

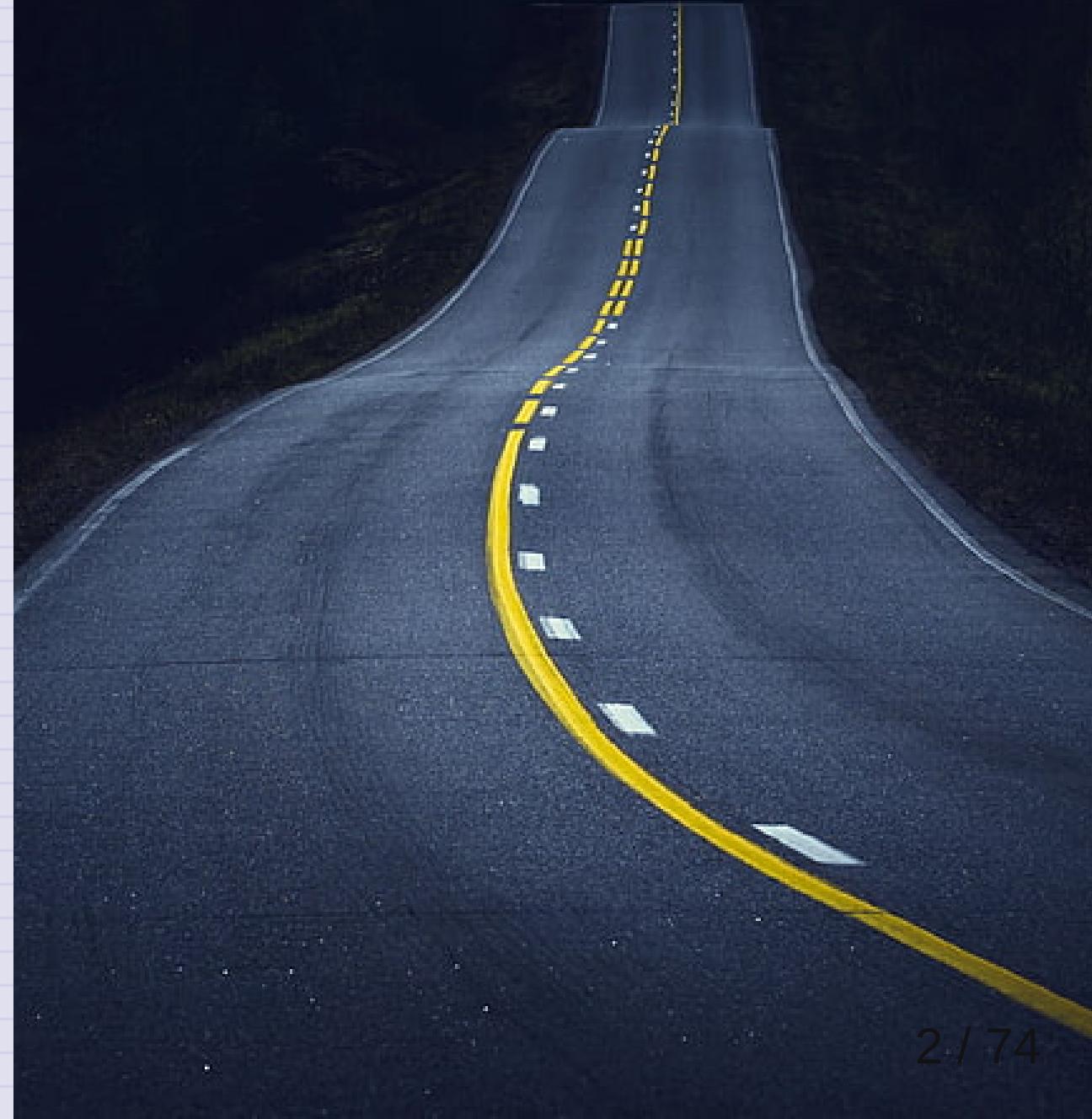


# 英文系學生的跨領域探索

- 講者：[江豪文博士](#)
- 日期：2024-10-29

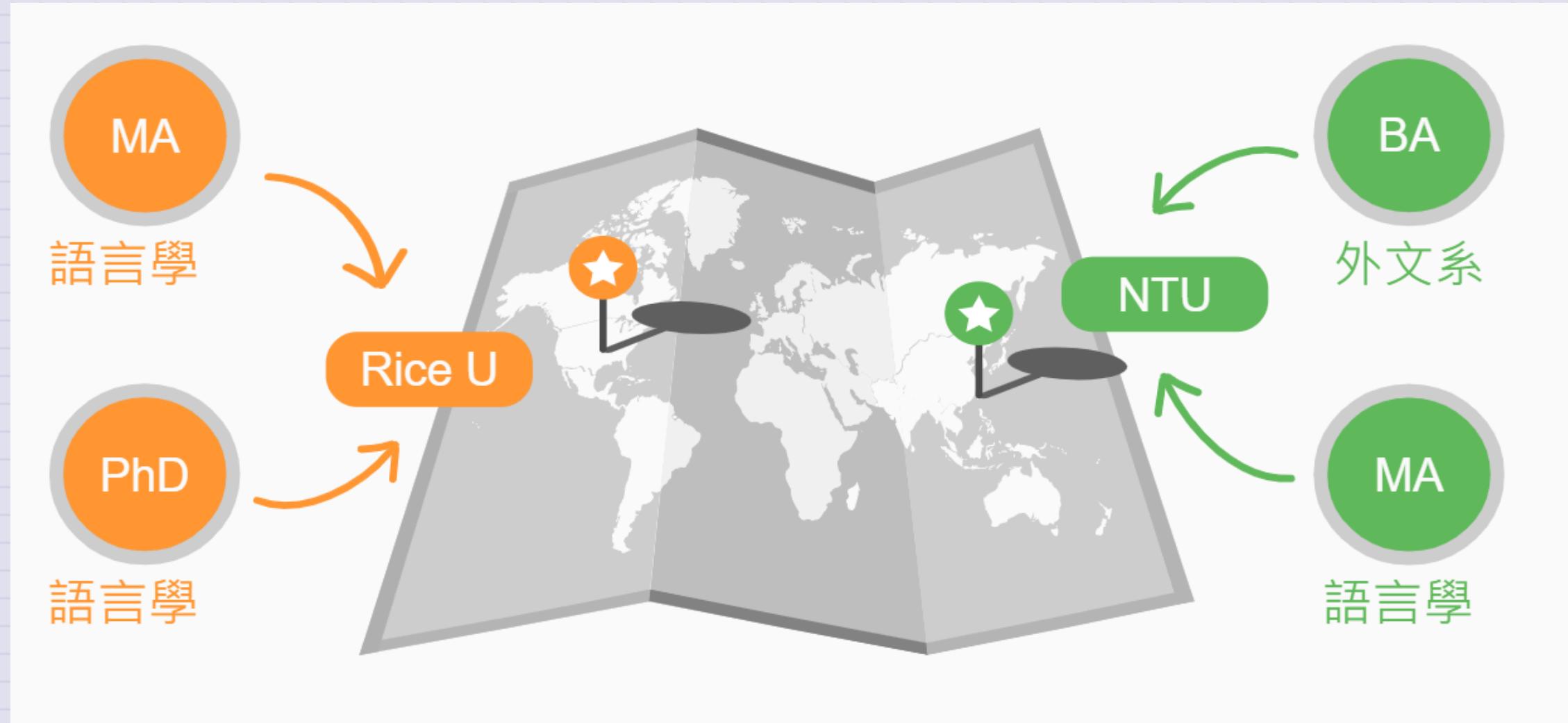
# 大綱

- 教育背景
- 工作經歷
- 自學歷程
- 問答時間



# 教育背景





# English Major

外文系  
做什麼



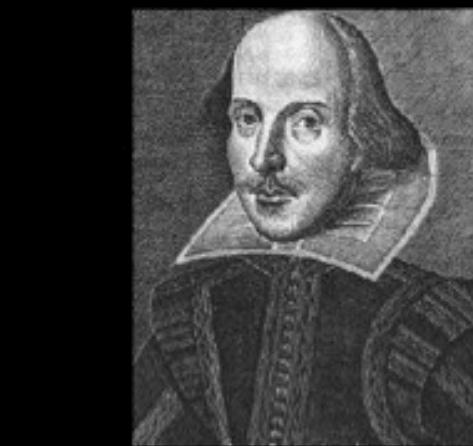
What my friends think I do



What my parents think I do



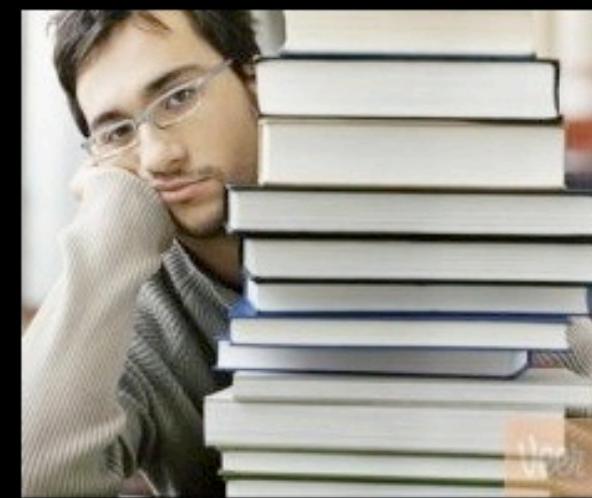
What my professors think I do



What society thinks I do



What I think I do



What I actually do

# Linguistics Student



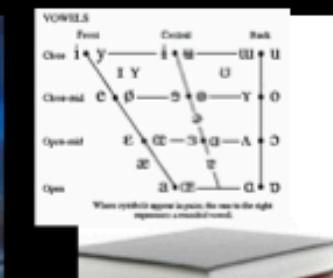
# 語言學 學什麼

## What society thinks I do.



## What I think I do.

## **What my friends think I do.**



Lambda expression:

