Leveraging AI to address Career Advising Challenges

Ian Farmer   ian.farmer@uts.edu.au

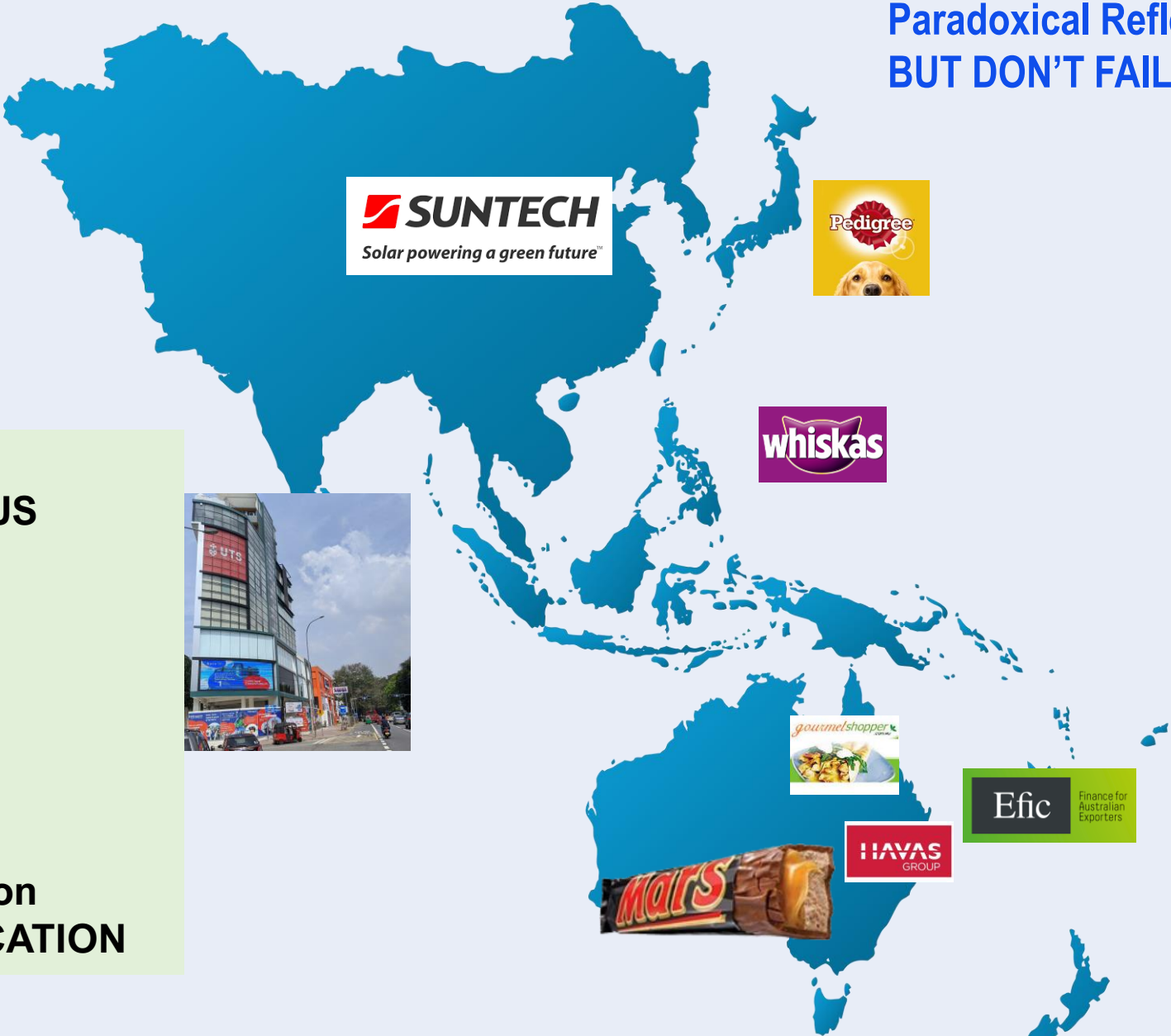Complexity

Cost & Reliability

Batch Processing

Mainframes

Paradoxical Reflection "DO FAIL TO LEARN, BUT DON'T FAIL TO LEARN"

