



Master in Planning and
Management of Tourism Systems



Artificial Intelligence & Tourism

Nicola Cortesi



MOODLE OF THE COURSE

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⋮

▼ Introduzione

Communications

▼ Course materials

README

Podcast of the first lesson: co...

Podcast of the first lesson: de...

Slides Lesson 1 - ITs for Touri...

Project Works: Groups

Project Work #1: Dolomites fo...

Project Work #1: Alps for Beg...

Lesson 2 - Identity Definition

Video: TED Talk of Simon Sin...

Community Canvas Guidebook

Time Travelers (Spreadsheet)

Time Travelers ENG (TikTok)

Time Travelers ITA (TikTok)

Time Travelers (YouTube)

Time Travelers (Instagram)

IT for Tourism Services a.a. 2025-26

- Corso
- Impostazioni
- Partecipanti
- Valutazioni
- Report
- Altro ▼

▼

Introduzione

Teacher: Nicola Cortesi

Course code: 44159-ENG

💬

Communications

▼

Course materials

📄

README

🎧

Podcast of the first lesson: course intro

🎧

Podcast of the first lesson: description of the first project work

📄

Slides Lesson 1 - ITs for Tourism Services

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Welcome!

www.unibg.it

Podcast of the intro of the course
with the voice of Morgan Freeman

Podcast of the intro of
the first project work

Slides (uploaded each week)



INTRO

Computer science is shifting from classic programming to **Natural Language Processing (NLP)**, aka human language, to interact with machines

INTRO

In the next years we will witness the transition from a human-based culture to a non-human culture created by generative AI

GENERATIVE AI

Generative AI is a branch of AI focused on creating **new data or content**, such as text, images, audio, video or code, based on patterns it has learned from existing data

BEST SKILL

It's not the smartest people, but the people who **connect most** to other people that are going to have jobs in the future

The best skill to develop is **your humanity**, not your technical skills

BEST SKILL

This is by far the **most important skill** you need in the future. It is an **old skill** we had forgotten.

AI REVOLUTION

Every new information technology initially **destabilize** society, but in the long term it is **integrated** and its negative effects are minimized.

AI REVOLUTION

AI will change our society more than any previous technology, so expect a **period of instability**, in which society will go on a roller coaster

NOW
HIRING

AI JOB CRISIS

Not only jobs will disappear, but also whole businesses and market segments.

AI AGENTS

At present, AI is employed mainly as an **assistant**.

Soon **AI Agents** will automate most of the tasks that can be performed in front of a **screen**.

AI AGENTS

Soon you will be able to
tell to an AI Agent to
choose an online job and
earn a million euros

A NEW SOCIETY

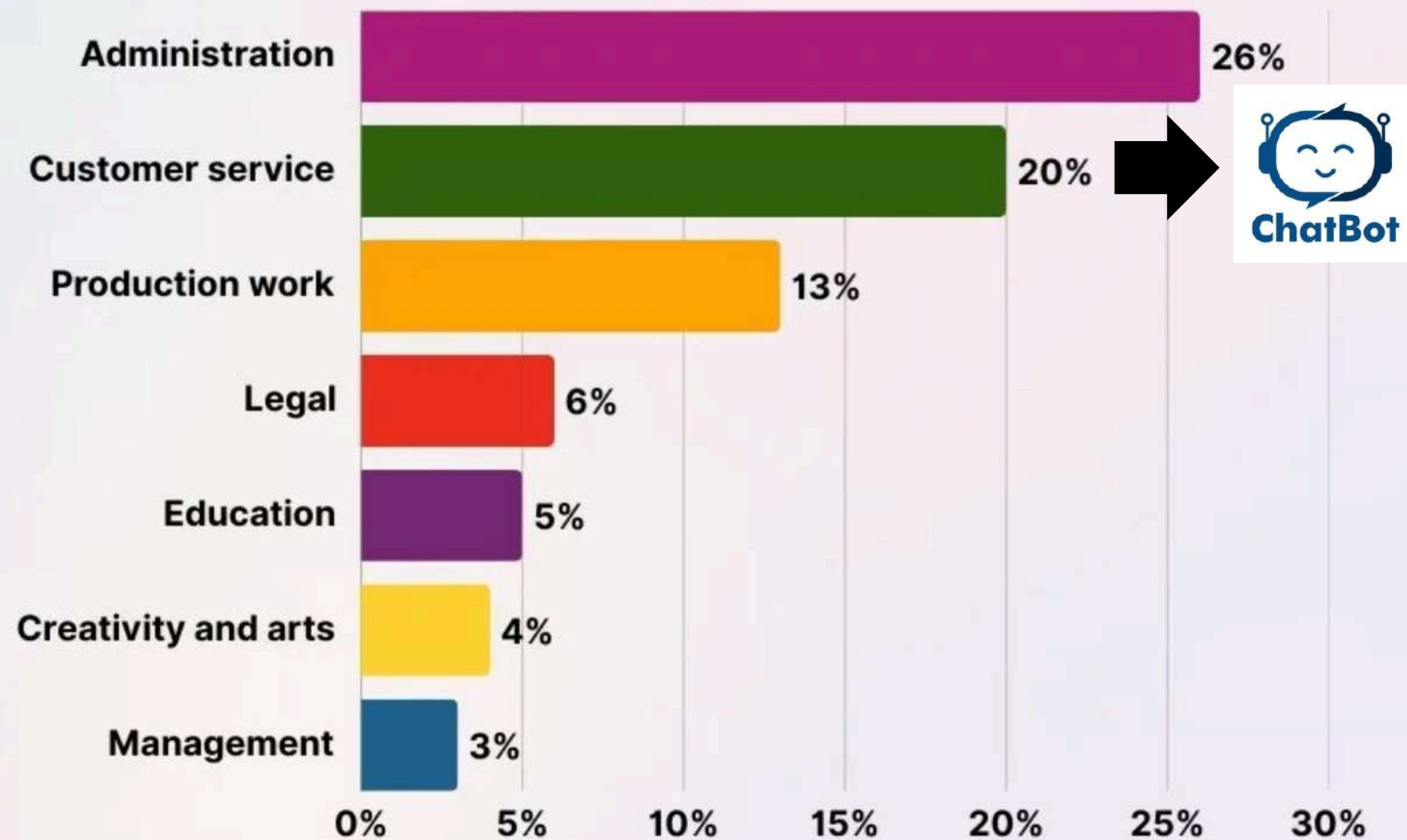
Thanks to AI we are shifting from a society based on money and work to a society based on data and information as the main power source