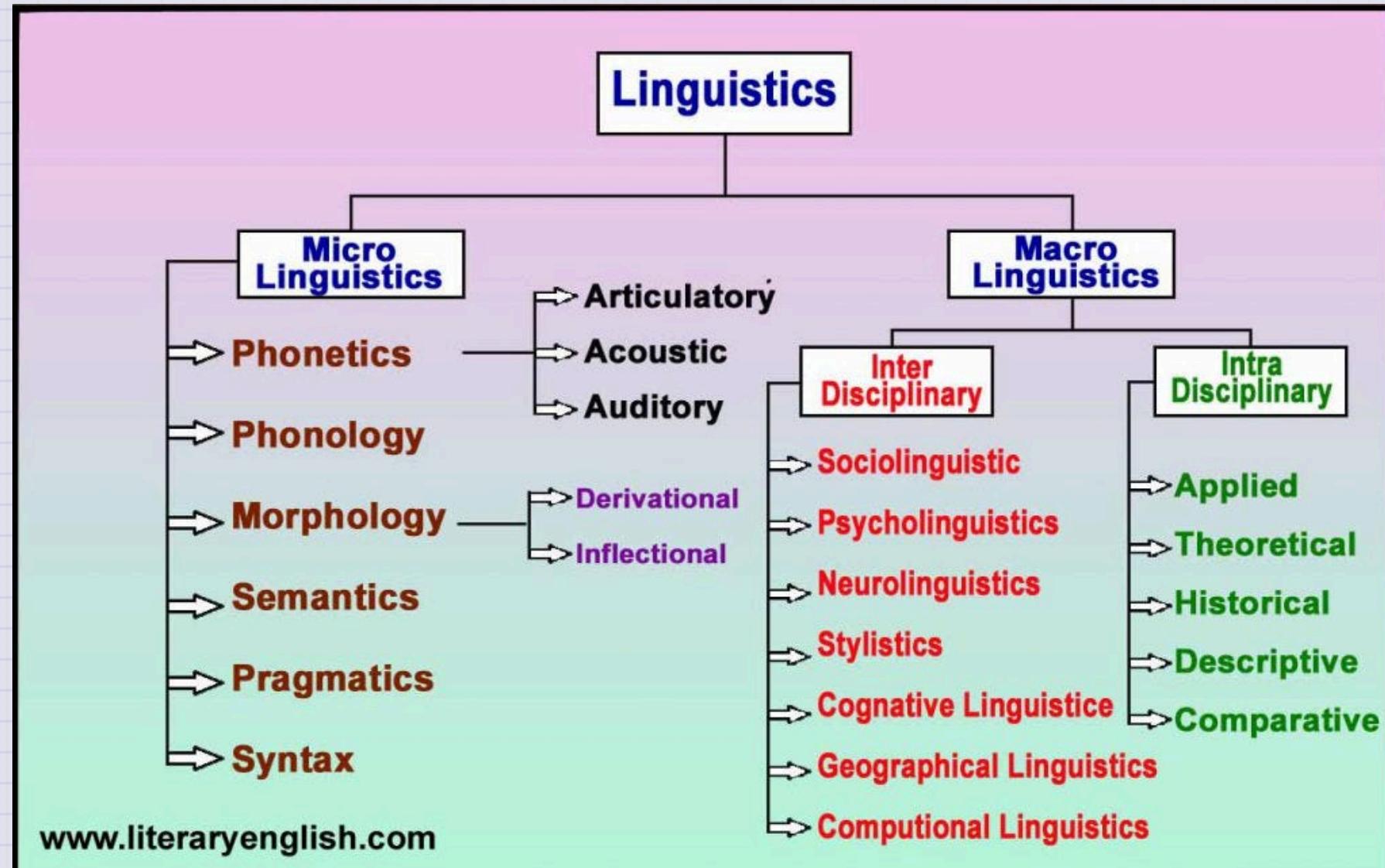


## What my parents think I do.



## What I really do!

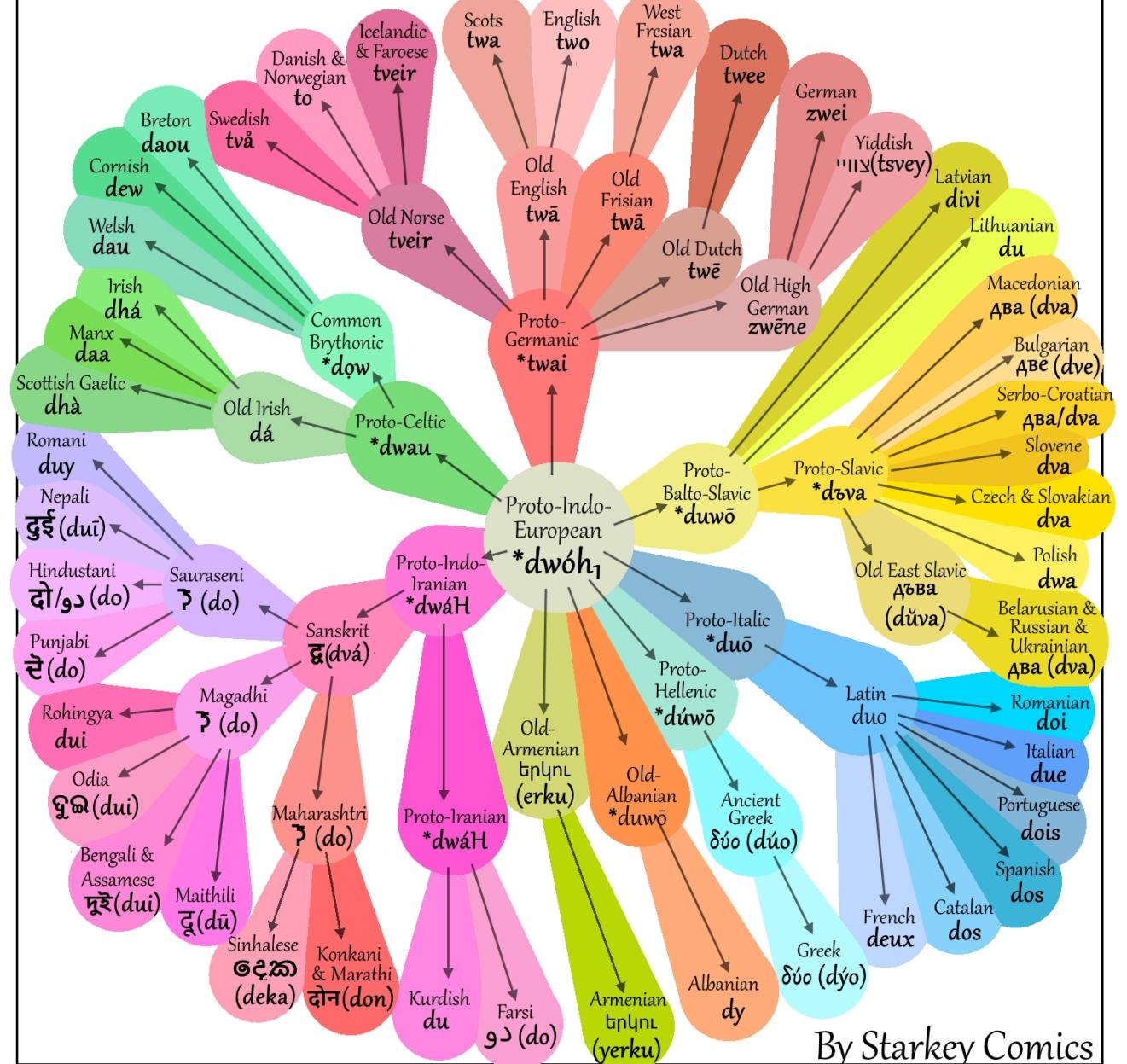
# 原來語言學 不是學語言



# 我以為我會 研究的語言

英文系學生的跨領域探索

## Indo-European Words for Two



# 但我實際上 研究的語言

## 英文系學生的跨領域探索



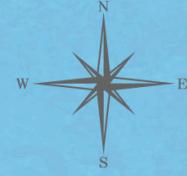


# 台灣南島語

## 臺灣原住民族 16族分布圖

臺灣原住民族文化園區

Namasan Kakivaualjan tua Kakudakudan nua Kacalisian i Taivan

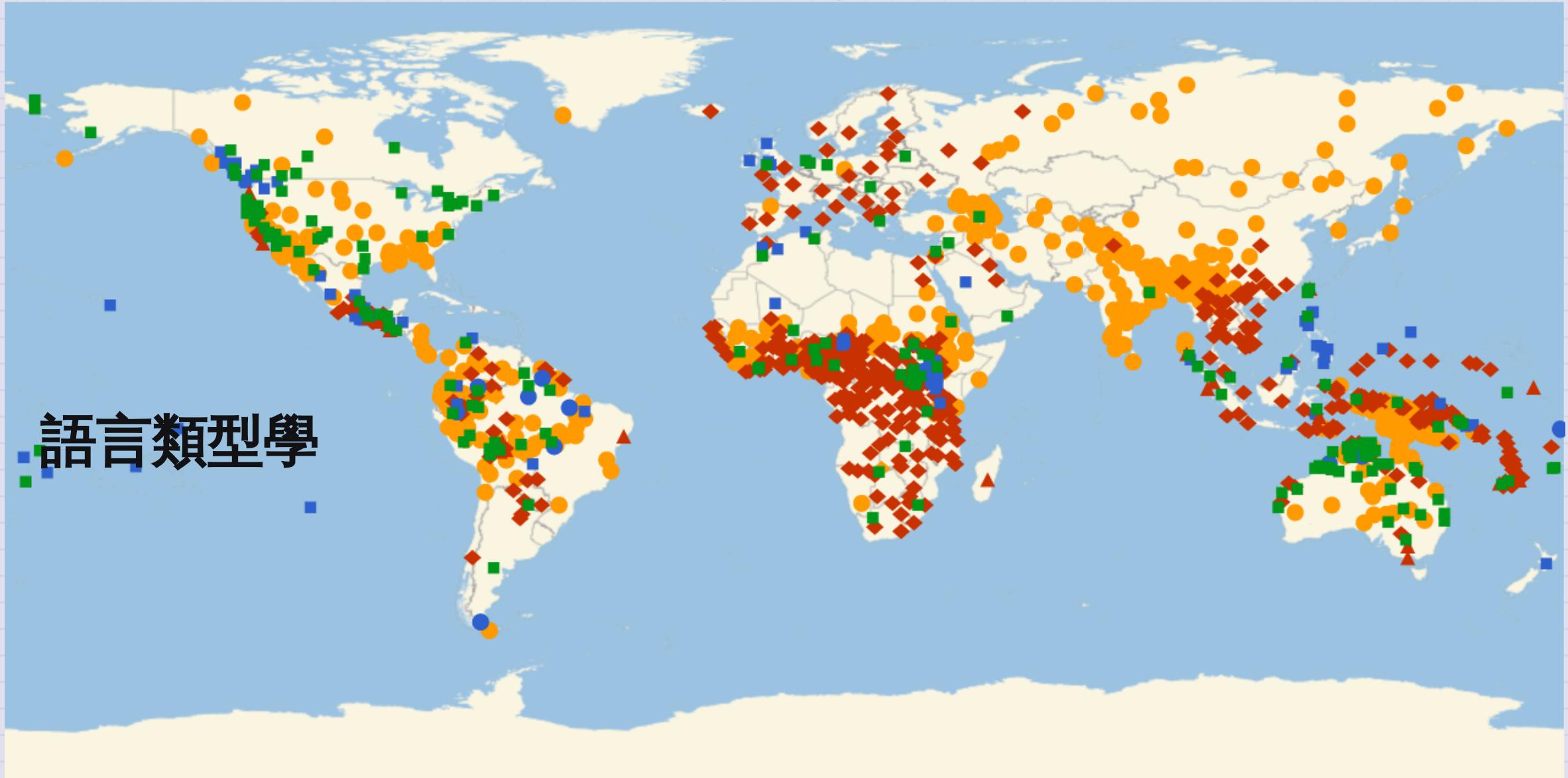


# 學位論文

- 碩士: 噶瑪  
蘭語空間認知之研究
- 博士: 台灣南島語的名物化與領屬結構



## Order of Subject, Object and Verb



- 1 SOV
- 2 SVO
- 3 VSO
- 4 VOS
- 5 OVS
- 6 OSV
- 7 No dominant order

- 名物化論文 1/2

Jiang, Haowen. 2021a.

Argument nominalization in  
Formosan languages: A  
functional-typological  
approach. Osaka: Osaka  
University Press.

[Amazon >>](#)

Nominalization Theory  
and  
Linguistic Analysis

Sung-Yeo Chung  
Masayoshi Shibatani

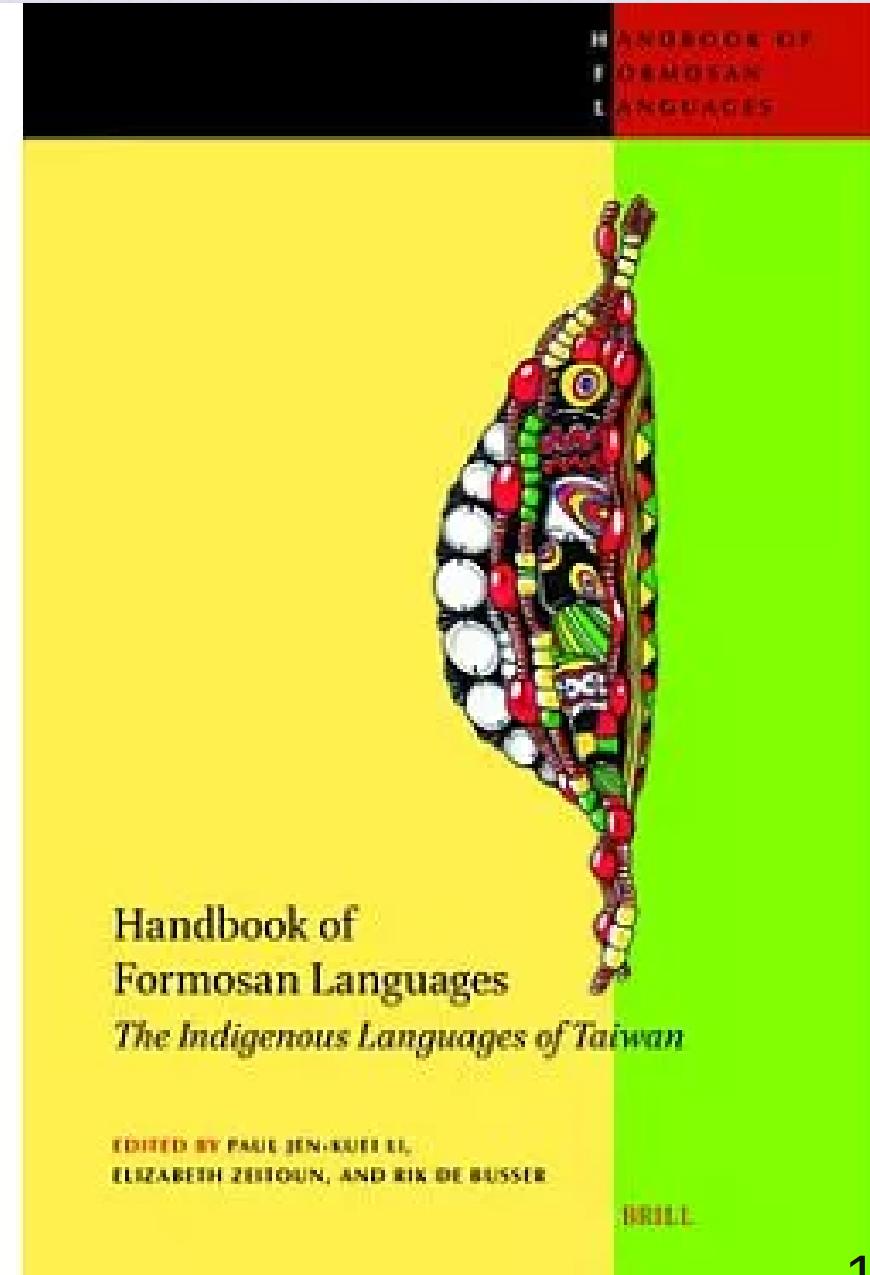
体言化理論と  
言語分析

鄭聖汝  
柴谷方良  
編

- 名物化論文 2/2

Jiang, Haowen. 2023b. 16.  
Nominalization in  
Formosan Languages.  
Leiden: Brill

[Brill >>](#)



• 布農語線上詞典 >>

The screenshot displays the homepage of the Indigenous Languages Online Dictionary. On the left, a vertical green sidebar features the title "原住民族語言線上辭典" and a stylized yellow leaf logo. The main content area shows circular icons for various languages: A美語 (Amis), 泰雅語 (Taiwanese Paiwan), 排灣語 (Pavian), 布農語 (Bunun), 卑南語 (Bunun), 魁凱語 (Kai), 鄒語 (Tsou), 賽夏語 (Saiva), 雅美語 (Yami), 邵語 (Shao), 噶瑪蘭語 (Kamayalan), 太魯閣語 (Taroko), 撒奇萊雅語 (Sakellaia), 賽德克語 (Sediq), 拉阿魯哇語 (Raawu), and 卡那卡那富語 (Kanak). To the right, a header bar includes links for "網站導覽", "關於本站", and "使用手冊下載". Below it is a "最新消息" (Latest News) section with a message about a recruitment drive for the online dictionary. The bottom right contains a "每日一句" (Phrase of the Day) section with a Yami phrase and its translation, and a "跨族語檢索" (Inter-ethnic Language Search) bar with input fields for language selection and search.

- 標記式語言 XML >>

```
<?xml version="1.0" encoding="UTF-8"?>
<interlinearGloss>
  <sentence>Я тебя люблю.</sentence>
  <gloss>
    <word>Я</word>
    <gloss>I</gloss>
    <translation>I</translation>
  </gloss>
  <gloss>
    <word>тебя</word>
    <gloss>you</gloss>
    <translation>you</translation>
  </gloss>
  <gloss>
    <word>люблю</word>
    <gloss>love</gloss>
    <translation>love</translation>
  </gloss>
  <freeTranslation>I love you.</freeTranslation>
</interlinearGloss>
```

 檢索

詞項列表

範疇分類

逐詞註解

首頁 / 布農語 /  檢索

# Mazima

詞頻： (1118)

收錄來源：九階教材

## 來源 >>

### 解釋1 喜歡

- Mazima saikin saicia. 

我喜歡牠。

- 
- Mazima saikin maun mas haisingdulaz. 