**Information gatherer:
CULTURALLY CURIOUS**

**Making connections
TRENDSPOTTER**

**Prototype builder
EARLY ADOPTER**

**Knowledge Distribution
RESEARCH to APPLICATION**

Change Agent   "MAKING THE RIGHT THING TO DO THE EASIEST THING TO DO"

www.menti.com   8762 3822

Human report card

maintaining cognitive models of the world

inferring semantics from language

comprehending scenes **HD**

navigating 3D world

being cognitively flexible

memory is shaky

self-control is weak

compute limited

subject to confirmation bias, anchoring,
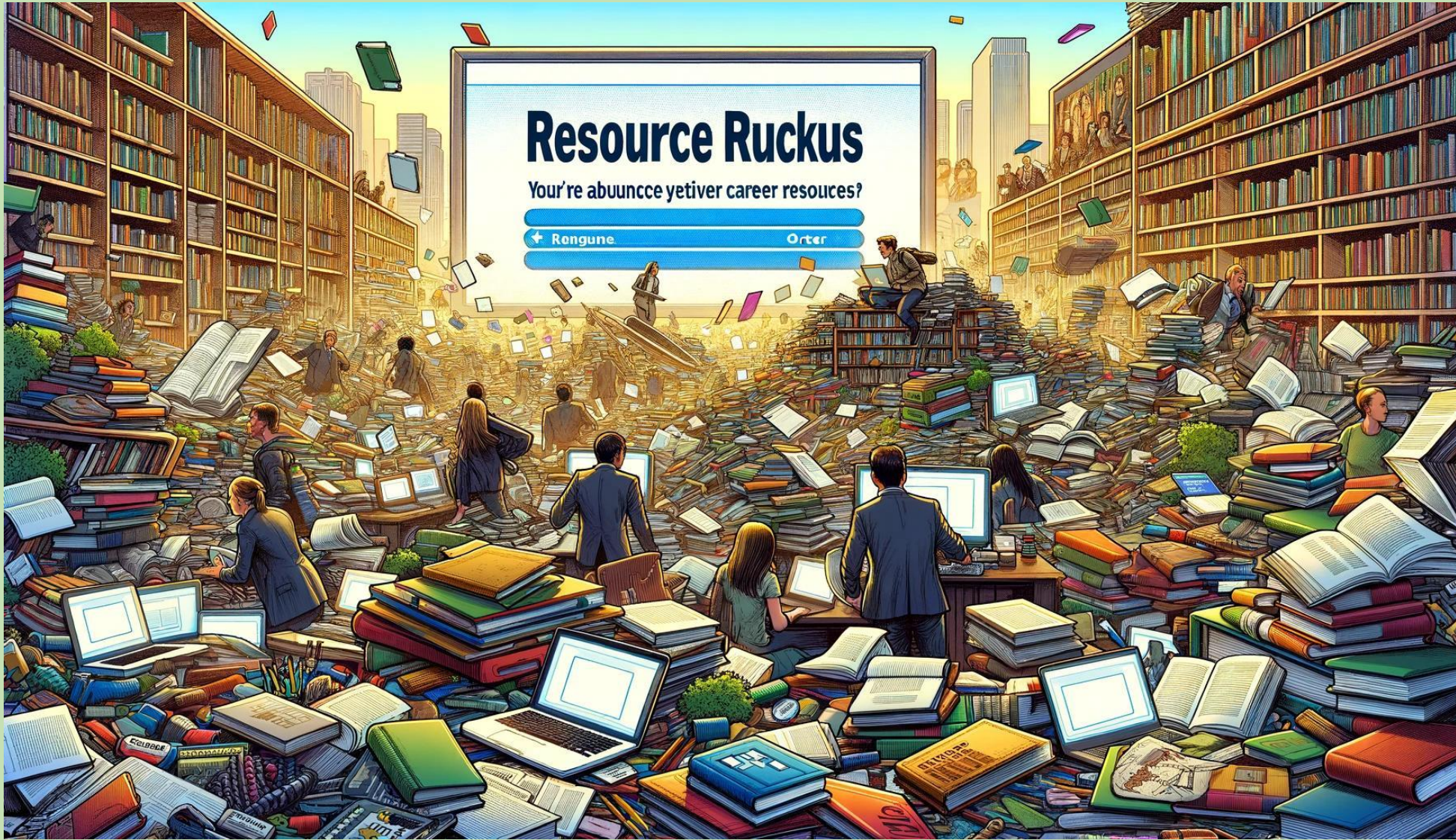
and focusing illusions **P-**

AI helps you keeping up with Job Markets

Challenge: Rapid industry changes and new roles

Are you keeping up with emerging industries?