THE KNOWLEDGE PYRAMID



AI JOB CRISIS

AI JOB REPLACEMENT RISK BY SECTOR



Source: SQ Magazine

AI is decreasing the jobs in:

- Administration
- Customer Service
- Manufacturing

Luckily, the Tourism sector is not so much directly affected, as human relationships are quite important

JOBS AT RISK IN THE TOURISM SECTOR

Automated booking systems and self-service kiosks already reduced the need for **ticketing staff**, even before the advent of AI

Example: Airport kiosks, train stations, and museums increasingly rely on automated ticketing

JOBS AT RISK IN THE TOURISM SECTOR

Travel Agents will not entirely disappear, but specialize in niches where feelings and sensations are important:

- Adventure travels
- Honeymoons
- Accessible travels
- Wellness retreats
- Safaris
- Luxury travels
- Travels for elderly people

JOBS AT RISK IN THE TOURISM SECTOR

Many passenger's questions are predictable: "Where is my seat?" or "When will we arrive?"

AI-powered chatbots, apps and digital kiosks will handle these queries instantly. So, there will be less **passenger attendants**

JOBS AT RISK IN THE TOURISM SECTOR

Customer Service of airlines and hotels will use AI chatbots 24/7 for customer support (e.g: Lufthansa, Hilton).

AI-driven chatbots, voice assistants and automated help desks can now answer common questions, handle complaints, and even process refunds or changes.

JOBS AT RISK IN THE TOURISM SECTOR

AI apps and AI earbuds will likely replace a big portion of **basic interpreters** (guided tours, basic assistance)

Specialized interpreting (law, medicine, diplomacy) instead is safer, as any error can have serious consequences, though AI will still be useful as a strong assistant

JOBS AT RISK IN THE TOURISM SECTOR

AR/VR experiences and LLM-powered audio guides using ChatGPT voice from mobile can replace many **basic Tour Guides**, especially to visit museums and common landmarks

JOBS AT RISK IN THE TOURISM SECTOR

Some hotels will reduce the human staff. In China, many hotels below the four stars are already fully automated.

In future, hotels may split in two categories: traditional ones and cheaper AI-hotels

Many apartments for rent already have a humanless check-in, even without using AI



JOBS AT RISK IN THE TOURISM SECTOR

Travel bloggers will decrease, as Google Searches moved to the new “AI Overview” model (“AI Mode” in USA).

This lead to a significant drop in number of clicks on standard Google searches, impacting the user traffic in many websites and blogs (CNN lost 30% of traffic)

JOBS NOT AT RISK

Adventure & Outdoor Activity Guide requires in-person leadership, safety management, spontaneity, and encouragement under physically demanding conditions. AI can't lead a rock-climbing trip or reassure a nervous diver

JOBS NOT AT RISK

Data Analysts for the tourism sector. They study tourism fluxes during the year and understand how they are going to change in the next season, for each market segment (families, young people, old people, rich people, foreign people, etc).

They also identify where it is better to open a new hotel and which are the best strategies to reduce overtourism at a target destination

NEW JOBS CREATED BY AI

Travelers want to explore places before booking or enhance visits with digital storytelling.

The **VR & AR Travel Content Creator** creates immersive digital experiences, such as a VR preview of a safari, a virtual tour of UNESCO sites, or AR overlays in historical towns

NEW JOBS CREATED BY AI

AI Trainers teach AI systems how to handle travel-related questions, resolve complaints, and speak in brand-appropriate tones. AI trainers also checking AI-generated text, images, or videos for errors, bias, or inappropriate content.

Example: training a hotel's virtual assistant to answer questions related to local attractions and activities

NEW JOBS CREATED BY AI

The **Automation Specialist** does not work with code anymore by directly with AI tools, learning how to connect different AI tools (e.g: Zapier + ChatGPT) to automate repetitive office tasks.