我喜歡吃糯米蒸筒飯。

• 通過布農語認證考試  
台灣立報 >>

## 10月拚認證 找回母語記憶

記者：呂淑姮台北報導

地點：全臺 全部

「達悟」在達悟族語裡面，代表「人」的意思，指的是在蘭嶼的達悟族人。手上掛著象徵「船之眼」串珠的達悟族人廖清福說，他從15歲離開蘭嶼漁人部落，到台東念書，之後就很少再講族語。

今年53歲的廖清福，高中開始到台東求學，到外地之後沒有機會和環境使用自己的達悟母語，雖然小時候會講，但是當時碰到禁說方言政策，讓族語的回憶漸漸有些模糊。

近幾年來原住民族語復振，廖清福每到飛魚季，一定回到蘭嶼老家，向80多歲的母親認真學習母語，要把達悟族語再找回來，後來成為97年達悟族語認證考試榜首。現在，他也將族語傳承給自己的孩子：「希望他們知道自己的來處。」

行政院原民會18日舉辦「由我們發聲！母語是我們的身分證」記者會。副主委林江義宣布，99年度原住民族語言能力認證考試將於10月30日舉辦，報名日期自即日起到9月17日。

林江義說，今年是第8屆母語認證考試，和前7次不同的地方在於獎勵辦法。只要年滿70歲或者未滿15歲通過認證者、非原住民籍通過認證者、成績滿分、各族別榜首、6人以上團體報名，都可以獲得1千元獎金與表揚。

族語考試不限定年齡與族別，漢人也可以參加。一位曾在台大語言所擔任研究助理的學生江豪文，通過布農族語認證，他在台大時參與的研究和布農族語有關，覺得布農語很好聽，所以特別去學習，也通過了考試。

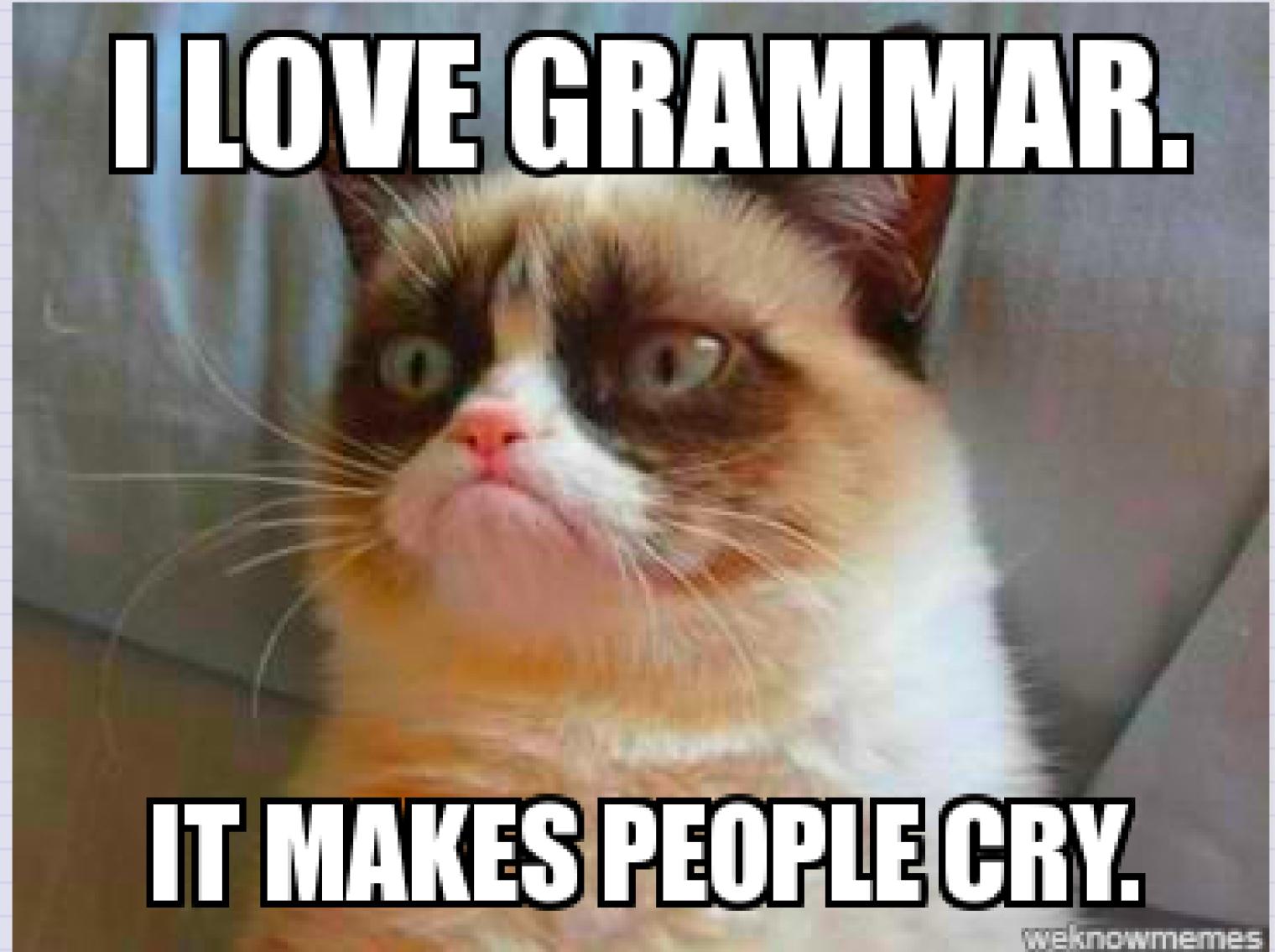
A photograph showing a person's hands and arms from the side. They are wearing a dark suit jacket and a light-colored shirt. Their right hand holds a black fountain pen, poised over a white clipboard. A small, open notebook or folder is attached to the clipboard. In the background, another person's arm and hand are visible, also in a suit, holding a pen. The scene is set at a wooden desk with some papers and a gold paperclip on it. The lighting is soft and focused on the hands.

工作經歷



英文講師

臺北科技大學  
應用英文系

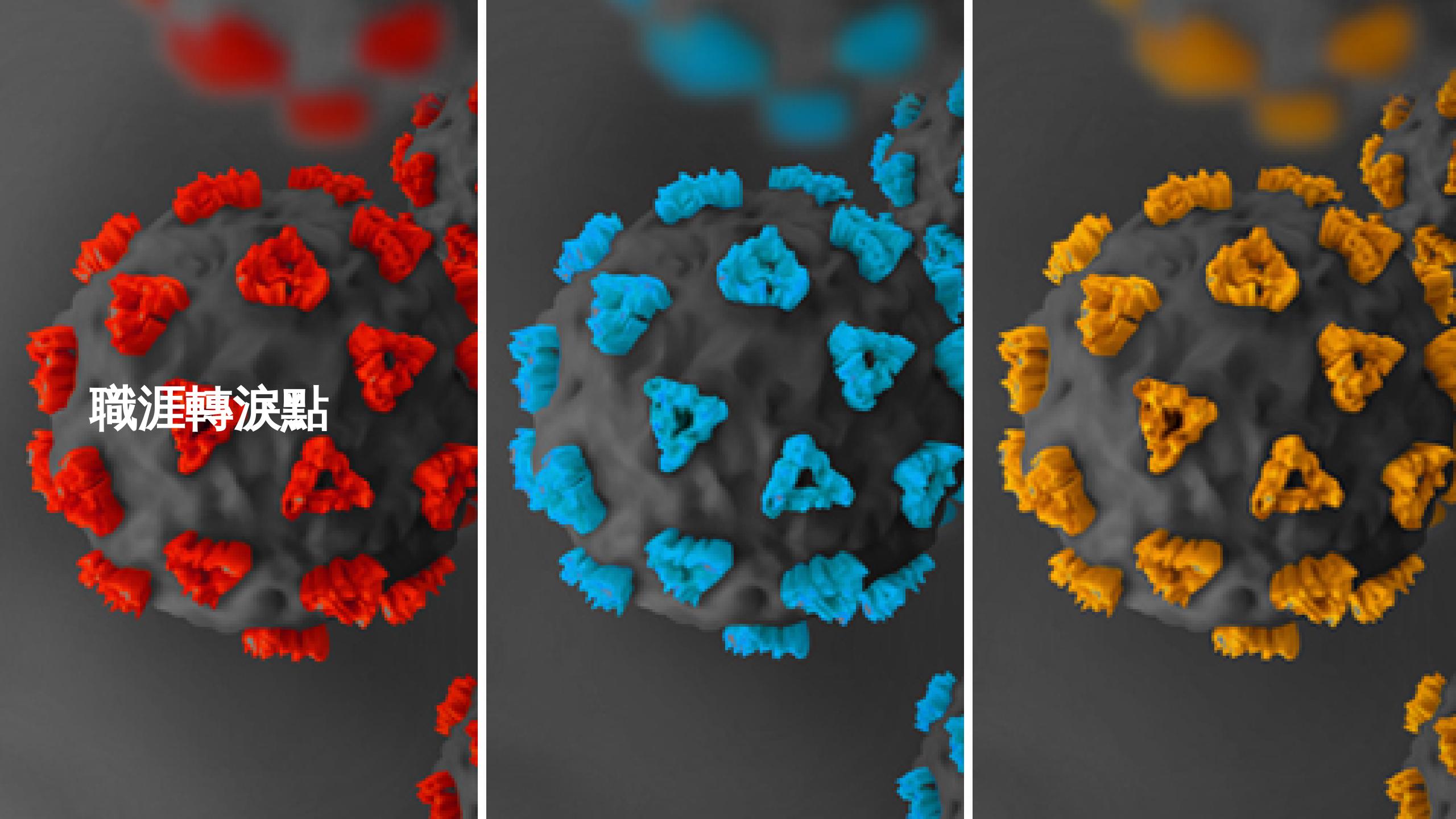


博雅博士後  
研究員

北京大學  
中文系

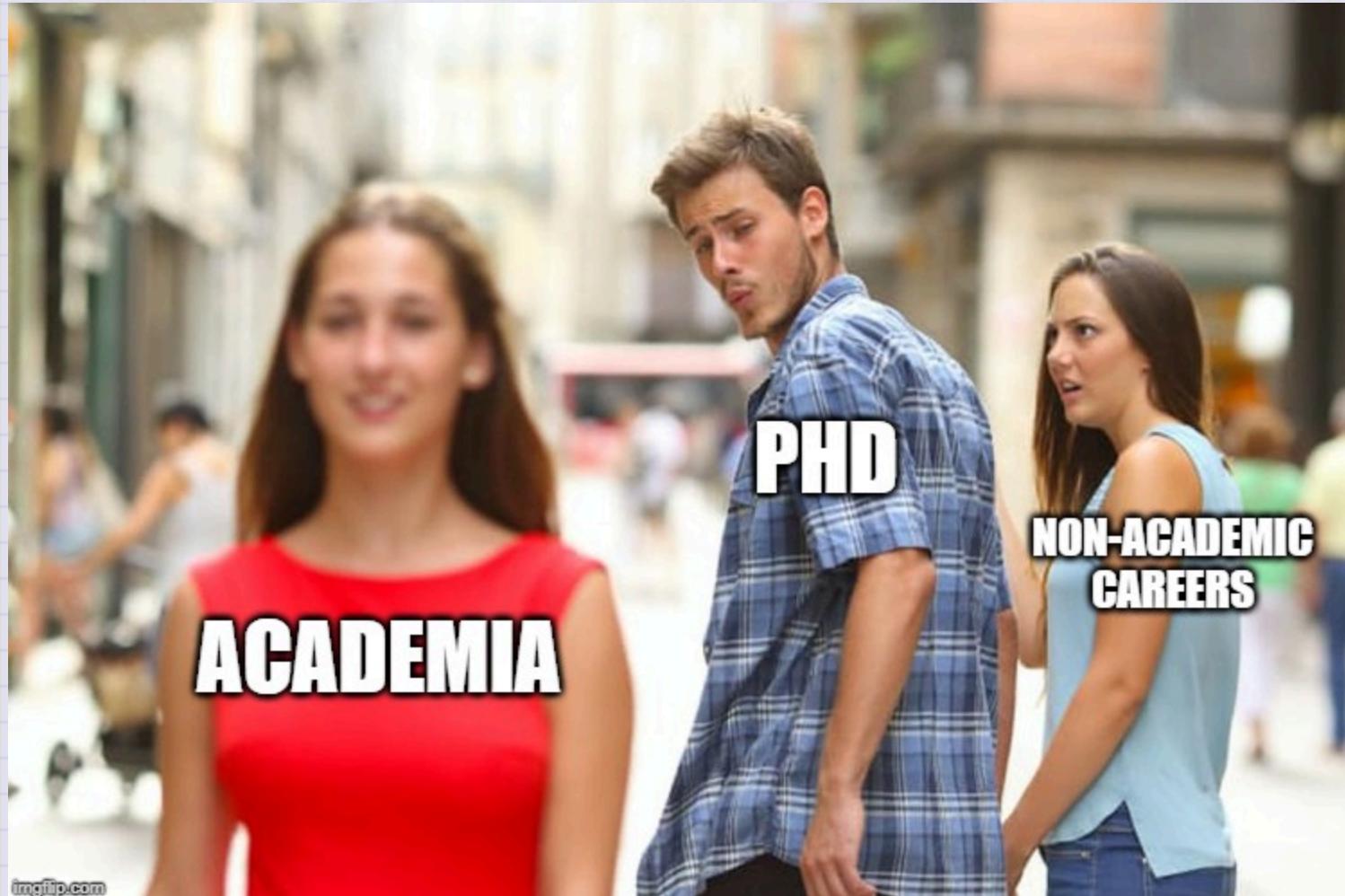
英文系學生的跨領域探索

The screenshot shows the homepage of the Peking University Journals Platform. The header includes the university's logo and name in Chinese and English, along with navigation links for Home, Journals, Articles, and About, and options for Login/Registration and language selection. A large banner image features autumn foliage and traditional Chinese architecture. The main content area displays an article titled "Essays on linguistics". Below the title are links for Journal homepage, Introduction, Instructions for Authors, and Back Issues. The article itself is titled "卑南语的人称标记" (Person Systems in Puyuma, an Austronesian Language of Taiwan) by 江豪文 (Jiang Haowen). It includes author information, affiliation (Beijing University Chinese Language Research Center/Beijing University Chinese Department, 100871), and citation details. To the right of the article are download options (PDF, 1712 KB), reading statistics (285 reads, add to list), and related articles.