AI helps analyse resources : Resource Ruckus

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Keeping up with Job Markets

Jobs and Skills Atlas beta

National and State   Region   Compare   About   Definitions   Caveats

This tool provides an overview of the Australian labour market at the national, state/territory and regional level. As some of the data are based on small sample sizes, the information can be volatile so use with caution. See Caveats.   dismiss

- Overview
- Labour Market
- Industries
- Occupations
- Downloads

Latest data update: 22 February 2024

Search State   ✕ clear selection

New South Wales (NSW) ⌄

Labour Market   December 2023

6.92M Population (15+)   4.42M Employment

November 2023

654,500
453,700
422,400
414,400
361,800

Website	Primary Use for High School Career Advisers	Why It's Useful
Jobs and Skills Australia	To access data on skills shortages and labour market trends	Helps in advising students on in-demand careers and the future of the job market
Labour Market Insights	To obtain employment projections and industry trends	Assists in preparing students for future job opportunities and understanding which sectors are growing
Course Seeker	For exploring post-secondary education options across Australia	Enables advisers to guide students in selecting courses and institutions that align with their career aspirations
Your Career	To provide students with tools for career exploration and skill development	Offers quizzes, resume tips, and job search strategies to help students plan their careers
My Future	For comprehensive career planning and exploration	Provides extensive information on various careers, industries, and education pathways, supporting informed decision-making

Map layer

Unemployment rate ⌄

Leaflet | © Mapbox © OpenStreetMap

My Next Move

Careers sorted by
Interests

Print | Share ▾

Your interests can help you find careers you might like to explore. The more a career meets your interests, the more likely it will be satisfying and rewarding to you. Click on the interests below to learn more about them and explore careers related to them.

- **Realistic** — practical, hands-on problems and solutions
- **Investigative** — ideas, thinking, and figuring things out
- **Artistic** — creating, designing, and making your own rules
- **Social** — helping people, teaching, and talking
- **Enterprising** — leading, making decisions, and business
- **Conventional** — data, detail, and regular routines

Verbal
- read and understand what is written

PERSONALITY

People interested in this work like activities that include **practical, hands-on** problems and solutions.
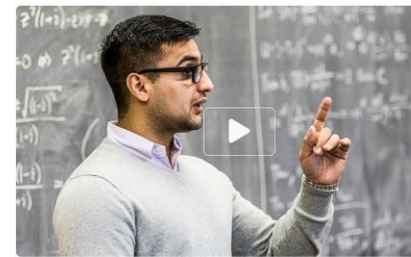
They do well at jobs that need:
- Dependability
- Attention to Detail
- Cooperation
- Stress Tolerance
- Adaptability/Flexibility
- Initiative

TECHNOLOGY

You might use software like this on the job:

Spreadsheet software
- Microsoft Excel 🔥

Electronic mail software
- Microsoft Outlook 🔥

Development environment software
- National Instruments LabVIEW

Business Teachers, Postsecondary

Print | Share ▾

Also called: Business Instructor, Business Professor, Instructor, Professor

What they do:
Teach courses in business administration and management, such as accounting, finance, human resources, labor and industrial relations, marketing, and operations research. Includes both teachers primarily engaged in teaching and those who do a combination of teaching and research.

On the job, you would:
- Prepare and deliver lectures to undergraduate or graduate students on topics such as financial accounting, principles of marketing, and operations management.
- Evaluate and grade students' class work, assignments, and papers.
- Initiate, facilitate, and moderate classroom discussions.

KNOWLEDGE

Arts and Humanities
- English language

Education and Training
- teaching and course design

Business
- management
- accounting and economics

Math and Science
- arithmetic, algebra, geometry, calculus, or statistics

SKILLS

Basic Skills
- talking to others
- listening to others, not interrupting, and asking good questions

Problem Solving
- noticing a problem and figuring out the best way to solve it

People and Technology Systems
- thinking about the pros and cons of different options and picking the best one
- figuring out how a system should work and how changes in the future will affect it

ABILITIES

Verbal
- communicate by speaking
- communicate by writing

Ideas and Logic
- make general rules or come up with answers from lots of detailed information
- use rules to solve problems

Math
- add, subtract, multiply, or divide
- choose the right type of math to solve a problem

PERSONALITY

People interested in this work like activities that include **helping people, teaching,** and talking.

They do well at jobs that need:
- Integrity
- Analytical Thinking
- Independence
- Achievement/Effort
- Attention to Detail
- Adaptability/Flexibility

TECHNOLOGY

You might use software like this on the job:

Electronic mail software
- Email software
- Microsoft Outlook 🔥

Computer based training software
- Blackboard software
- Schoology

Word processing software
- Google Docs 🔥
- Microsoft Word 🔥

AI Innovates Student Engagement:

ROSE   Prompting AI for Beauty not Beast

R   **Role**   What role do you want AI to play?

