑個案	(To watch the videc	本港新增兩宗新型冠狀病毒感染初步	
61	N000061	2020-01-29	https://w	56 Wuhan-related cases reported	https://www.news.gov.hk/	The Hospital Authority	ALST	12名醫護符武漢病例呈報準則	(To watch the videc	醫院管理局表示，截至1月29日中午	
62	N000062	2020-01-30	https://w	HK probes 2 infection cases	https://www.news.gov.hk/	The Centre for Health P	ALST	本港再添兩宗新型肺炎個案	The Centre for Hee	本港新增兩宗輸入的新型冠狀病毒感	
63	N000063	2020-01-30	https://w	95 Wuhan-related cases reported	https://www.news.gov.hk/	The Hospital Authority	ALST	14醫護符武漢病例呈報準則	The Hospital Autho	醫院管理局表示，截至中午12時，1	
64	#infection	N000064	2020-01-31	https://w	2 more infections confirmed	https://www.news.gov.hk/	ALST	新型冠狀病毒確診個案增兩宗	The Centre for Hee	衛生防護中心正調查兩宗新增新冠	
65	N000065	2020-02-01	https://w	FSD units to provide basic service	https://www.news.gov.hk/	The Fire Services Depa	ALST	防火單位周一起提供基本服務	The Fire Services I	因應疫情發展，政府延長僱員特別上	
66	N000066	2020-02-02	https://w	Academy fit for quarantine use	https://www.news.gov.hk/	The Government says if	ALST	饒宗頤文化館擬作檢疫中心	The Government tc	食物及衛生局表示，有迫切需要盡快	
67	#infection	N000067	2020-02-02	https://w	CHP confirms another infection ca	https://www.news.gov.hk/	ALST	新型冠狀病毒確診個案再增一宗	The Centre for Hee	本港新增一宗新型冠狀病毒感染確診	
68	#infection	N000068	2020-02-02	https://w	Local transmission not ruled out	https://www.news.gov.hk/	ALST	兩確診個案病源不清晰	(To watch the videc	衛生署衛生防護中心傳染病處主任張	

# HKU WARRIORS: FIGHTING COVID-19 ACROSS HONG KONG'S NEIGHBORHOODS

<https://covid19.lib.hku.hk/story/map-3>

This interactive map is designed to provide a comprehensive visualization of the places visited by the HKU team during the pandemic. Collaborating with government officials, our people visited various areas in Hong Kong during COVID-19 to investigate and respond to virus outbreaks.



A story map to illustrate the places visited by HKU team during the pandemic

## 2020-07-15 Queen Elizabeth Hospital 伊利沙伯醫院

### Reason for visit

Hospital infection control measures exposed flaws, multiple people diagnosed with COVID-19

醫院防感染措施出現漏洞，多人確診新冠肺炎

### Findings

In-hospital infection occurred, likely due to environmental contamination

院內感染已發生，可能由於環境污染導致

### Details

伊院病房爆發疫 同格3人確診

# InteractBot (Beta)

Welcome to our COVID-19 Digital Archives InteractBot, an advanced AI-driven platform powered by OpenAI LLM technology, designed to assist and provide you with reliable information regarding the content in this Digital Archives. Our InteractBot is here to answer your questions.

**Chat with InteractBot by sending queries below...**

How did HKU contribute to battle COVID19?