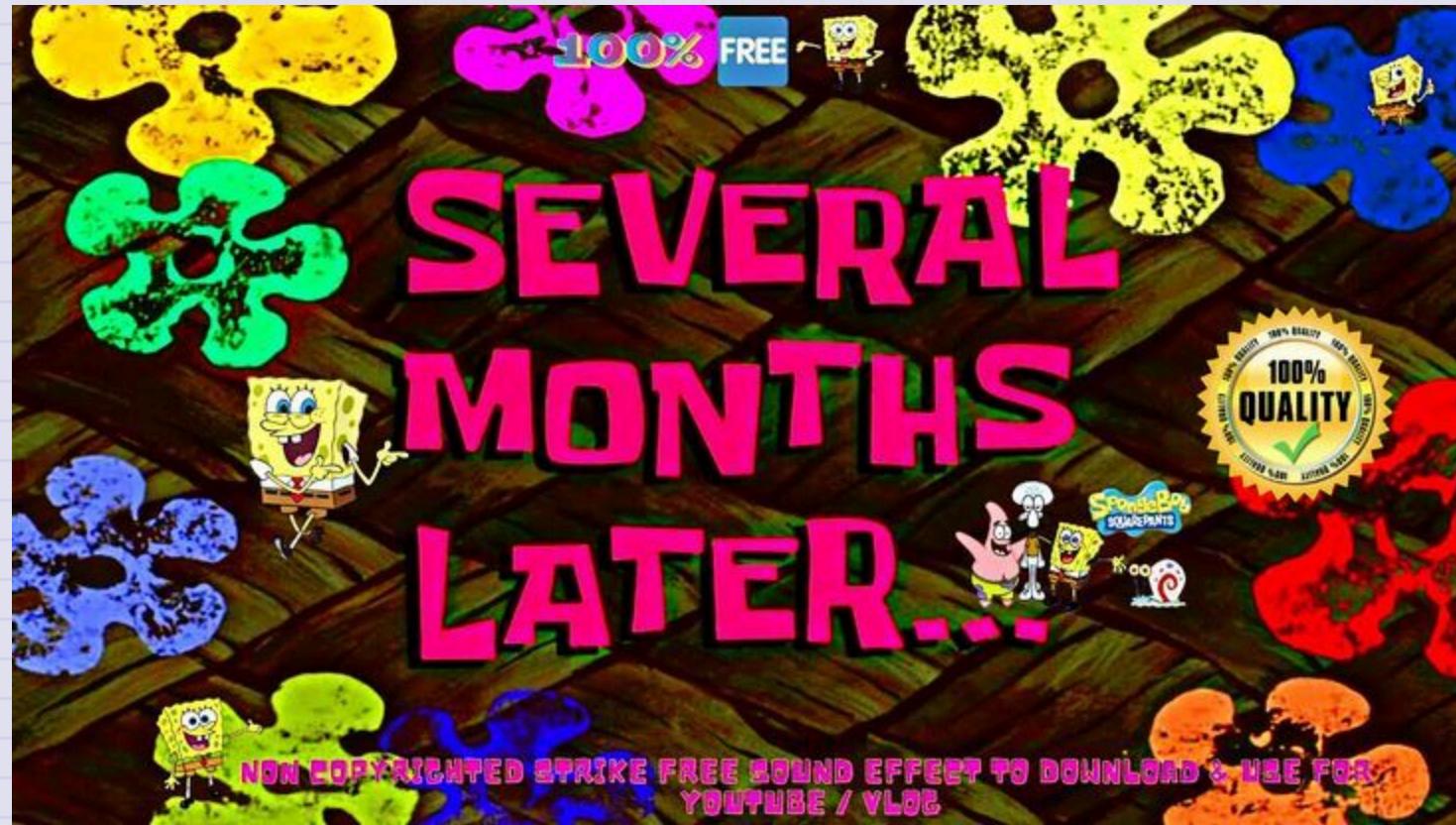


職涯轉捩點

- 心態



- 自學





AI 工程師  
哈瑪星科技  
創新研發中心

- 業界初體驗



哈瑪星科技  
HAMASTAR TECHNOLOGY CO., LTD.



AI 工程師

香港商慧科訊業

AI Lab

• 跨區合作

成立于 **2014** 年  
在香港、台北、北京设有研发中心



香港      台北      北京



2016年荣获香港政府 **853** 万创新科技基金



2018年荣获国际自然语言处理与中文计算大会“单文本自动摘要”技术评测 **第一名**



**10+** 项国际发明专利



广东省智能创新协会 **理事单位**

数据分析  
襄理

新光人壽  
數位資訊部

- 資安法規



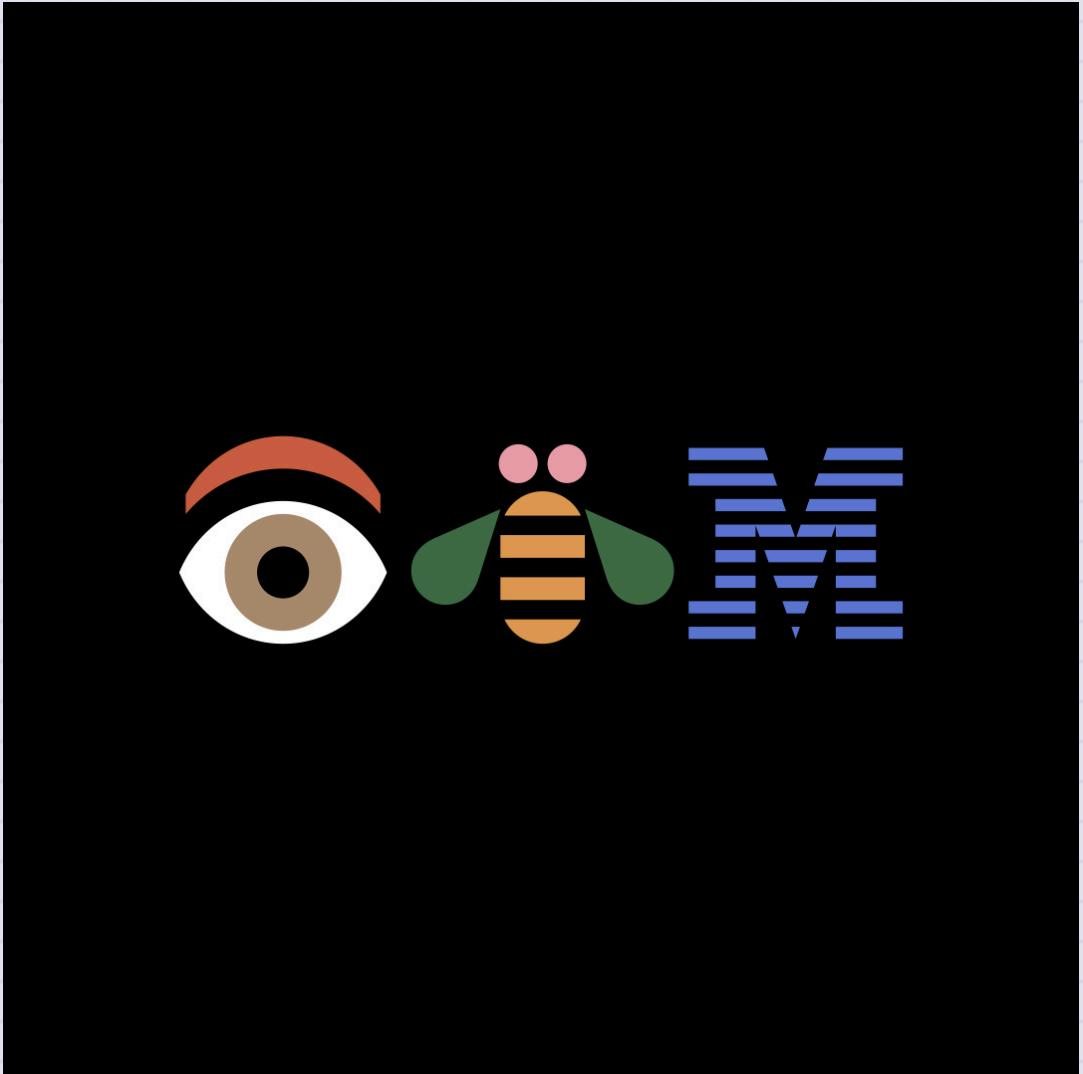
新光金控

新光人壽  
Shin Kong Life

AI 暨資料解決  
方案技術工程師

IBM  
科技事業部

- 美商文化



# 英文系 常見職涯



# 英文系 常見職涯

source >>

英文系學生的跨領域探索

## Career Paths for English Majors

Based on a Study of Career Profiles of English Graduates with up to 10 Years of Professional Experience

### Company Types

50% of the Graduates Chose to Pursue a Corporate Career

50% Corporate

40% Further Studies

5% Non-profit

4% Arts/Entertainment

1% Military & Other

### Corporate Paths

50% of the Graduates that Chose a Corporate Career Went to a Large Corporation

50% Large Corporation

15% Wall Street

15% Writing/Editing

15% Start-up

5% Consulting

### Field Types

Strategy and Management is the Most Popular Corporate Field

30% Strategy/Mgmt.

20% Marketing

15% Public Relations

15% Technology

10% Sales

10% Human Resources

# 語言學 常見職涯



# 自學歷程



## 學習進程

01 Python 程式語言

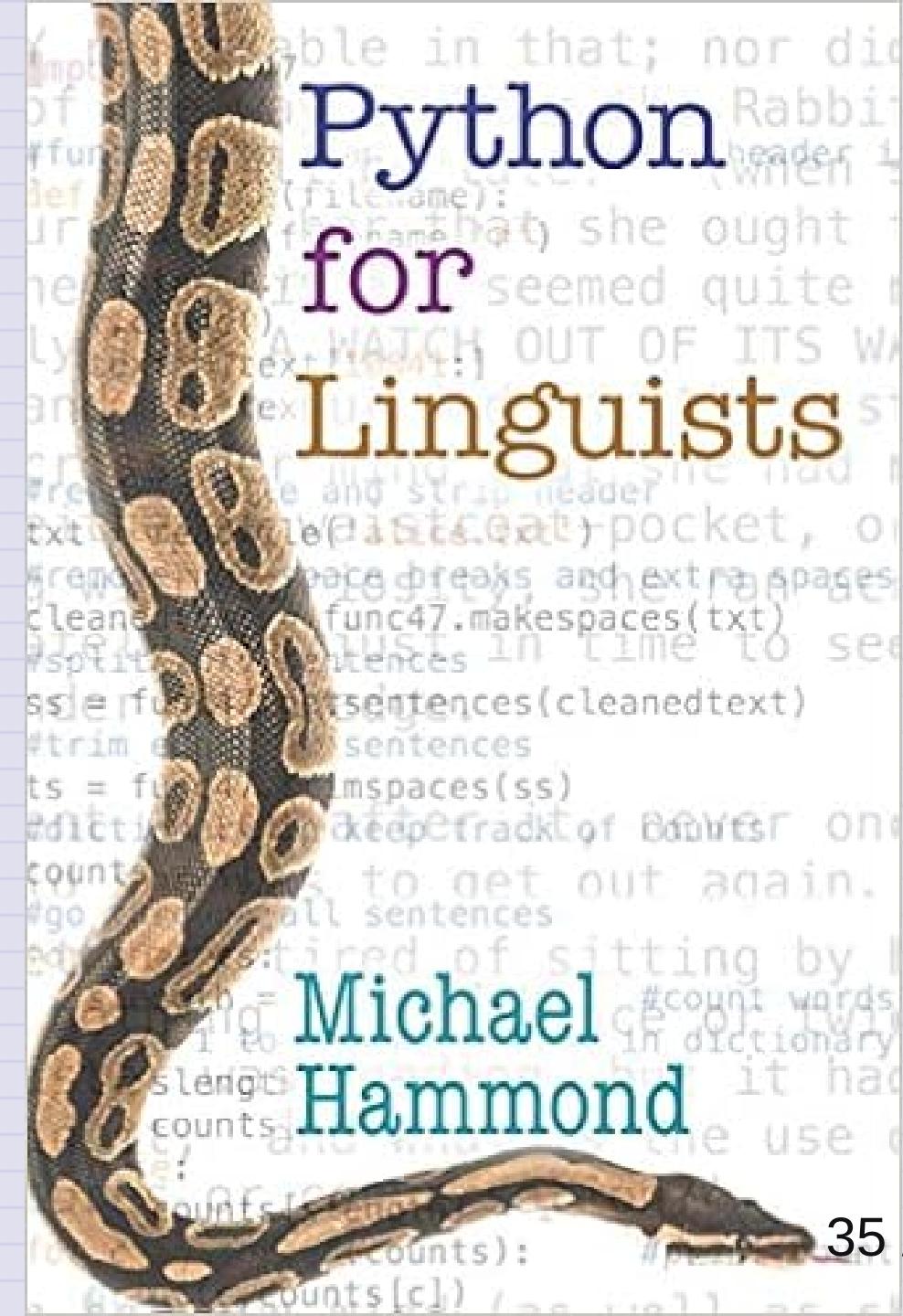
02 網路爬蟲

03 自然語言處理

04 機器學習

## Python 是蟒蛇也是語言

### 01 Python 程式語言



## 程式語言相比自然語言的優勢

- 沒有人是母語者
- 不需練聽說，只需讀寫

"the best way to learn a language  
is to speak to natives"  
the guy learning Python:



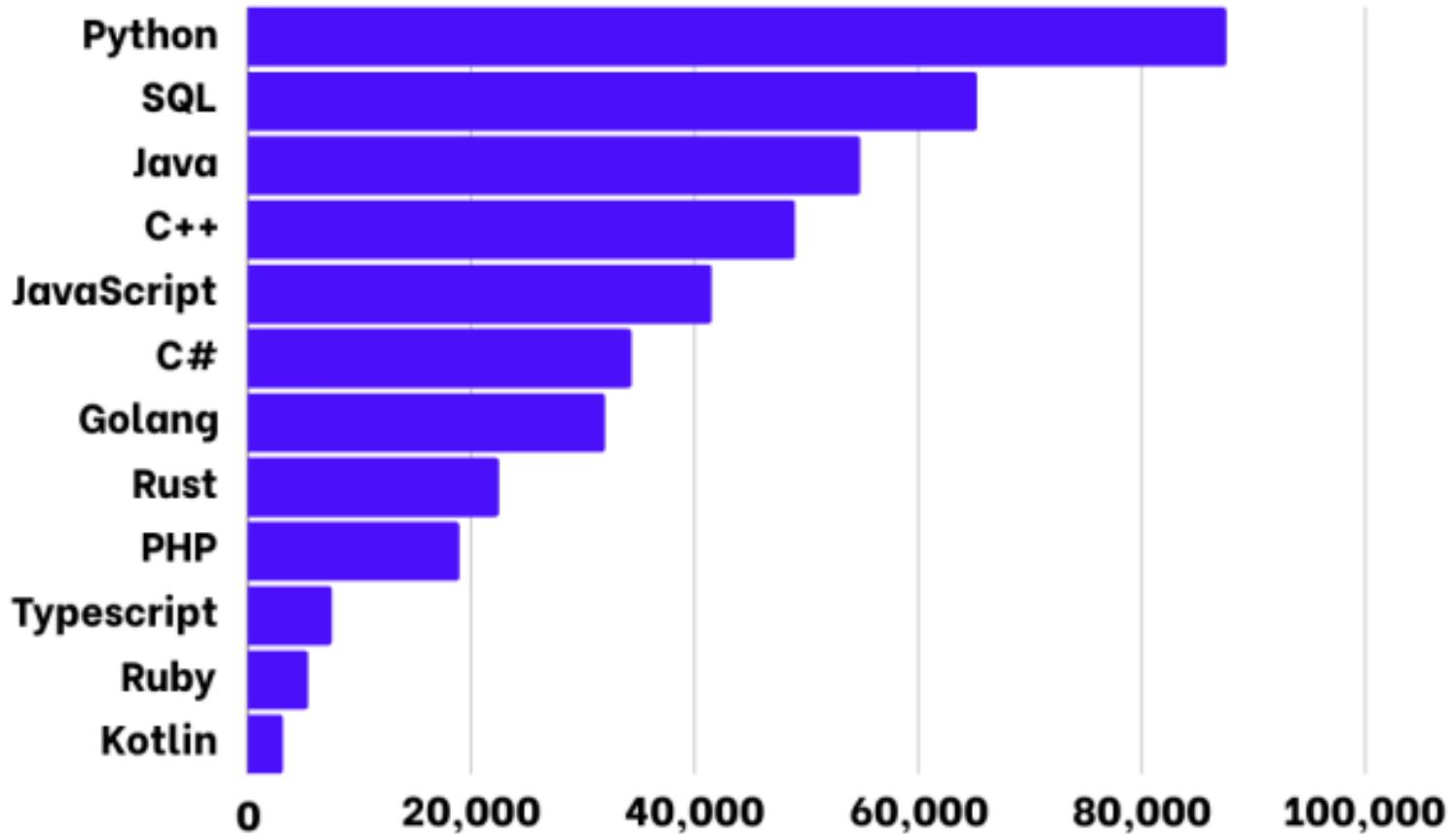
# Python 相比其他程式語言的優勢

- 職缺多

[Source >>](#)