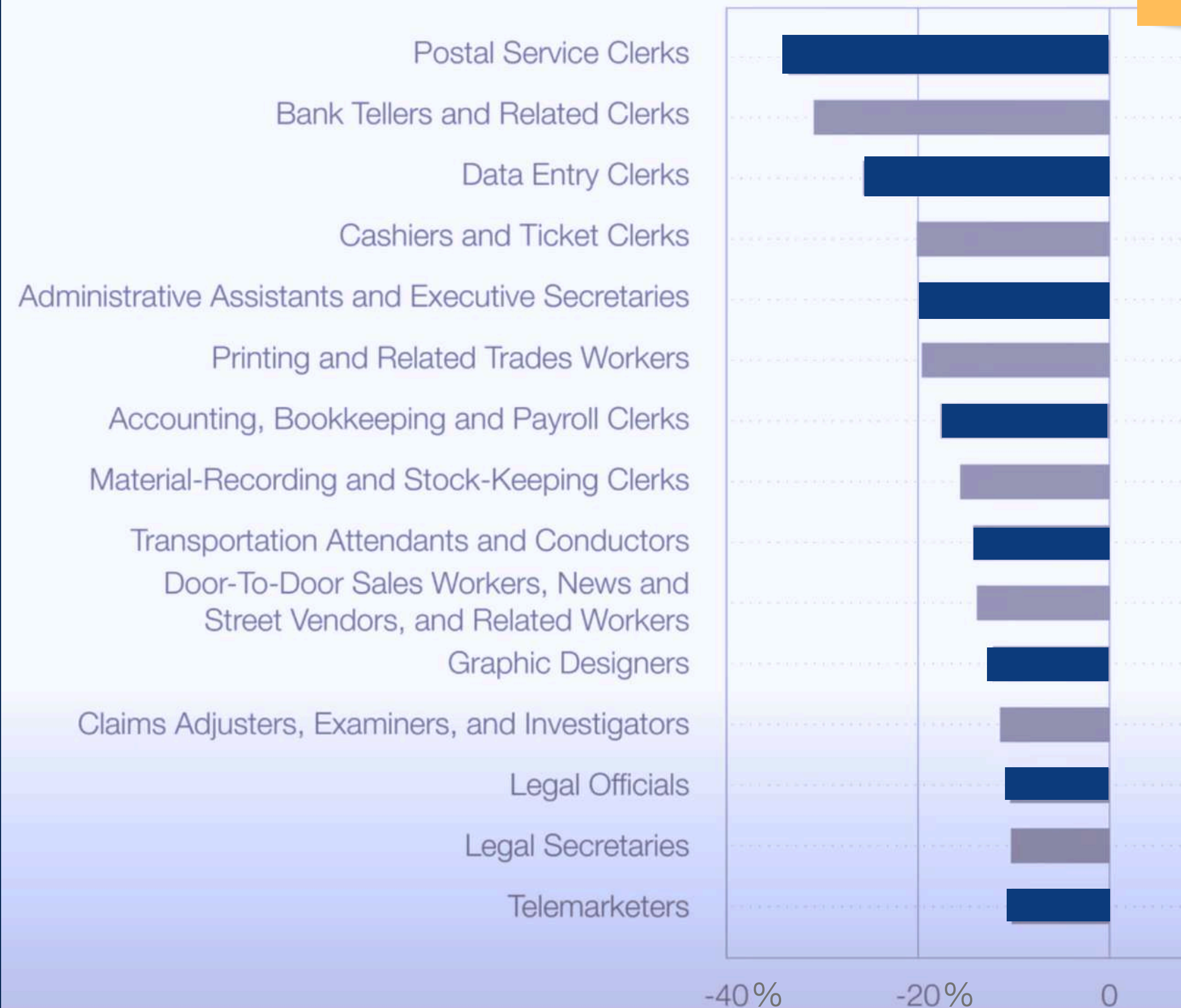
NEW JOBS CREATED BY AI

AI Orchestrators supervise the activity of a team of AI Agents, coordinating their activities as the director of an orchestra

Example: OTA and large hotel chains will employ thousands of AI Agents to automate back-office operations.