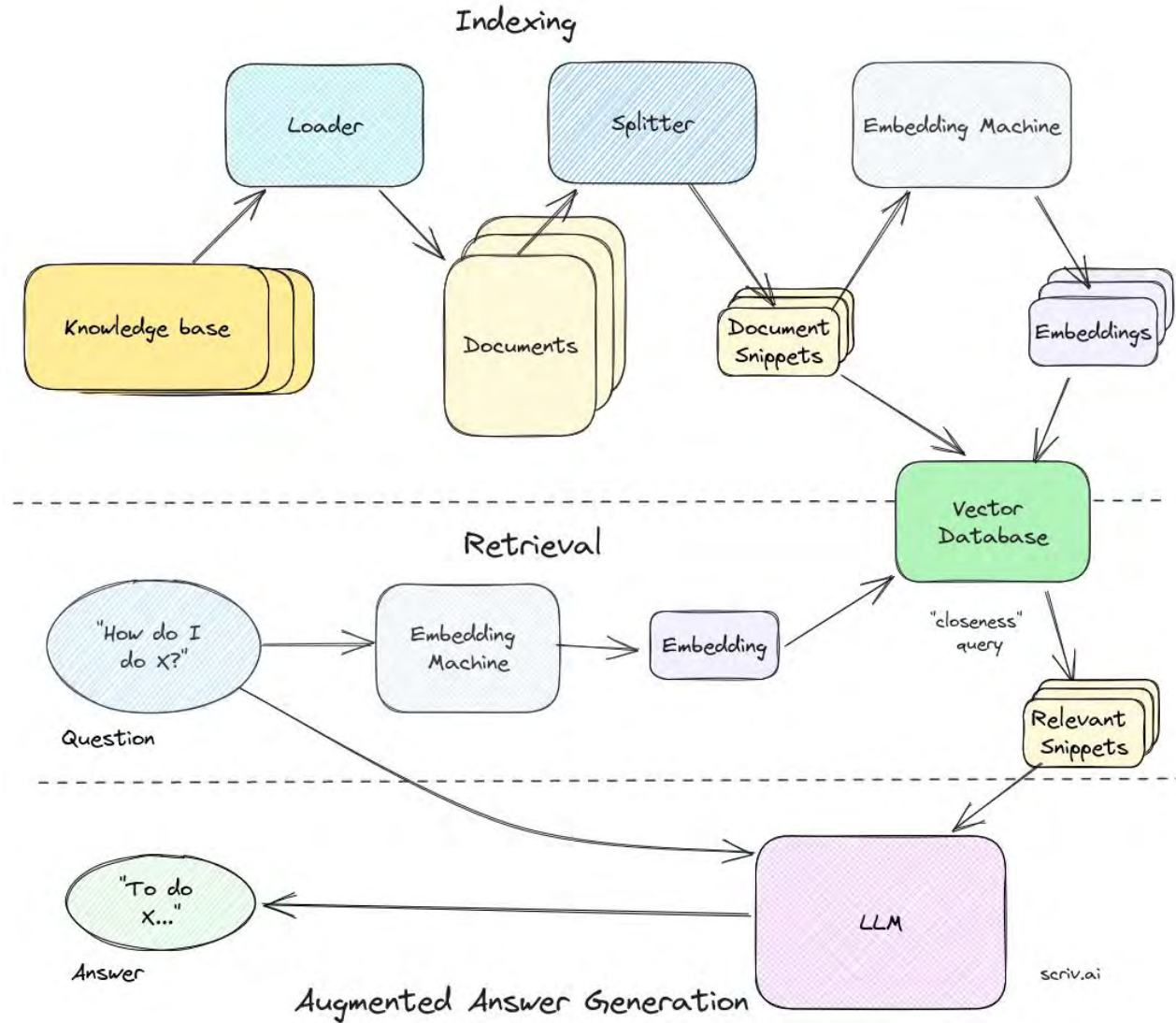
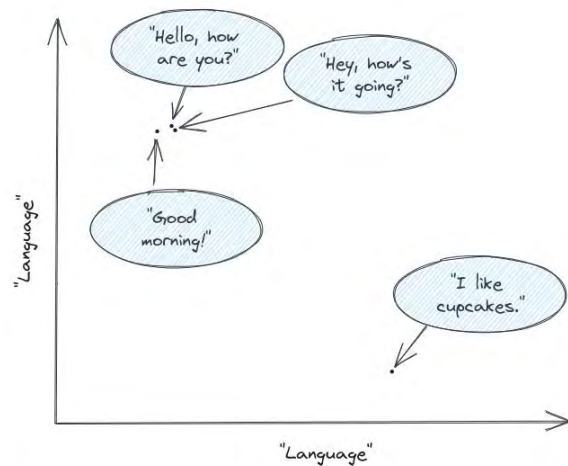
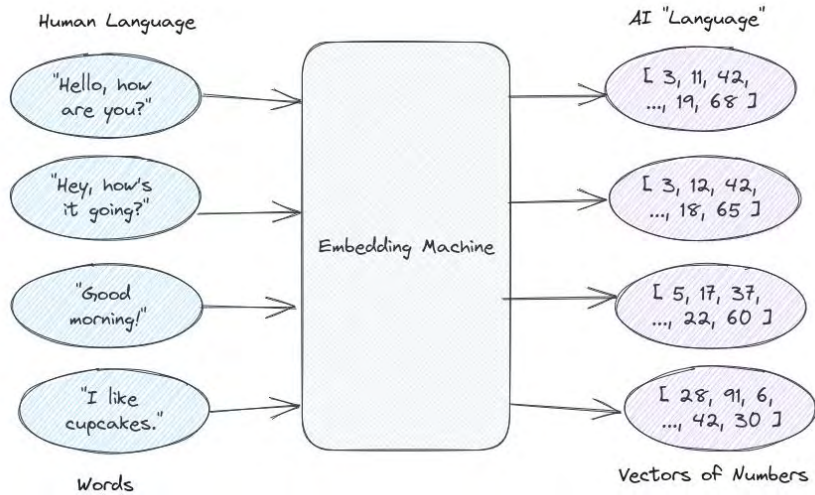
HKU researchers were at the forefront in responding to the emergency. They examined and assessed the size and epidemiological characteristics of the epidemic at its earliest stages in Wuhan. They were the first to publish data on person-to-person transmission of COVID19 in a familial cluster of patients diagnosed and managed at the HKU Shenzhen Hospital. They were also the first to document that the immunity gained from recovery may be short-lived and that human reinfection is possible. HKU is opening a Community Vaccination Centre (CVC) at Loke Yew Hall, providing 2,000 vaccine doses a day.

**Helpful Questions:**

1. What other research has HKU conducted on COVID19?
2. What is the HKU COVID-19 Digital Archive?
3. What is the goal of HKU's Community Vaccination Centre (CVC)?

A Chatbot powered by OpenAI LLM technology to enable user to retrieve information in an interactive way.

# Built Chatbot with Retrieval Augmented Generation (RAG)



Thank you!