## 2024 Programming Language Breakdown

# of open job postings for each language, in the US only



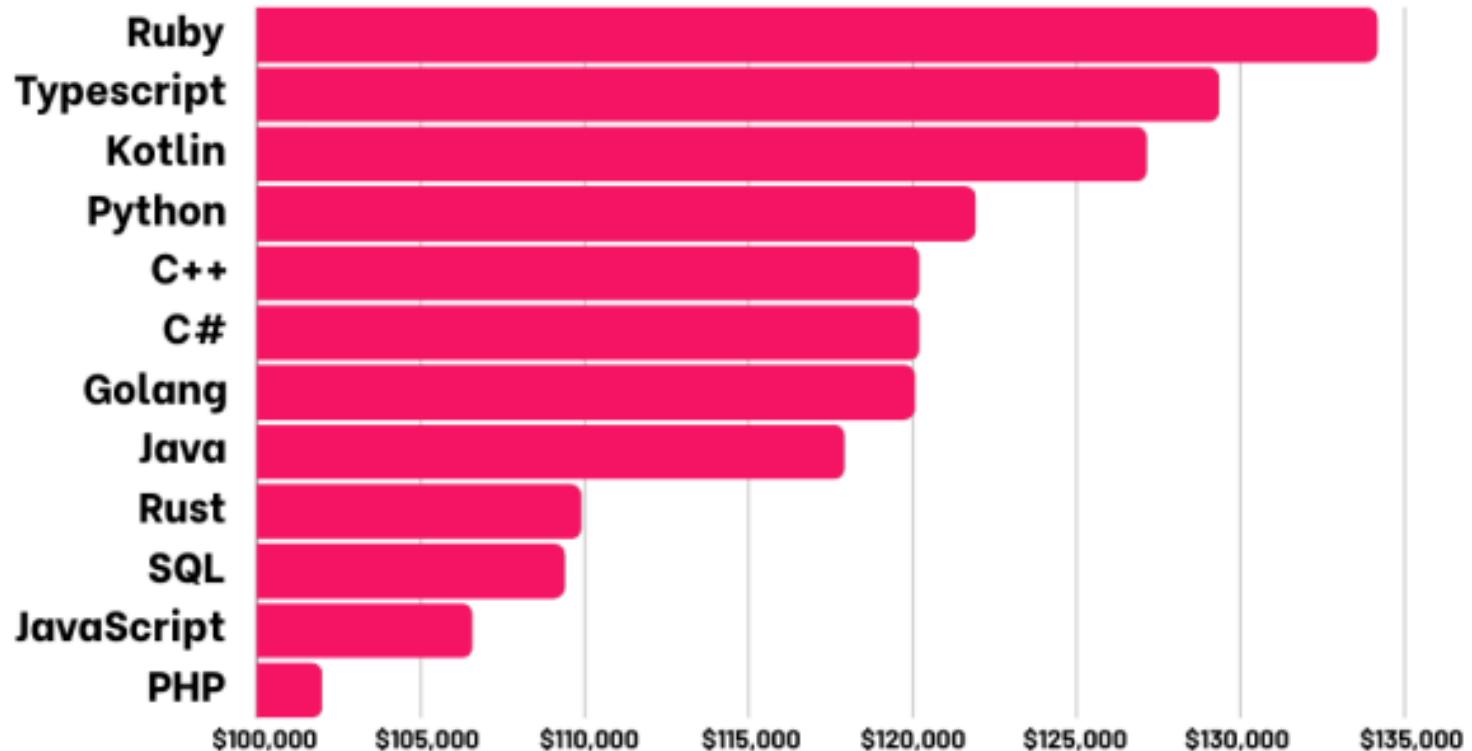
## Python 相比其他程式語言的優勢

- 待遇高

[source >>](#)

### 2024 Programming Language Breakdown

Average Salary in USD





連小朋友都學得會!!!  
真心不騙！！！

<b>CEFR levels</b>	<b>Study hours</b>	<i>from</i>	<i>to</i>
<b>C2</b>		<b>1,000</b>	<b>1,200</b>
<b>C1</b>		<b>700</b>	<b>800</b>
<b>B2</b>		<b>500</b>	<b>600</b>
<b>B1</b>		<b>350</b>	<b>400</b>
<b>A2</b>		<b>180</b>	<b>200</b>
<b>A1</b>		<b>90</b>	<b>100</b>





# PYTHON

## COMPLETE COURSE

### BEGINNER TO ADVANCE

### 7 HOURS+



## 軟體工程師 的自學比例

[source >>](#)

90%

of respondents reported  
that they were at least  
partially self-taught.

(2017 Stack Overflow developer survey)

高達 80% 的  
人透過線上  
資源自學

source >>



# 軟體工程師 的十大技能

[source >>](#)

Skill	Developers	Rank	Movement
Problem Solving	234,722	1	0
REST API	21,990	2	0
Machine Learning	21,104	3	6
Data Wrangling	19,937	4	8
React	19,935	5	-2
HTML/CSS/JS	9,004	6	-2
Node.js	7,438	7	-1
.NET	5,018	8	0
Angular	4,989	9	-4
Spring Boot	4,681	10	-3

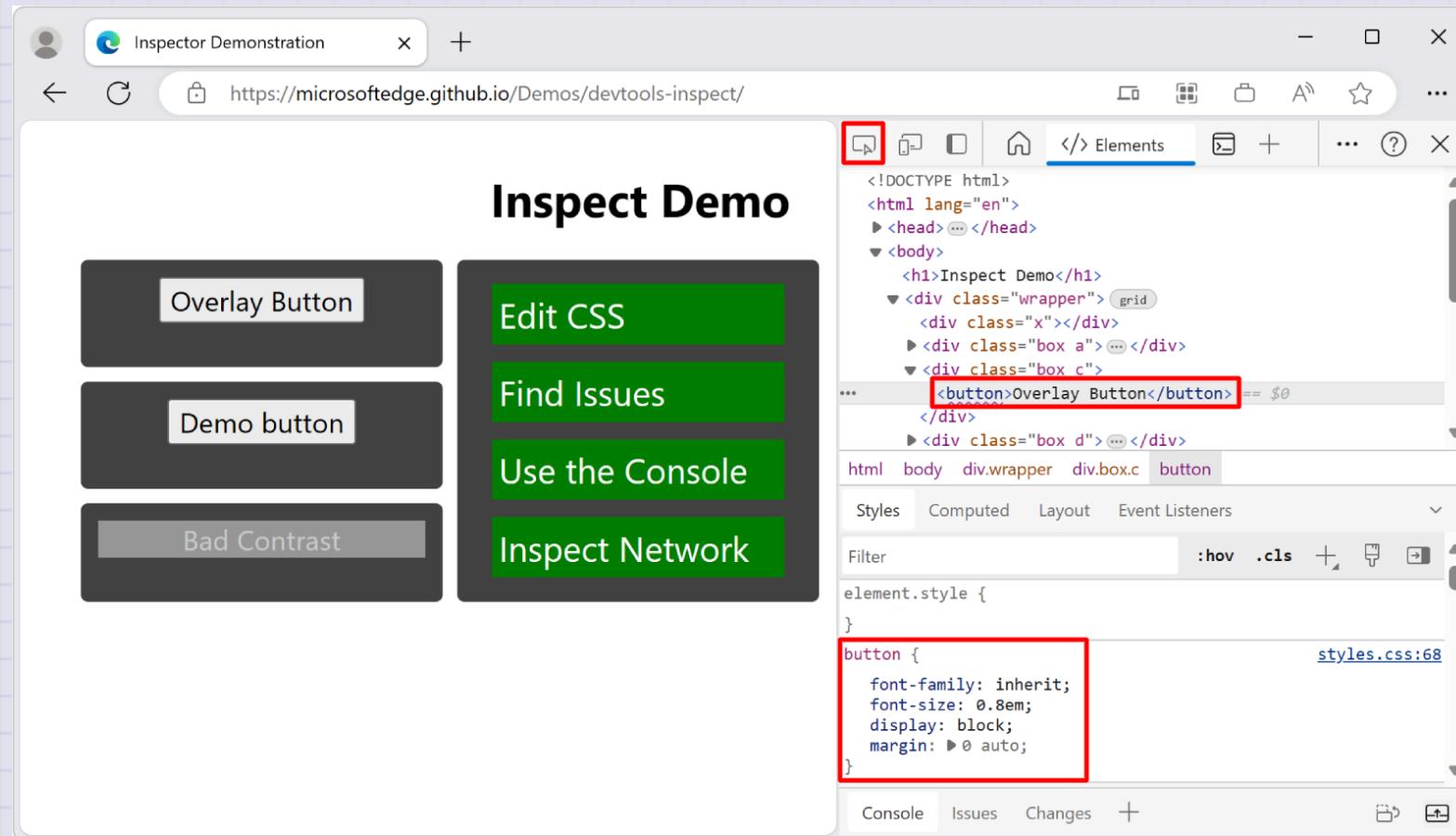
## 爬蟲能快速取得資料

### 02 網路爬蟲

Web Scraping Using Python



# 網路爬蟲 - 用 Python 解析 HTML



契機



族語 E 樂園 >>



代名詞  
指示詞



疑問詞



抽象名詞

2024-10-29@NTUT

目的地或飯店名稱  
高雄  
入住日期  
2021年05月15日 週六 ~ 2 晚  
退房日期  
2021年05月17日 週一  
房間數及人數  
1間房，2位成人，0位孩童  
搜尋



共找到 252 家高雄飯店

自訂篩選

熱門篩選

- 免費取消
- 即時確認
- 免費WiFi
- 免費早餐
- 很棒：評分4.7以上

星級

- 五星/豪華
- 四星/高級
- 三星/舒適



高雄比歐緻居

Brio Hotel

★★★★★  
三多商圈/五福商圈 距離市中心 2公里

限时優惠



很棒 4.7

173則評鑑

-14%

TWD 3,510

TWD 2,984 起

平均每晚含稅價

訂購



和逸飯店(高雄中山館)

Hotel Cozzi Zhongshan Kaohsiung

★★★★★ 動人夜景

三多商圈/五福商圈 距離市中心 3公里



很棒 4.7

2,778則評鑑

TWD 2,874 起

平均每晚含稅價

訂購

1 max\_df.head()

ZH_Name	EN_Name	Hotel_ID	City	Location	Address	Campaign	Mask	Hold_Room	Min_Price
0 高雄比歐緻居	Brio Hotel	22260305	高雄	None	中山一路 14-26號	None	None	2	2584
1 和逸飯店(高雄中山館)	Hotel Cozzi Zhongshan Kaohsiung	2985883	高雄	None	中山二路 260號30樓	None	None	19	2488
2 高雄喜達絲飯店		2328586	高雄	None	成功一路 286號	None	None	3	3306
3 高雄國賓大飯店	The Ambassador Hotel Kaohsiung	701744	高雄	None	民生二路 202號	None	None	9999	2097
4 高雄麗尊酒店	The Lees Hotel	701698	高雄	None	五福一路 105號	None	None	10	2208
5 高雄水京棧國際酒店	H2O Hotel	8194467	高雄	None	明華路 366號	None	None	1	4701

# 台灣南島語爬蟲成果

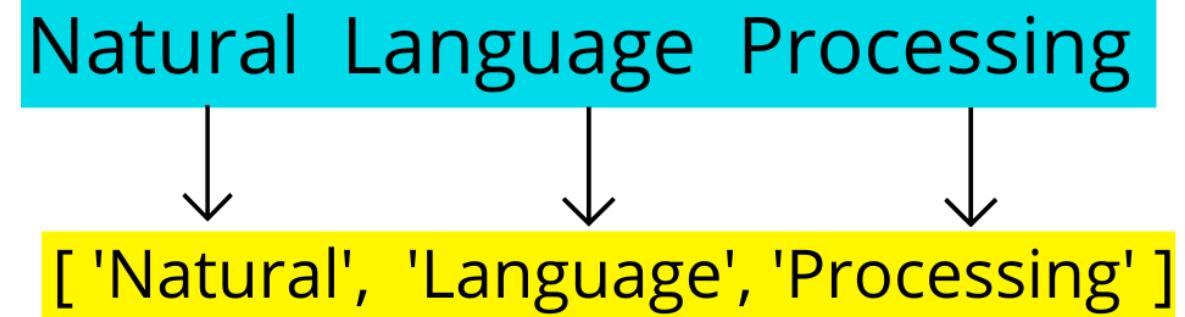
[台灣南島語-華語句庫資料集 APP >>](#)

Lang_En	Lang_Ch	Ab	Ch	From
58650	Saaroa 拉阿魯哇	umacʉka maivʉvʉrʉnga tumuakia umarua sipaasʉrʉpa masʉrʉpʉ.	早上起床，都要用毛巾洗臉。	詞典
115515	Bunun 布農_郡群	Namaun a uvavazan mas hangvang tu balang.	孩子們要吃牛排。	生活會話
92691	Saisiyat 賽夏	rohaenan panrahi: ka rarahi: kayzaeh 'okay tango:i.	晚上掛蚊帳才不會被蚊子叮。	詞典
28392	Rukai 魯凱_霧台	malra patuelre kwini ya cukudhane kwi belebele.	那桌上的香蕉全部拿去。	詞典
117888	Paiwan 排灣_中	kasi nu sun a na kitulu tua pinaiwanan ?	你在哪裡學排灣話的？	九階教材
126445	Puyuma 卑南_南王	munuma tu ami kanu wadi na babayan?	你妹妹幾歲？	句型
6699	Amis 阿美_中部	O cisafakay ko felac no miso.	你的米堆摻有空殼米。	詞典
119373	Rukai 魯凱_東	kadro ka mabocoko si katha, takosiya sa'ararake .	不但吃得飽，並且都很營養。	九階教材
46746	Seediq 賽德克_德固達雅	Mkela melux ka tama mu ma; ini kela smberih.	我父親會對果樹及瓜果施咒；但不會解咒。	詞典
5051	Sakizaya 撒奇萊雅	maudad tu saupuen ku kasuy i salining.	下雨了把木材堆在走廊。	詞典