Problem: this is not a junior job

Top fastest declining jobs in the next 5 years



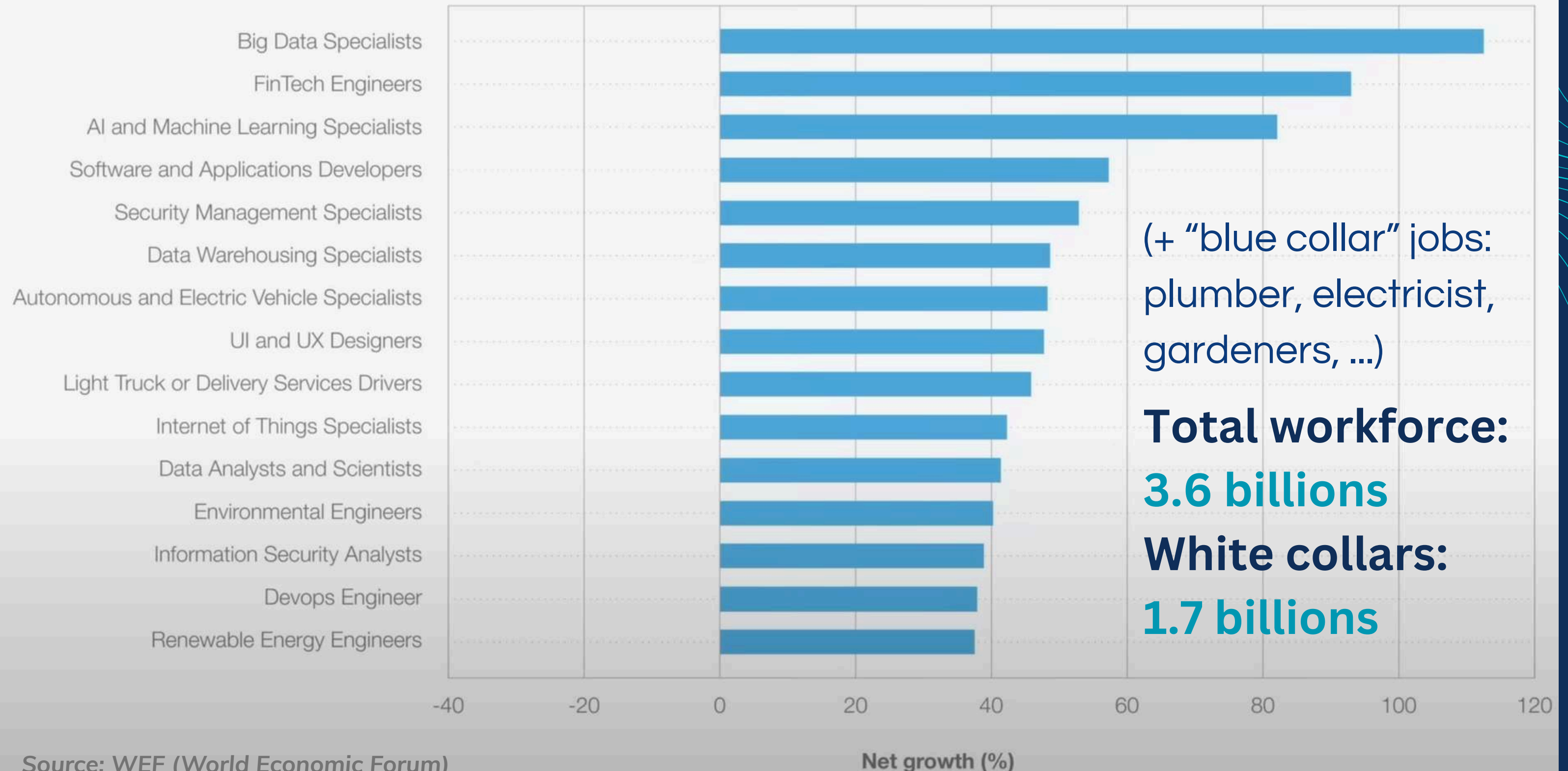
AI JOB CRISIS

AI is also decreasing the number of jobs such as:

- Secretaries
- Graphic Designers
- Telemarketers

TOP FASTEST GROWING JOBS IN THE NEXT 5 YEARS

Top fastest growing jobs in the next 5 years



(+ "blue collar" jobs:
plumber, electricist,
gardeners, ...)

Total workforce:
3.6 billions
White collars:
1.7 billions

Job Title (Abbrv.)	Coverage	Cmpltn.	Scope	Score	Employment
Interpreters and Translators	0.98	0.88	0.57	0.49	51,560
Historians	0.91	0.85	0.56	0.48	3,040
Passenger Attendants	0.80	0.88	0.62	0.47	20,190
Sales Representatives of Services	0.84	0.90	0.57	0.46	1,142,020
Writers and Authors	0.85	0.84	0.60	0.45	49,450
Customer Service Representatives	0.72	0.90	0.59	0.44	2,858,710
CNC Tool Programmers	0.90	0.87	0.53	0.44	28,030
Telephone Operators	0.80	0.86	0.57	0.42	4,600
Ticket Agents and Travel Clerks	0.71	0.90	0.56	0.41	119,270
Broadcast Announcers and Radio DJs	0.74	0.84	0.60	0.41	25,070
Brokerage Clerks	0.74	0.89	0.57	0.41	48,060
Farm and Home Management Educators	0.77	0.91	0.55	0.41	8,110
Telemarketers	0.66	0.89	0.60	0.40	81,580
Concierges	0.70	0.88	0.56	0.40	41,020
Political Scientists	0.77	0.87	0.53	0.39	5,580
News Analysts, Reporters, Journalists	0.81	0.81	0.56	0.39	45,020
Mathematicians	0.91	0.74	0.54	0.39	2,220
Technical Writers	0.83	0.82	0.54	0.38	47,970
Proofreaders and Copy Markers	0.91	0.86	0.49	0.38	5,490
Hosts and Hostesses	0.60	0.90	0.57	0.37	425,020
Editors	0.78	0.82	0.54	0.37	95,700
Business Teachers, Postsecondary	0.70	0.90	0.52	0.37	82,980
Public Relations Specialists	0.63	0.90	0.60	0.36	275,550
Demonstrators and Product Promoters	0.64	0.88	0.53	0.36	50,790
Advertising Sales Agents	0.66	0.90	0.53	0.36	108,100
New Accounts Clerks	0.72	0.87	0.51	0.36	41,180
Statistical Assistants	0.85	0.84	0.49	0.36	7,200
Counter and Rental Clerks	0.62	0.90	0.52	0.36	390,300
Data Scientists	0.77	0.86	0.51	0.36	192,710
Personal Financial Advisors	0.69	0.88	0.52	0.35	272,190
Archivists	0.66	0.88	0.49	0.35	7,150
Economics Teachers, Postsecondary	0.68	0.90	0.51	0.35	12,210
Web Developers	0.73	0.86	0.51	0.35	85,350
Management Analysts	0.68	0.90	0.54	0.35	838,140
Geographers	0.77	0.83	0.48	0.35	1,460
Models	0.64	0.89	0.53	0.35	3,090
Market Research Analysts	0.71	0.90	0.52	0.35	846,370
Public Safety Telecommunicators	0.66	0.88	0.53	0.35	97,820
Switchboard Operators	0.68	0.86	0.52	0.35	43,830
Library Science Teachers, Postsecondary	0.65	0.90	0.51	0.34	4,220

AI JOB CRISIS

Top 40 jobs that are highly overlapping with tasks performed by Generative AI (CoPilot) as shown by the high coverage in first column

Source: Microsoft study of Tomlison et al., 2025. Employment numbers in the last column refers to USA jobs

AI FACTORIES: BIG DATA CENTERS FOR TRAINING AI



Stargate \$500 billions AI factory
(West Texas) built by OpenAI & Oracle

Artificial Intelligence

MAIN AI BRANCHES



Machine learning

Neural Networks

Deep Learning

GenAI

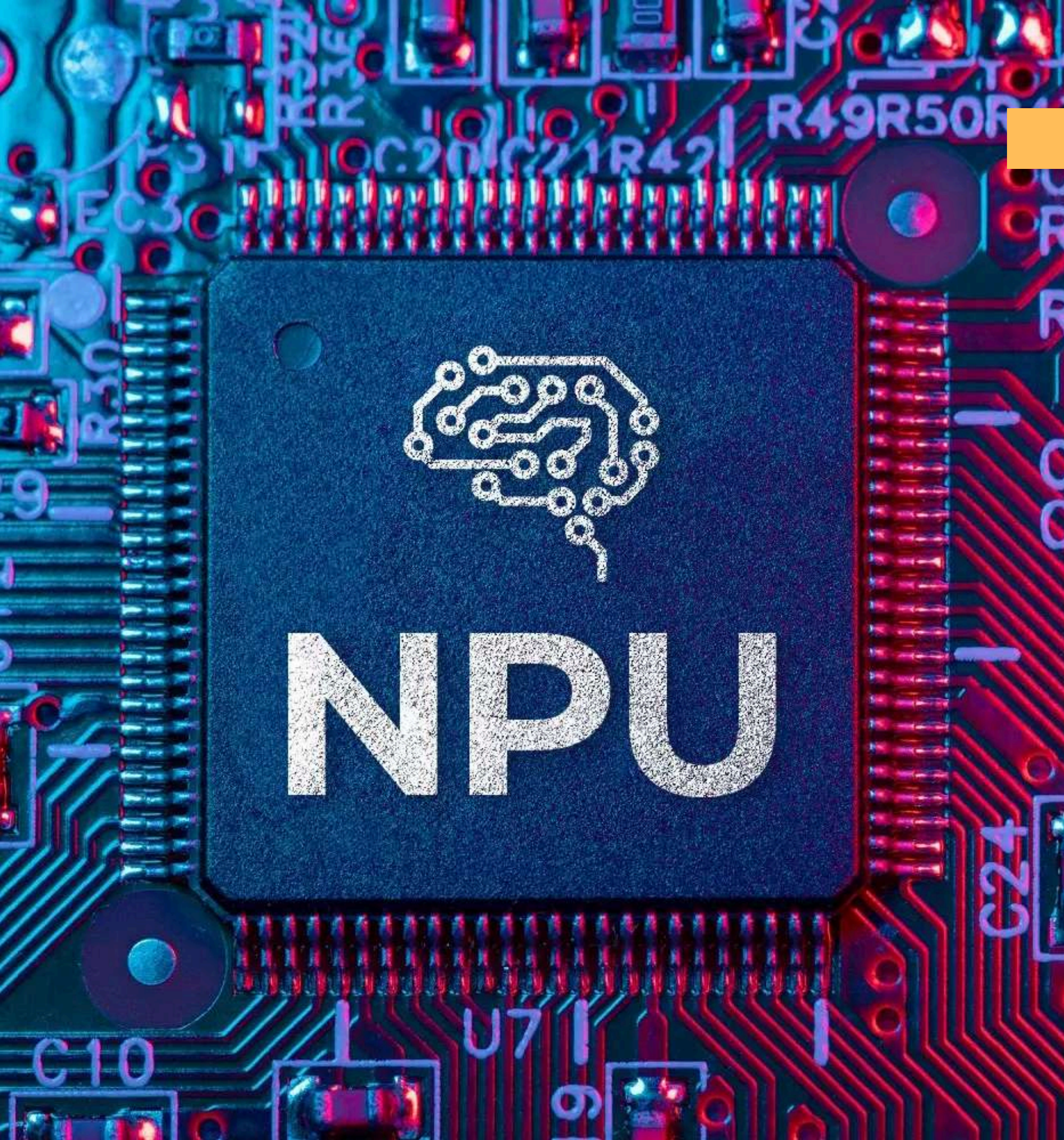
LLM

GenAI: Generative AI

LLM: Large Language Models

12 MOST POPULAR LLM IN 2025

- ChatGPT (OpenAI): latest version 5 also has image manipulation
- CoPilot (Microsoft): integrated in Windows 11 and MS Suite
- Gemini (Google): e.g: NotebookLM with its podcast tool
- Perplexity AI (Perplexity Labs): e.g: Deep Research tool
- Mixtral (Mistral AI): European LLM. Open source
- Grok (X.AI): integrated on X/Twitter. Informal, sarcastic AI
- Claude (Anthropic): focused on security and ethics
- LLama (Meta): open source
- DeepL (DeepL): best tool for translations in 30 languages
- DeepSeek (DeepSeek AI): Chinese LLM. Cheap and fast
- Qwen AI (Alibaba Cloud): Chinese LLM; e.g: GeoGPT
- Apple Intelligence (Apple): the first NPU integrated in Mac/iPhones



NEURAL PROC.UNIT

Laptops and smartphones will soon include a **Neural Processing Unit (NPU)**, that is a Graphical Processor Unit (GPU) configured to run a LLM locally