自然語言處理能透過程式  
處理大量文字

### 03 自然語言處理

#### Tokenization



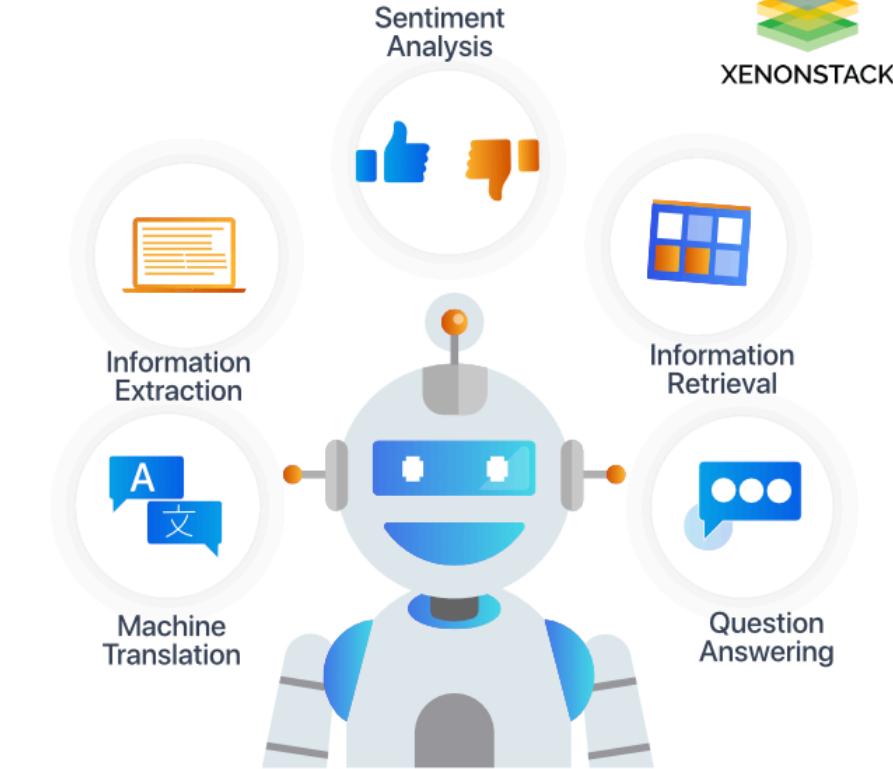
## 自然語言處理的定義

Natural language processing (NLP) is a subfield of **linguistics**, computer science, and artificial intelligence concerned with the interactions between computers and human language, in particular how to **program computers to process and analyze large amounts of natural language data**.

[Wikipedia >>](#)

# NLP 的應用

# Applications of **Natural Language Processing** in Different Domains

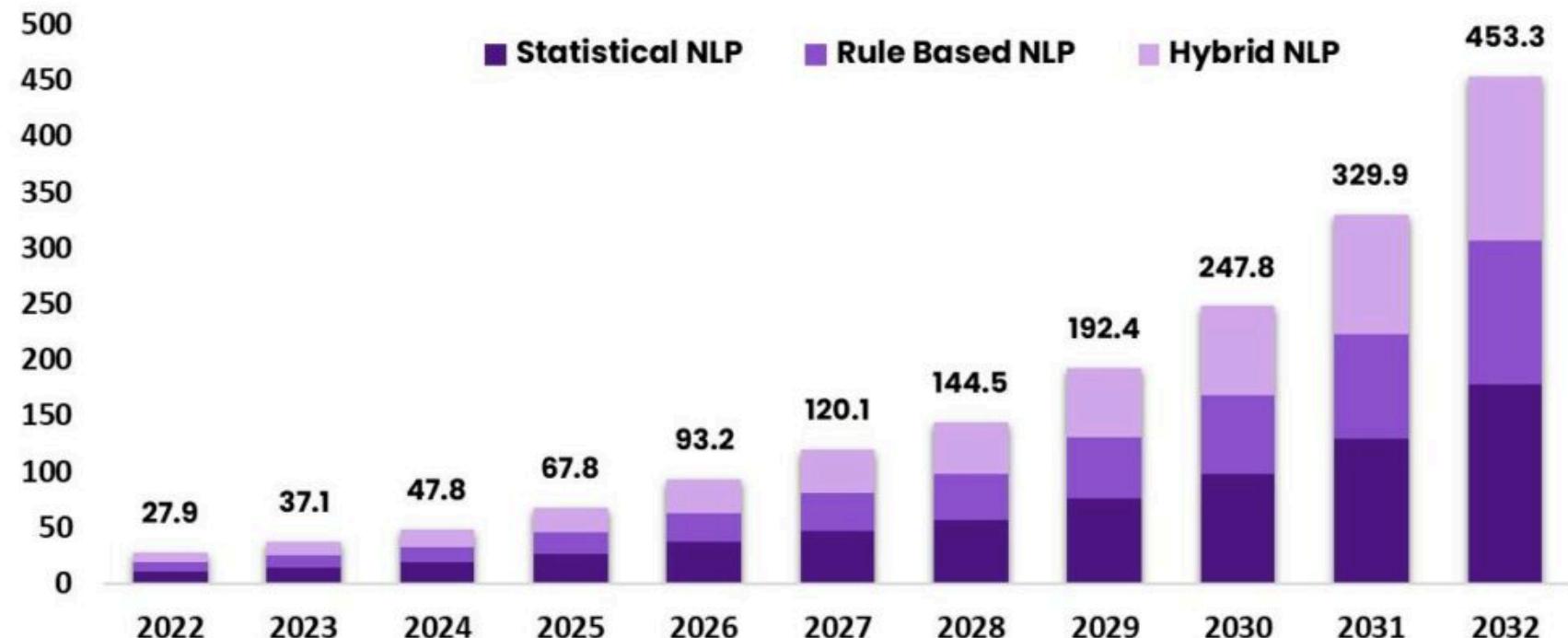


## NLP 的市值

source >>

### Global Natural Language Processing Market

Size, by type, 2022-2032 (USD Billion)



The Market will Grow  
At the CAGR of:

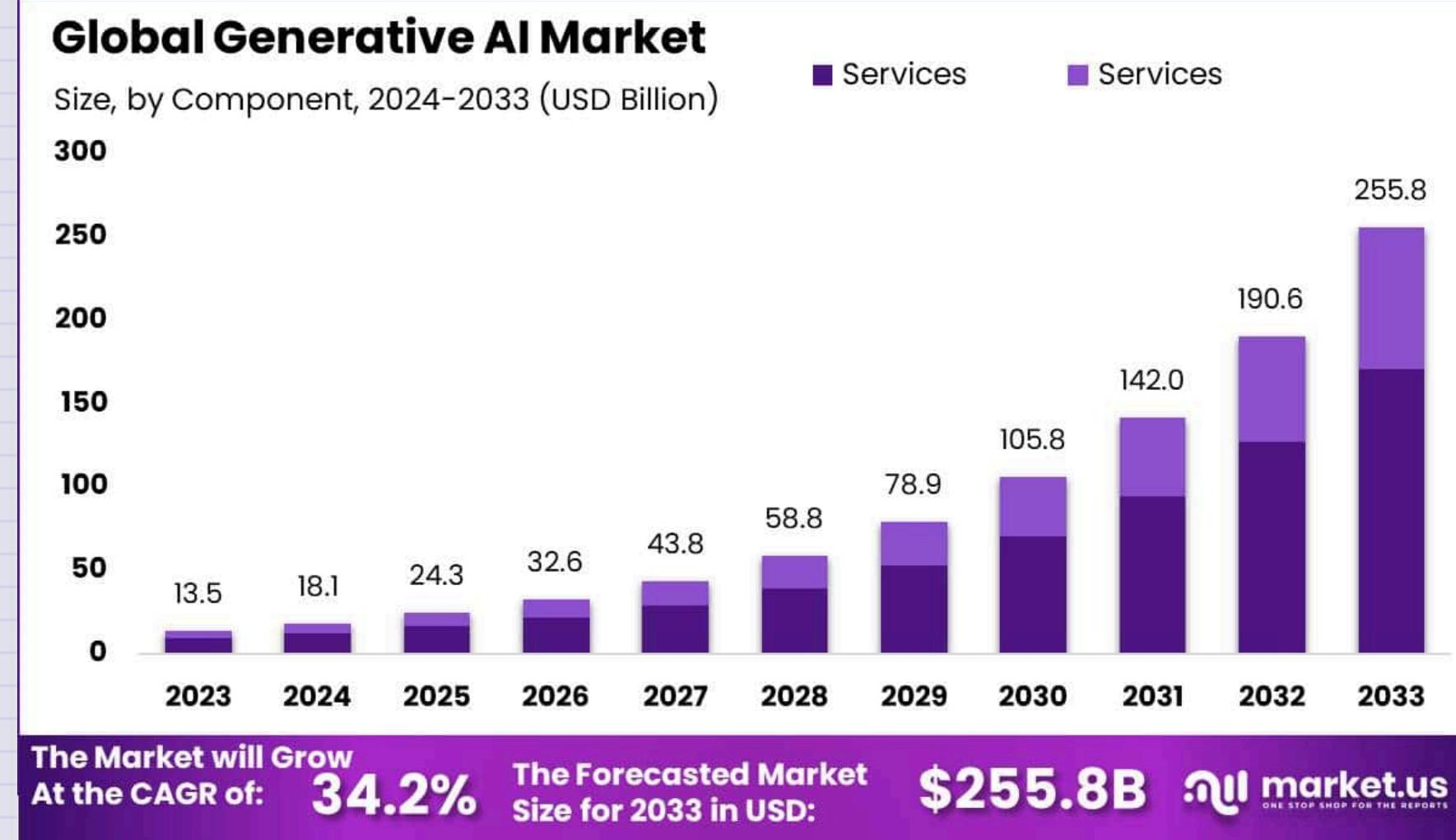
33.1%

The forecasted market  
size for 2032 in USD:

\$453.3B  market.us  
ONE STOP SHOP FOR THE REPORTS

# 生成式 AI 的市值

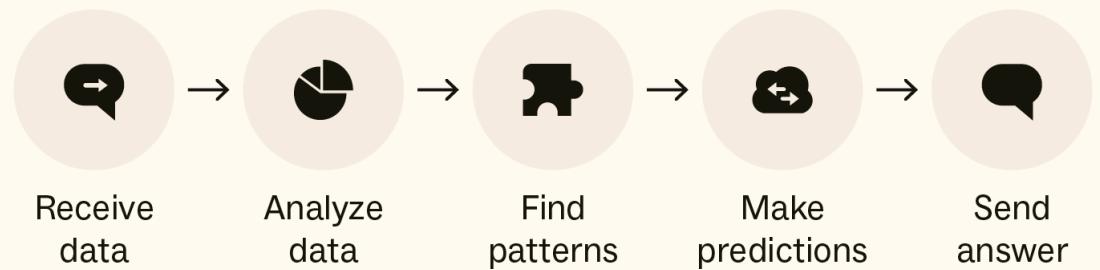
source >>



# 機器學習能透過已知預測 未知

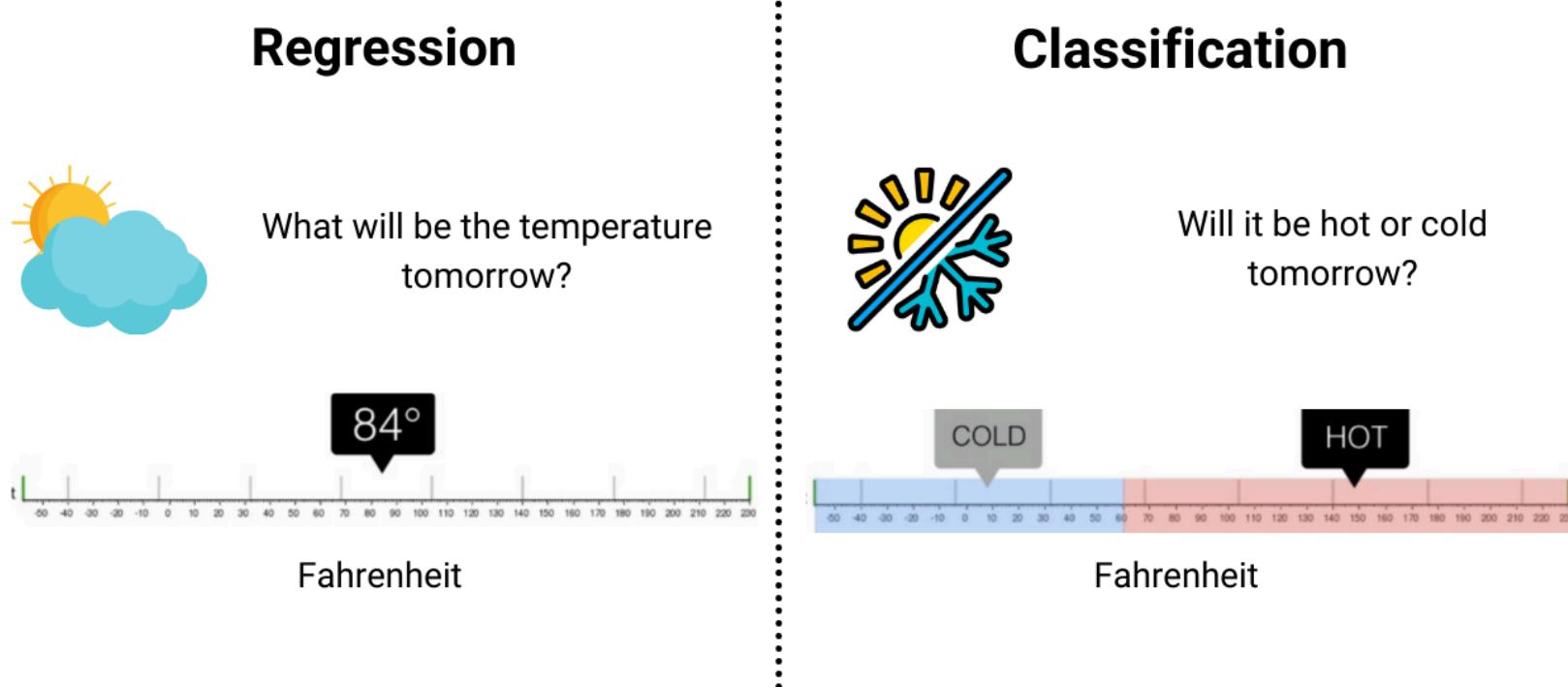
## 04 機器學習

### The machine learning process



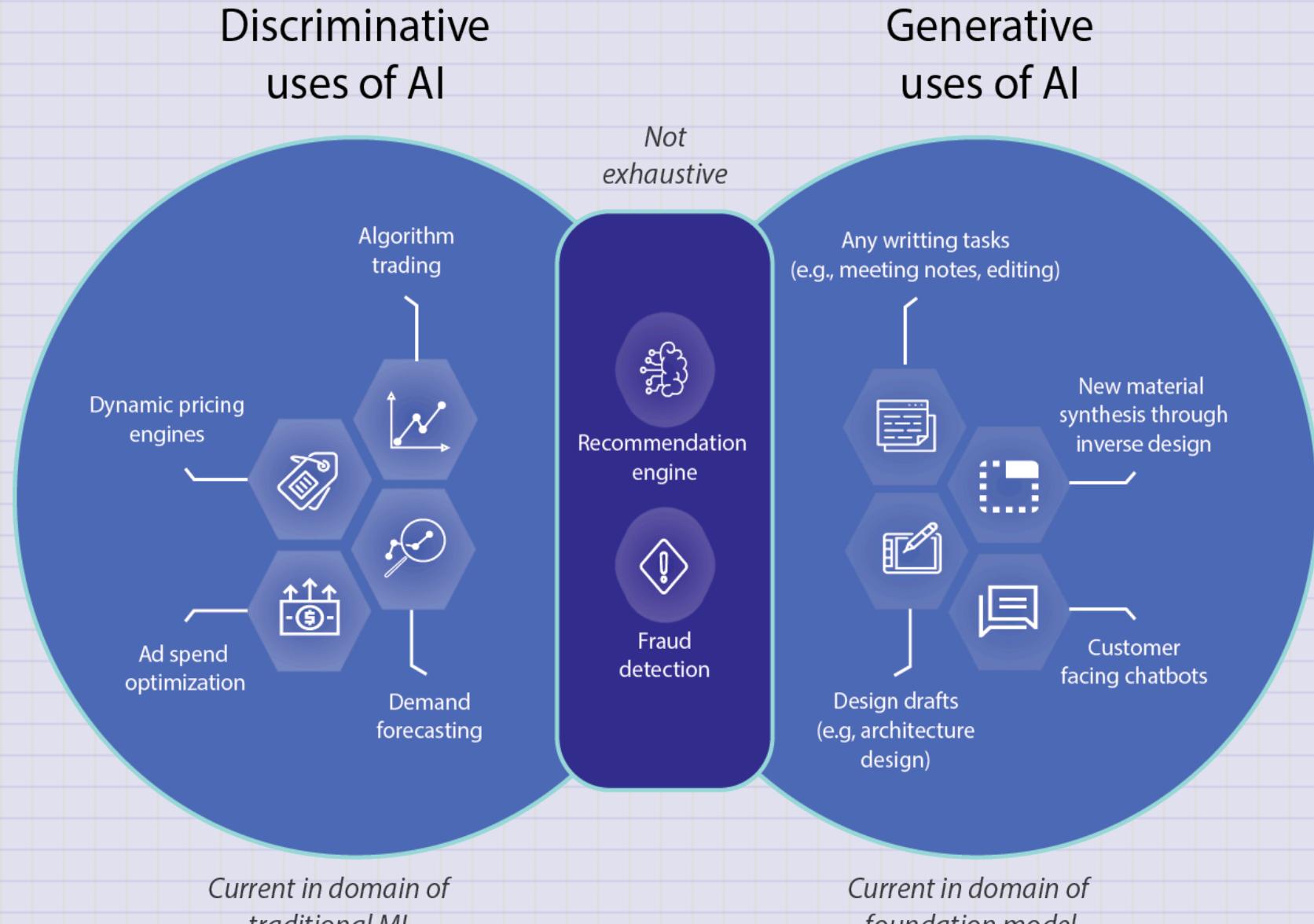
## 兩類預測模型

- 回歸：  
預測數值
- 分類：  
預測類別



## 兩類 AI

- 分辨類：  
預測數值或  
類別
- 生成類：  
產生內容



## 學習 4B

01Basics

02Badges

03Bootstrapping

04Blogging

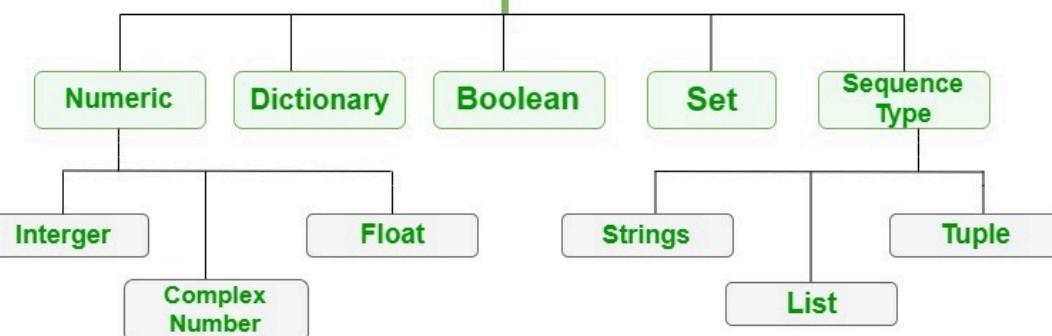
## 利用geeksforgeeks 一步一步練基本功

### 01Basics

# GeeksforGeeks

A computer science portal for geeks

#### Python - Data Types



## 利用cognitiveclass.ai 獲取技術證照

### 02Badges



# 利用GitHub 借力使力開發應用程式

# 03 Bootstrapping

- AI 模型輔助語言學習  
APP >>

## 英文系學生的跨領域探索



The screenshot shows the Streamlit 'Welcome' app. At the top right, there are sharing options: Share, Rerun (with a 'R' icon), Settings, Print, Record a screencast, View all apps, About, Developer options, and Clear cache (with a 'C' icon). A mouse cursor is hovering over the 'More' menu icon at the top right.

# Welcome to Streamlit!

Edit `/streamlit_app.py` to customize this app to your heart's desire ❤️

If you have any questions, checkout our [documentation](#) and [community forums](#).

In the meantime, below is an example of what you can do with just a few lines of code:

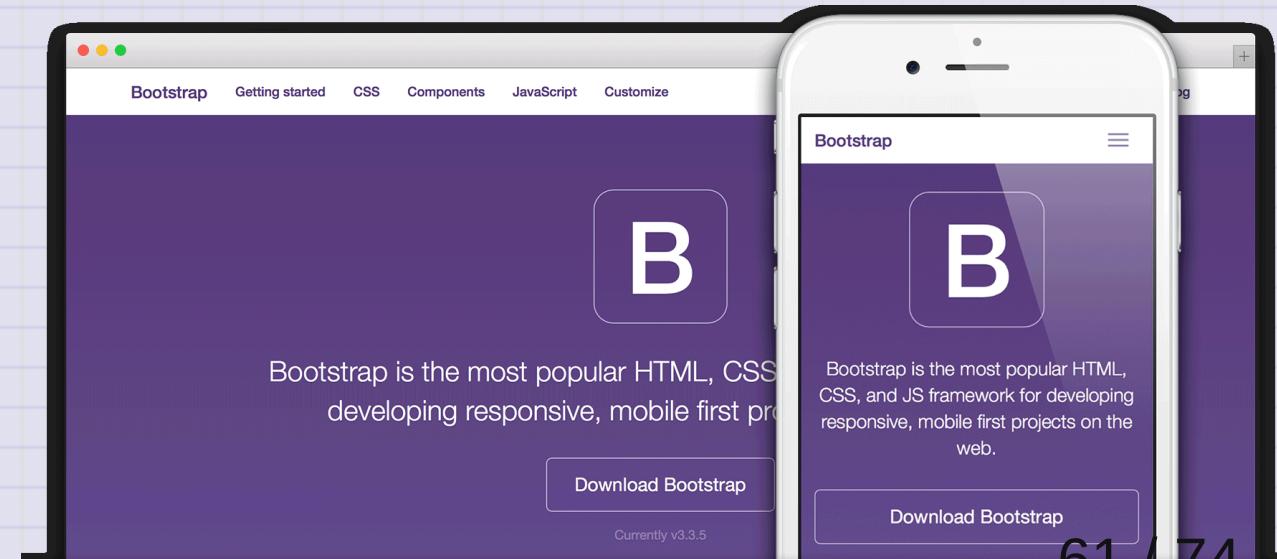
Number of points in spiral

Number of turns in spiral

A scatter plot showing a spiral pattern of blue dots on a grid, generated based on the slider inputs.

# 利用GitHub Pages 撰寫部落格文章分享所學

## 04Blogging



# 學位的 投資報酬率 (ROI)

source >>

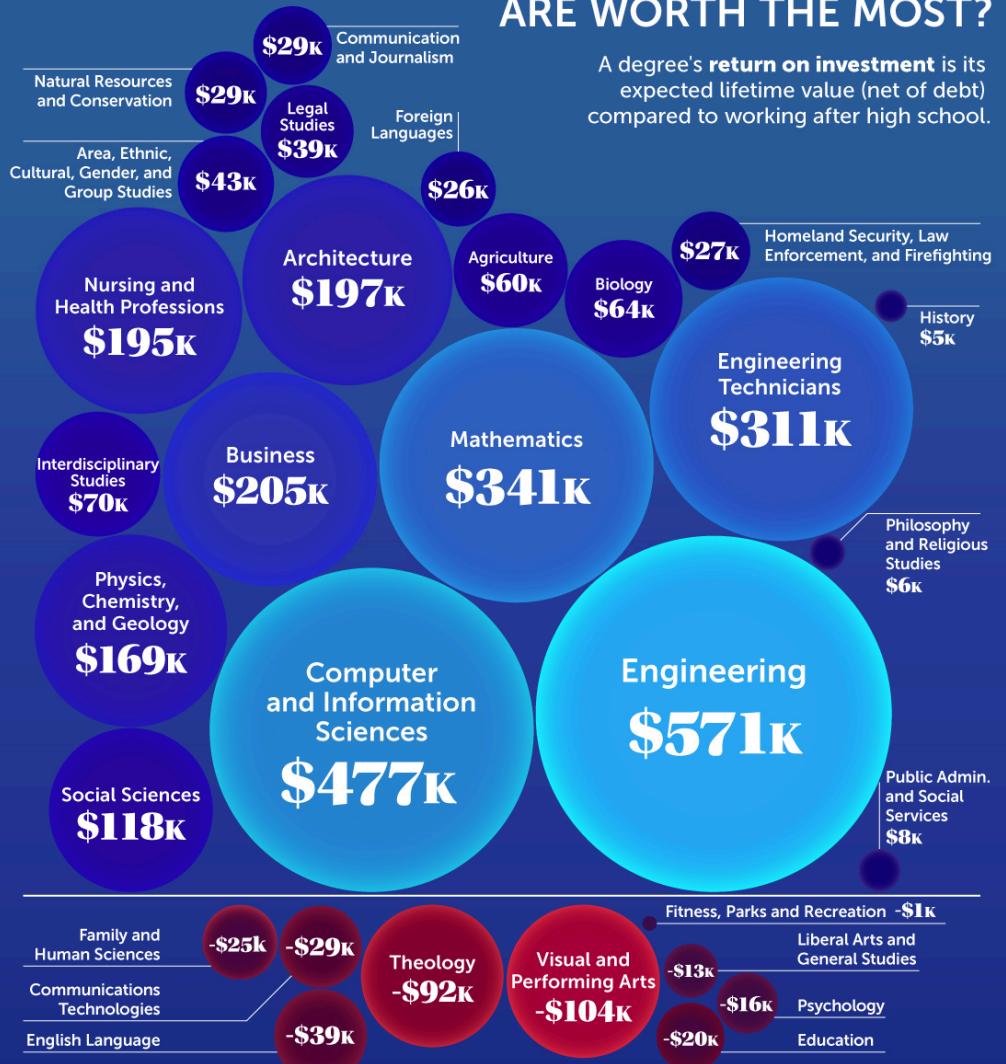
英文系學生的跨領域探索

# Which Degrees



## ARE WORTH THE MOST?

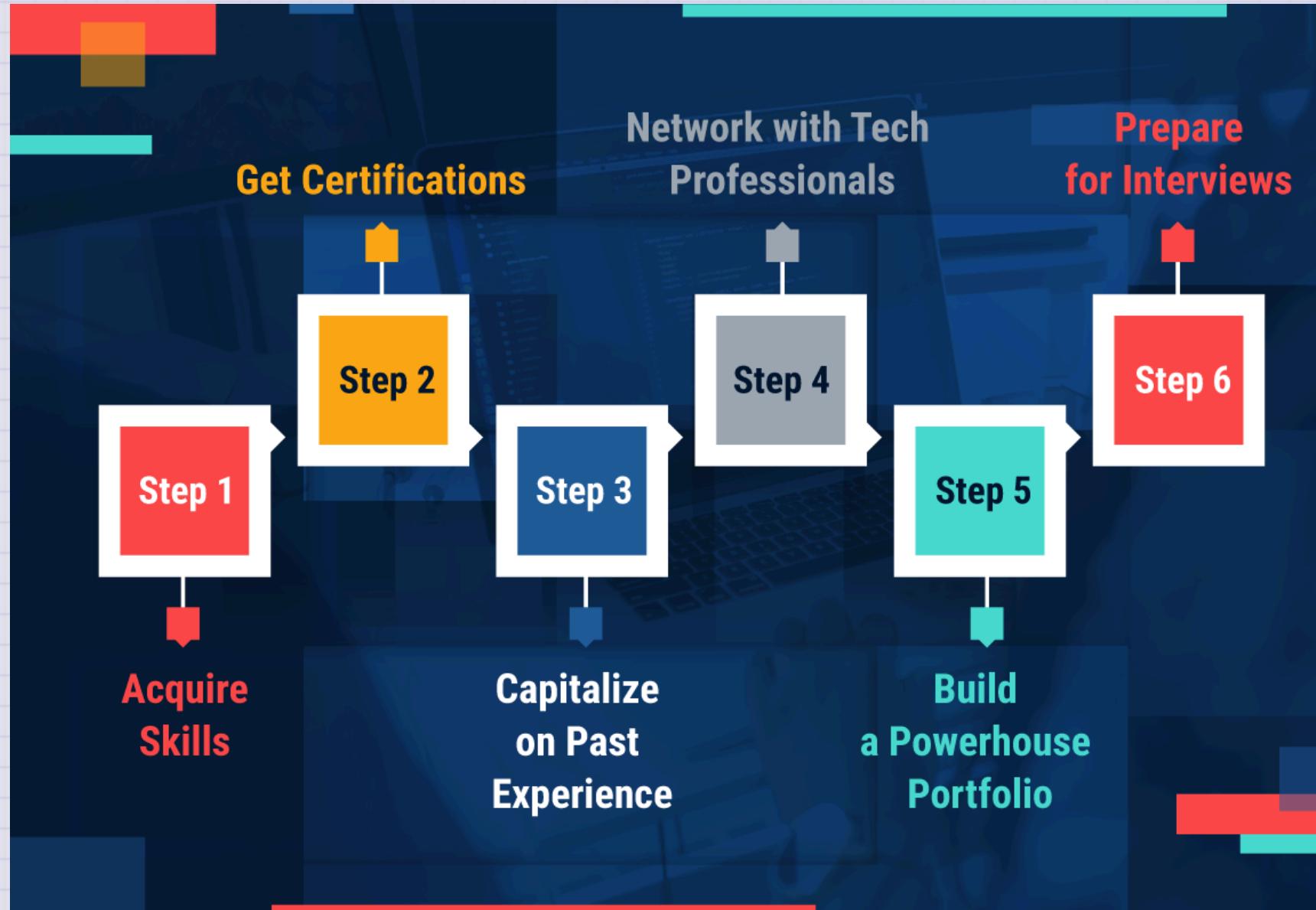
A degree's **return on investment** is its expected lifetime value (net of debt) compared to working after high school.



Source: CollegeNPV

# 進入科技業 的步驟

source >>

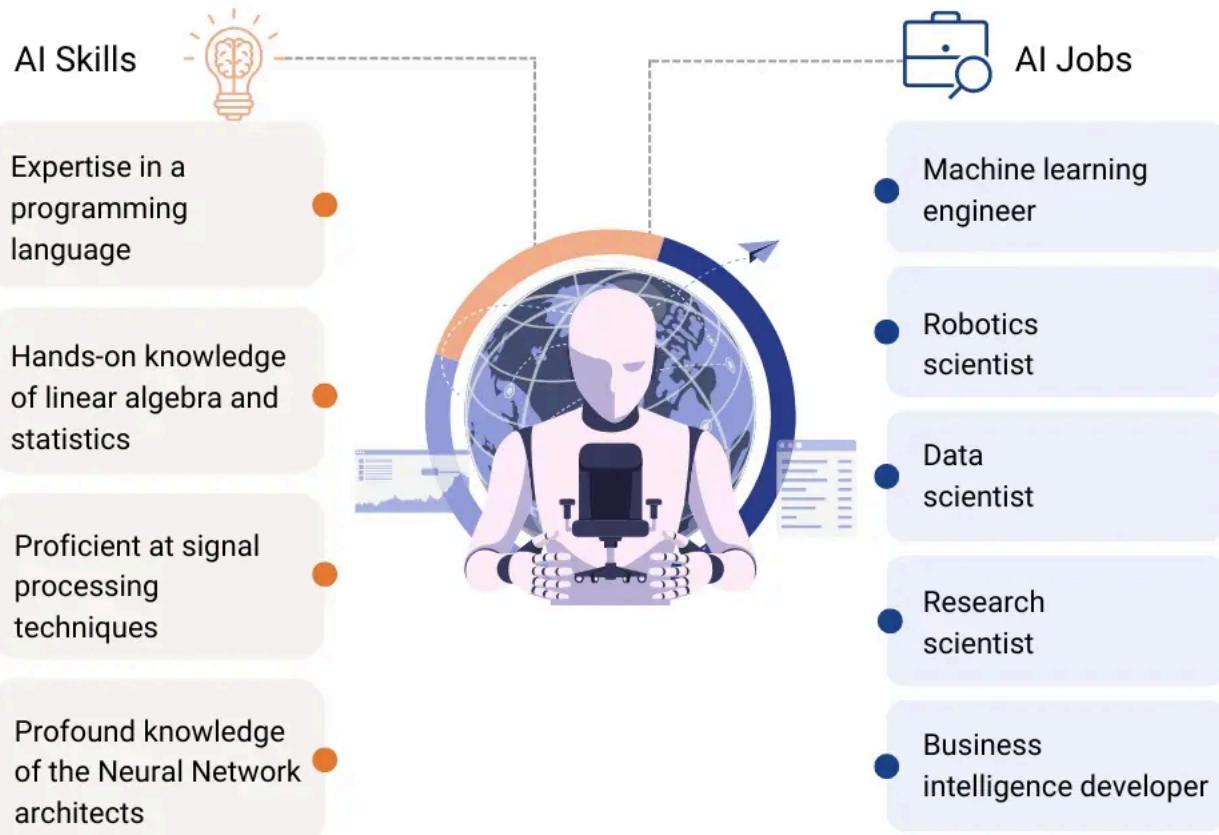


# AI 相關 技能與職位

source >>

## Looking for AI jobs?

Well here are our top 5 AI jobs  
along with all the skills needed to land them



## 2024 年 10 大 AI 職位

[source >>](#)

# 10 Highest-Paying AI Jobs in 2024

01

Machine Learning (ML) Engineer  
design, build, and deploy machine learning (ML) models

03

Natural Language Processing (NLP) Engineer  
Specialize in building ML models to understand and process human language

05

Data Scientist  
Extract insights from data to solve problems and inform decisions

07

AI Research Scientist  
Explore new methods to make AI systems more intelligent and capable

09

Software Engineer  
Turn AI models and algorithms into real-world software applications

02

AI Product Manager  
Translate cutting-edge AI technology into real-world solutions

04

Big Data Engineer  
Design and implement data pipelines, ensuring data security and integrity

06

Computer Vision Engineer  
Build systems that enable computers to "see" and interpret visual data

08

Business Development Manager (BDM)  
Finds new clients and grows business for AI companies

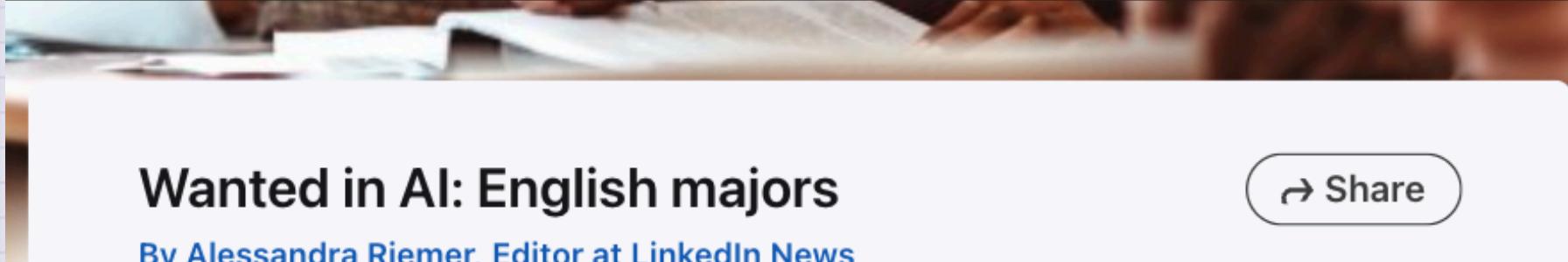
10

Prompt Engineer  
Craft instructions to unlock the potential of large language models

其實科技業  
很需要你！

source >>

linkedin.com/news/story/wanted-in-ai-english-majors-5867420/



## Wanted in AI: English majors

By Alessandra Riemer, Editor at LinkedIn News

Updated 9 months ago •

Landing a job in tech is **no longer just a coder's world**. Tech companies are now on the lookout for those with liberal arts backgrounds — including literature and philosophy degrees — who can help bolster language and creative thinking in AI models, **Fortune reports**. In fact, IBM's AI Chief Matt Candy is betting on the demand for "right-brainers" as the need for "questioning, creativity skills, and innovation" rises. Among the roles to be on the lookout for? Prompt engineers, who require less IT skills and can train models for human behavior.

Share ↗

其實你已經  
掌握了最強  
的程式語言

[source >>](#)

santiagof.medium.com/english-is-the-most-powerful-programming-language-even-for-data-s... ☆



★ Member-only story

# English is the most powerful programming language — even for data science: Introduction to prompt engineering

What prompt engineering is, which are the steps involved in it, and how it changes the way we solve problems with ML.



Facundo Santiago · [Follow](#)

10 min read · May 9, 2023

9 歲小孩可以  
你也可以！

source >>



# 其實你已經掌握了多數的軟硬技能

[source >>](#)

The infographic is divided into two main sections: 'Hard Skills' on the left and 'Soft Skills' on the right. Both sections have a teal header bar at the top. The 'Hard Skills' section has a teal background and includes five items: Foreign language skills (with a speech bubbles icon), Coding ability (with a keyboard icon), Technical understanding of SEO (with a magnifying glass over a chart icon), Photoshop knowledge (with a Photoshop icon), and Writing proficiency (with a writing icon). The 'Soft Skills' section has an orange background and includes six items: Empathy (with a couple icon), Communication (with a speech bubble icon), Leadership (with a person in front of a group icon), Willingness to learn (with a stack of books icon), and Time management (with a person at a laptop icon). A teal cloud shape is on the right side.

## Hard Skills

specific, technical abilities required to do a job, typically acquired through education and experience

- Foreign language skills
- Coding ability
- Technical understanding of SEO
- Photoshop knowledge
- Writing proficiency

## Soft Skills

a combination of people skills, social skills, communication skills, emotional intelligence, and personality traits

- Empathy
- Communication
- Leadership
- Willingness to learn
- Time management

You're a  
bridge!

source >>

## How Humanities Bridges the Gap Between *People and Technology*

### Pinpoint consumer wants and expectations

*Relevant job roles:*  
Market analyst, business analyst

### Identify areas of improvement

*Relevant job roles:*  
Consultant, department manager

### Improve user experience

*Relevant job roles:*  
User experience designer,  
information architect

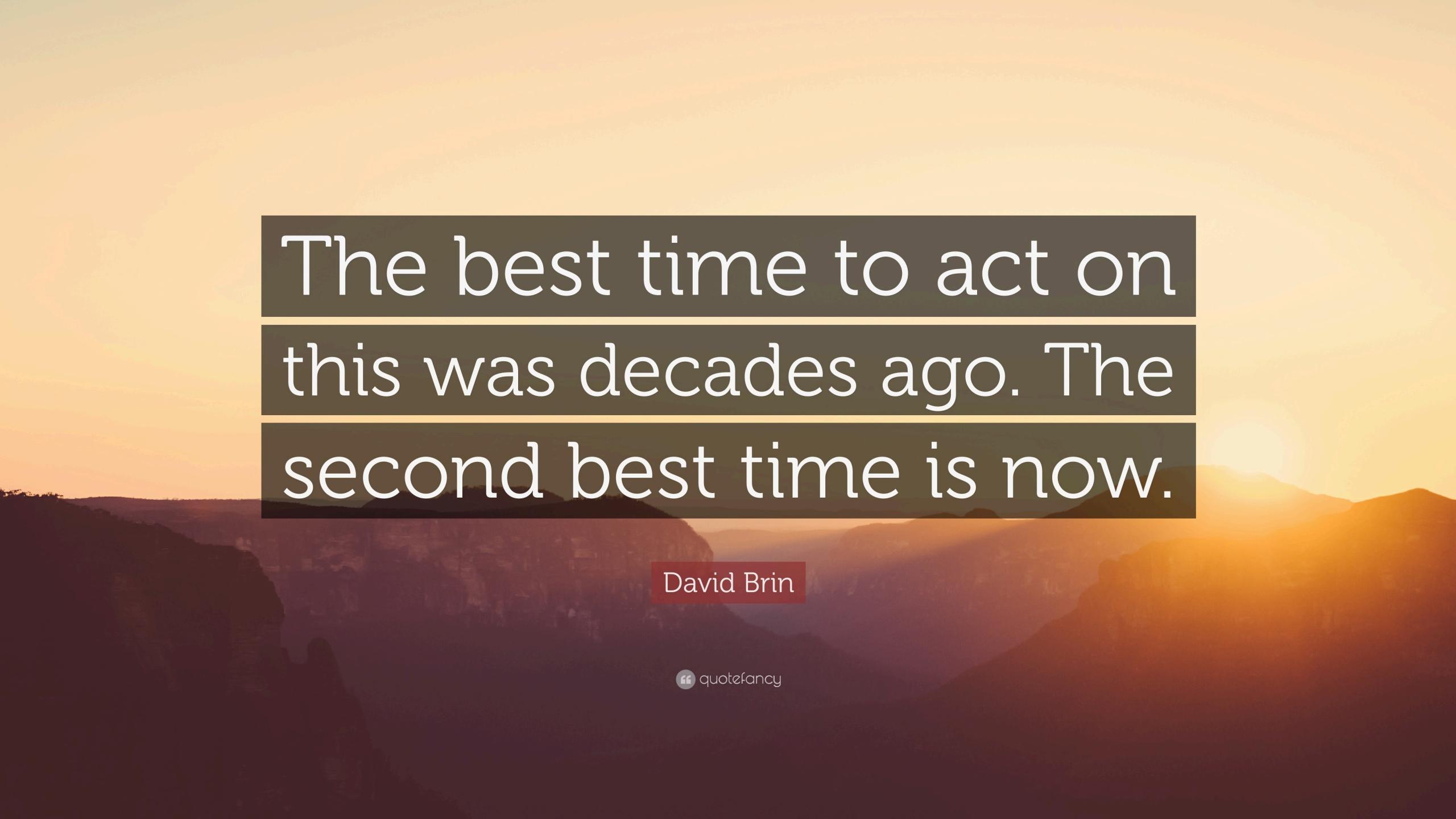
### Analyse consumer feedback to adapt products to future needs

*Relevant job roles:*  
Consumer analyst,  
consumer insights specialist

## 結語：有產出的學習更有說服力

- 獲取技術證照
- 撰寫部落格文章
- 開發應用程式





The best time to act on  
this was decades ago. The  
second best time is now.

David Brin

問答時間？

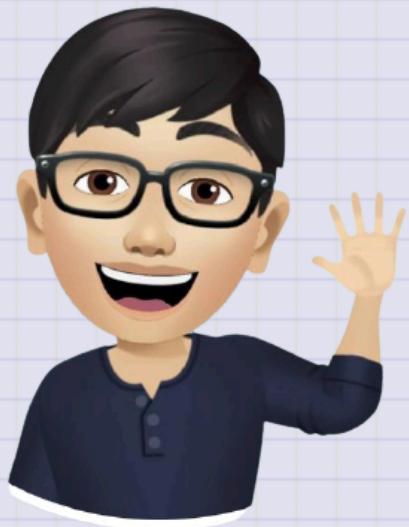


WHAT IF I TOLD YOU

I'M ALLERGIC TO QUESTIONS

MEMEFUL.COM

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**howard.haowen@gmail.com**
- 網站:  
**<https://howard-haowen.github.io>**