5 MAIN LARGE LANGUAGE MODELS (LLM)



OpenAI:
ChatGPT



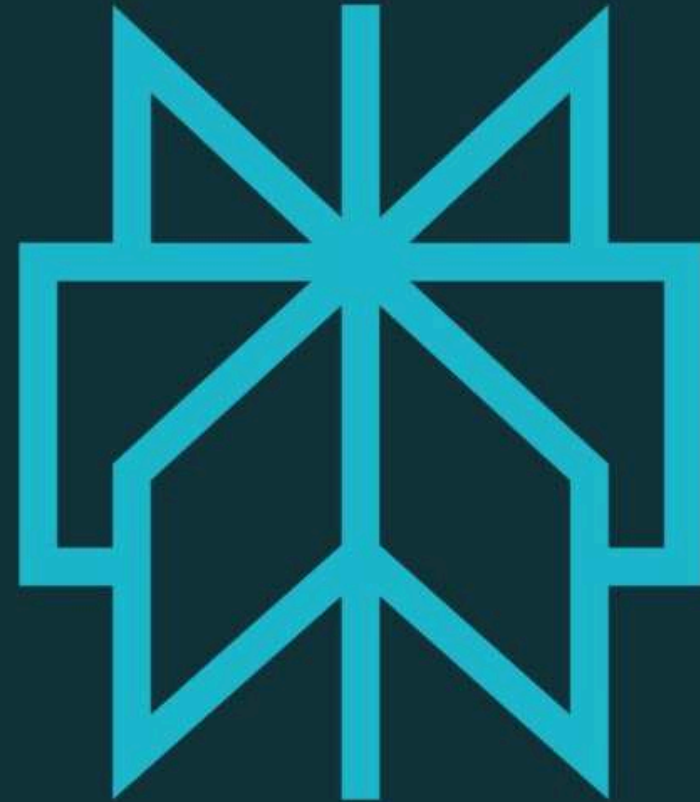
Versatile

Google:
Gemini



Scientific

Perplexity AI:
Perplexity



Honest

Anthropic:
Claude



Smart & Safe

DeepSeek:
DeepSeek



Cheap

MAIN LIMITATION OF GENERATIVE AI

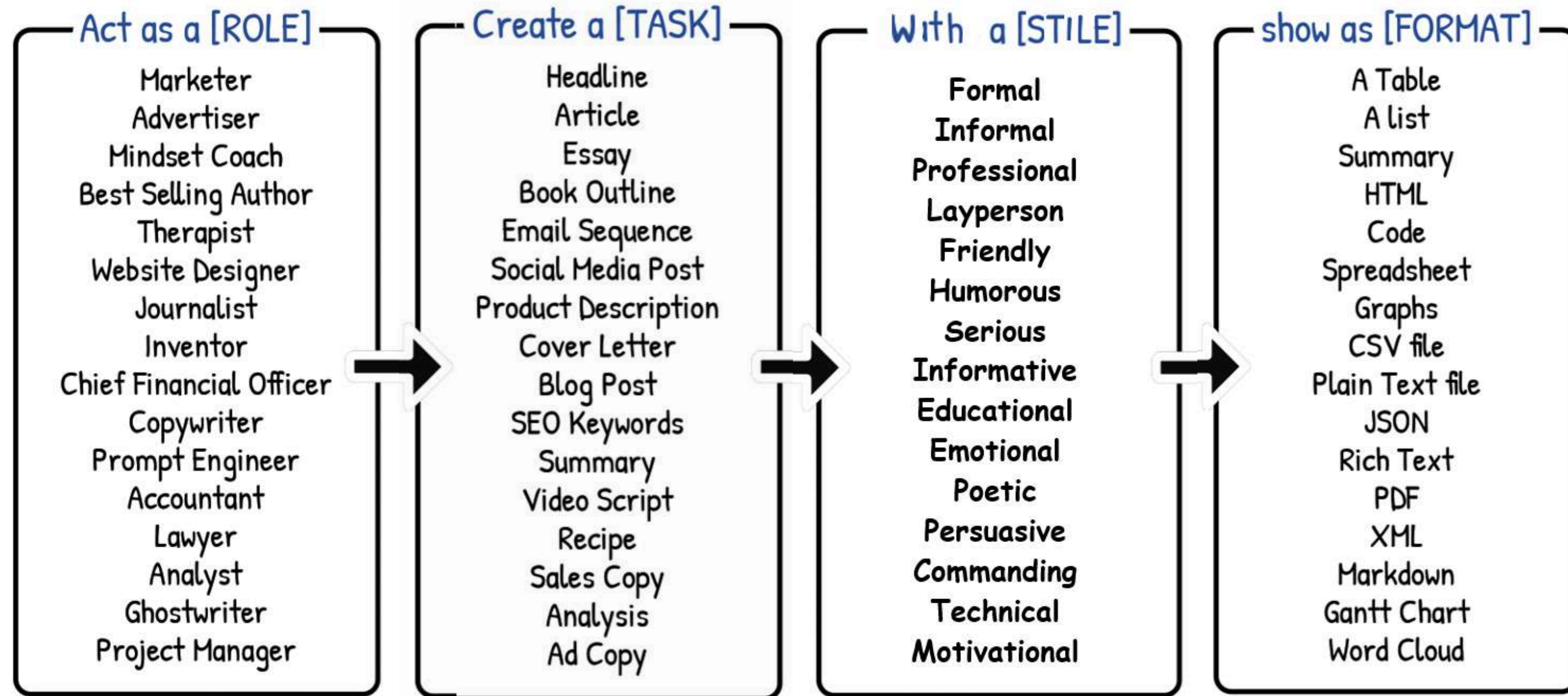
The most important limitation of AI is that

**AI cannot read your mind
to understand what you want exactly**

unless you describe it very, very well in your prompt
or write more than one prompt to improve it

Thus, errors and hallucinations are always guaranteed!

PROMPT STRUCTURE



The best prompt follows this optimal structure:

“You are a < ... >. Write a < ... > [of X words] in a < ... > way [and save it as a < ... >]”



ChatGPT PLUS

Prompt example: "You are a student of the master of PMTS. Write an email of 200 words to one of your master's professors asking in a formal way that you'd like to write your master thesis with him/her"

Now write it as a **poem** in the style of **Dante Alighieri** and starting each row with the letter "f"

Write a
to conver

Come up with concepts
for a retro-style arcade game

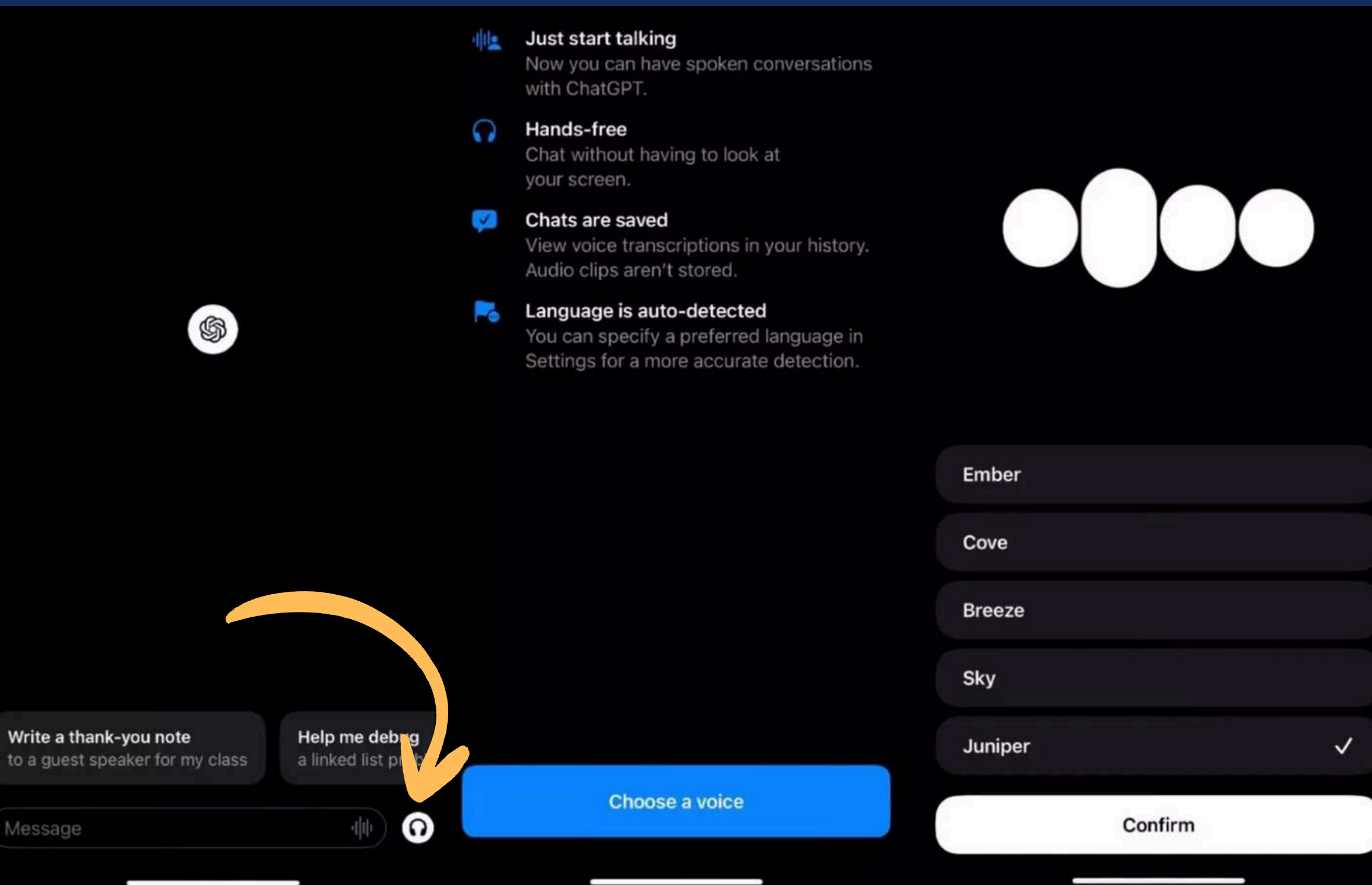
Help me study
vocabulary for a college entrance exam

+ Send a message

MAIN USES OF GENERATIVE AI:

- write the first draft of email/documents/talks/slides/abstracts/cover letters/CV/...
- gathering & reporting info with Deep Research tool
- write, debug and improve computer code in any programming language
- writing the first draft of the introduction and/or conclusions section of an article, as human creativity is usually not involved in writing them
- summarize/expanding text (e.g: fill a box of 1000 words for a project proposal)
- suggest names or titles (e.g: 20 titles for an article or a thesis or a project)
- correct grammatical errors and improve sentences, using the same expressiveness of a mothertongue and the same competence of an expert in that field
- language translation in (almost) every language (even by voice)
- answer commonly asked questions (for uncommon ones, "hallucinations" are frequent)
- generate images/video/speech/music or modify existing ones
- change the text format (e.g: create 10 tweets from an article or an Instagram post)

HOW TO SPEAK WITH A LLM WITH “VOICE MODE”



In many LLM it is now possible to insert a prompt also by speaking, and to listen to its answer instead of reading it

The free version usually has a limited number of oral prompts per day

RECOMMENDED VIDEOS AND ARTICLES ON AI

Thesis on AI & Accessibility:

<https://docs.google.com/document/d/1jJS7j-bokkNPbOKn69r4Bh8DoZaQHR8y/edit>

Microsoft article on Generative AI impact on jobs:

[Tomlinson et al., 2025. Working with AI: measuring the occupational implications of Generative AI.](#)

AlphaGo - The Movie (documentary):

<https://www.youtube.com/watch?v=WXuK6gekU1Y&t=5021s>

Mo Gawdot's best AI speeches:

<https://www.youtube.com/watch?v=HhcNrnNJY54>

<https://www.youtube.com/watch?v=NeVRtDe8EG8>

<https://www.youtube.com/watch?v=RiN33qvoDo0>

<https://www.youtube.com/watch?v=tvpzXQaL3eg>

Other AI speeches:

<https://www.youtube.com/watch?v=bYqxiqfYgCY&t=4823s>

<https://www.youtube.com/watch?v=lfid5DUoSBI>

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

FIRST PROJECT WORK



EMPLOY INFORM. TECNOL. TO REDUCE OVERTOURISM, BY OPENING AN ONLINE TRAVEL COMMUNITY



 **Dolomites for Beginners** 

<https://www.facebook.com/groups/dolomitesforbeginners>

Public group · 206.5K members



+ Invite

Share


Joined




NEW ONLINE COMMUNITY: ALPS FOR BEGINNERS



MAIN GOAL: DECREASE OVERTOURISM IN THE ALPS

 Edit

Alps for Beginners

 Public group · 13 members

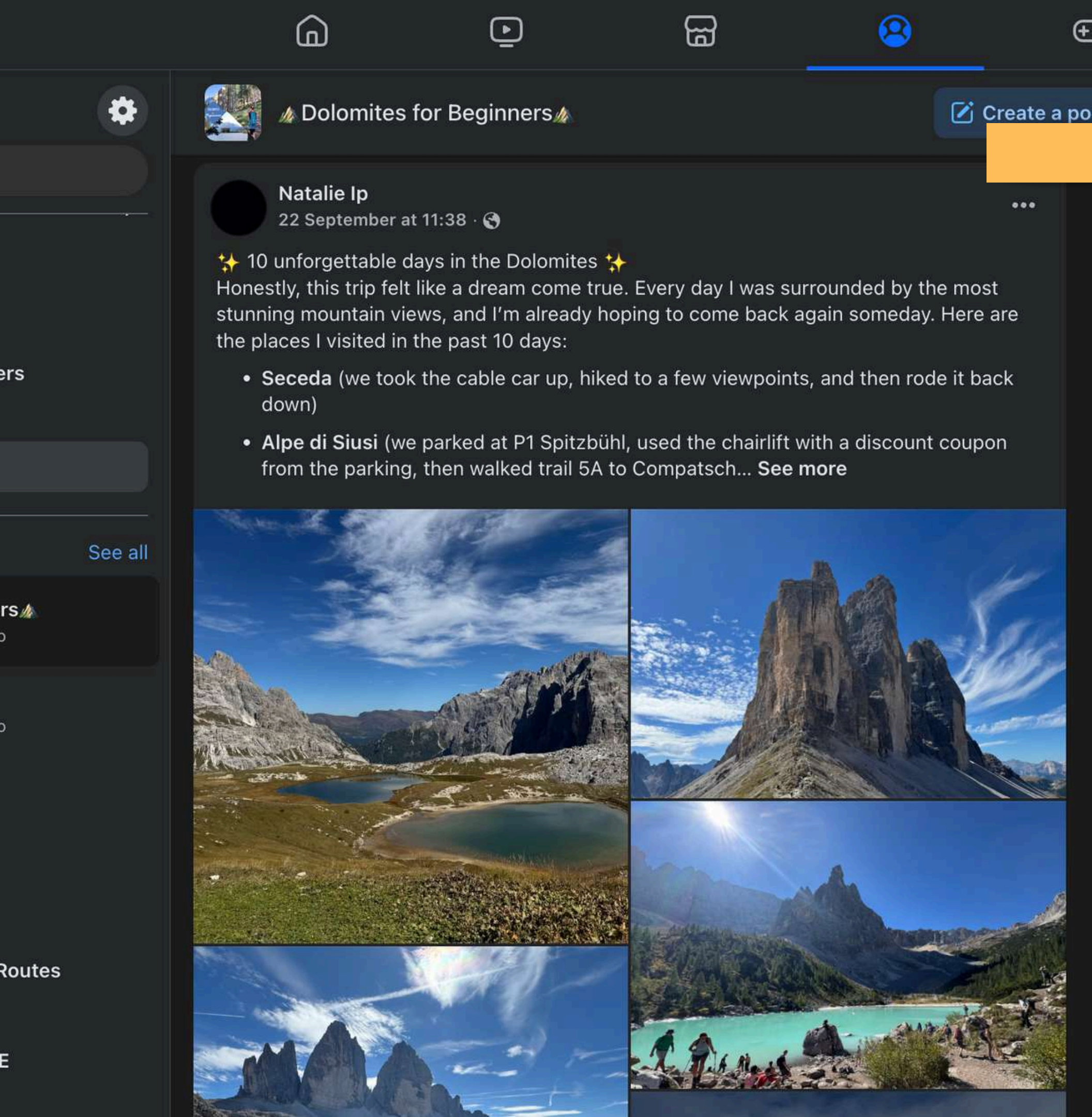


 Invite

 Share

FIRST POST


Publish **one post** in Alps for Beginners with only one image attached, **modifying an existing post** in the Dolomites for Beginners. Choose one post that has not already been published by your companions. Use **Google Gemini** to modify the image (change faces, color of the dresses, number of people, background, ...)



TASKS OF THE LAST WEEK

- Try to access the [Moodle](#) of this course once you have your UniBG username and password
- Create a [Facebook](#), [Instagram](#) and [TikTok](#) account, if you don't have one yet
- Join the fb group "[Dolomites for Beginners](#)"
- Take some pictures of the [Orobian Alps](#) as seen from the high city (e.g: from "Castello di San Vigilio" or from "Parco delle Rimembranze")
- Watch the movie "[Ready Player One](#)" for an example of Metaverse

TASKS FOR NEXT LESSON

- Install the app of [ChatGPT](#), [Gemini](#), [Perplexity](#) and [Claude](#) on your smartphone and activate [Voice Mode](#)
- Open the [Moodle](#) of the course and write down your name, surname, home country and languages you speak in the “[Project Works: Groups](#)” spreadsheet;
- Publish a new post in english in the fb group [Alps for Beginners](#), modifying an existing post in [Dolomites for Beginners](#) (choose one). Ask Gemini to modify the text and the image of the original post (choose only 1 image if the post has many);
- [Comment 3 or more posts](#) of your companions (the ones with the lowest number of comments). You can ask Gemini to suggest a comment to the post;
- Comment [1 existing comment](#) of another post of your companions;
- Then,  all the new posts published by your companions in the community.