O   **Objective**   What is your objective or outcome?

S   **Style**   What style, tone, language?

E +/-   **Exemplar**   Give an example of what you want
and what you don't want

More Training in Prompting
https://learnprompting.org/docs/intro

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AI improves Career Advice

Meet "Carrie"

NSW High School Career Advisor

https://chat.openai.com/g/g-pQUGsPELS-carrie

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Summarisation - Eighty

https://eightify.app/

Key insights

🌱 You should have the right to grow, learn, explore, and change your mind, rather than being pressured to commit to doing one thing forever.

🌍 The rise in mental disorders globally among youth emphasizes the need for a new approach to finding one's path after school.

🌍 Taking a gap year to travel and explore different options can lead to unexpected and fulfilling paths, challenging the traditional idea of going straight to university after high school.

📉 It's not just me fumbling up and down in my path, it's the same for everyone. This is life.

🤔 These four basic choices will actually turn into over four thousand cities to visit more than four thousand degree granting universities alone in the world millions of jobs to choose

How to Find Your Path After School | Amba Brown | TEDxYouth@AIS

TEDx Talks
40.3M subscribers

3.5K | Subscribed | Summary | Share | Download | Clip | ...

AI Matches Work Experience : Work Experience Woes

yoodli

- Practice

- Home
- Dashboard
- Library
- **Exercises**

2/15 Yoodlis

⬆ **UPGRADE**

Use promo **SPEECH20**

Ian Farmer ⌄

Metaphor Mania

🧠 Lateral Thinking

🤝 Conciseness 🏃 Agility

Quickly build analogies without letting the pressure affect you

Start Practicing

Spin a Yarn

👤 Articulation 📋 Structure

🧠 Lateral Thinking

Maintain your train of thought with plot twists along the way

Start Practicing
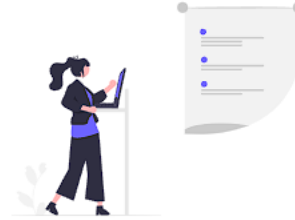
No Filler

🙈 Filler Words

👤 Articulation 📋 Structure

Speak without using filler words like 'um', 'like', and 'so'

Start Practicing

Storyteller (Beta)

👤 Articulation 📋 Structure

🧠 Lateral Thinking

Tell a creative story with the help of your AI co-author

Start Practicing

⧬ UTS

Future Skills Forecasting

What are the in-demand jobs, how do they fit with neuro diverse students?

Neurodiverse Condition	Emerging Careers / In-Demand Skills	Potential Fit and Explanation	Possible Jobs
Autism Spectrum Disorder (ASD)	Data Science, Cybersecurity	Focus on detail, deep concentration, pattern recognition	Data Analyst, Cybersecurity Analyst
Attention Deficit Hyperactivity Disorder (ADHD)	Creative Industries (e.g., Marketing, Design)	Creativity, ability to think outside the box	Creative Director, Graphic Designer
Dyslexia	Entrepreneurship, Arts	Problem-solving skills, creative thinking	Entrepreneur, Art Director
Dyspraxia	Project Management, IT Support	Strong verbal skills, strategic thinking	Project Coordinator, IT Support Specialist
Tourette Syndrome (TS)	Computer Programming, Engineering	Structured, task-focused work environment	Software Developer, Mechanical Engineer
Dyscalculia	Graphic Design, Content Creation	Visual creativity, less reliance on numerical skills	Graphic Designer, Content Writer
Asperger's Syndrome	Software Development, Technical Writing	Deep focus, attention to detail	Software Engineer, Technical Writer
Non-Verbal Learning Disability (NVLD)	Human Resources, Counseling	Empathy, strong verbal skills	HR Specialist, Mental Health Counselor
Executive Functioning Disorder	Logistics, Supply Chain Management	Strategic planning, organization	Logistics Manager, Supply Chain Analyst
Obsessive-Compulsive Disorder (OCD)	Quality Assurance, Research	Meticulousness, attention to detail	QA Engineer, Research Assistant

Tech Tangle

AI Resume tools

1. Rezi
2. Kickresume
3. ChatGPT
4. Skillroads
5. Jobscan
6. Resume.co
7. ResumeNerd
8. Grammarly's Resume Skills
9. Career.io Resume Builder
10. TealHQ Resume Builder
11. JasperAI Resume Generator

Emotions Over Time
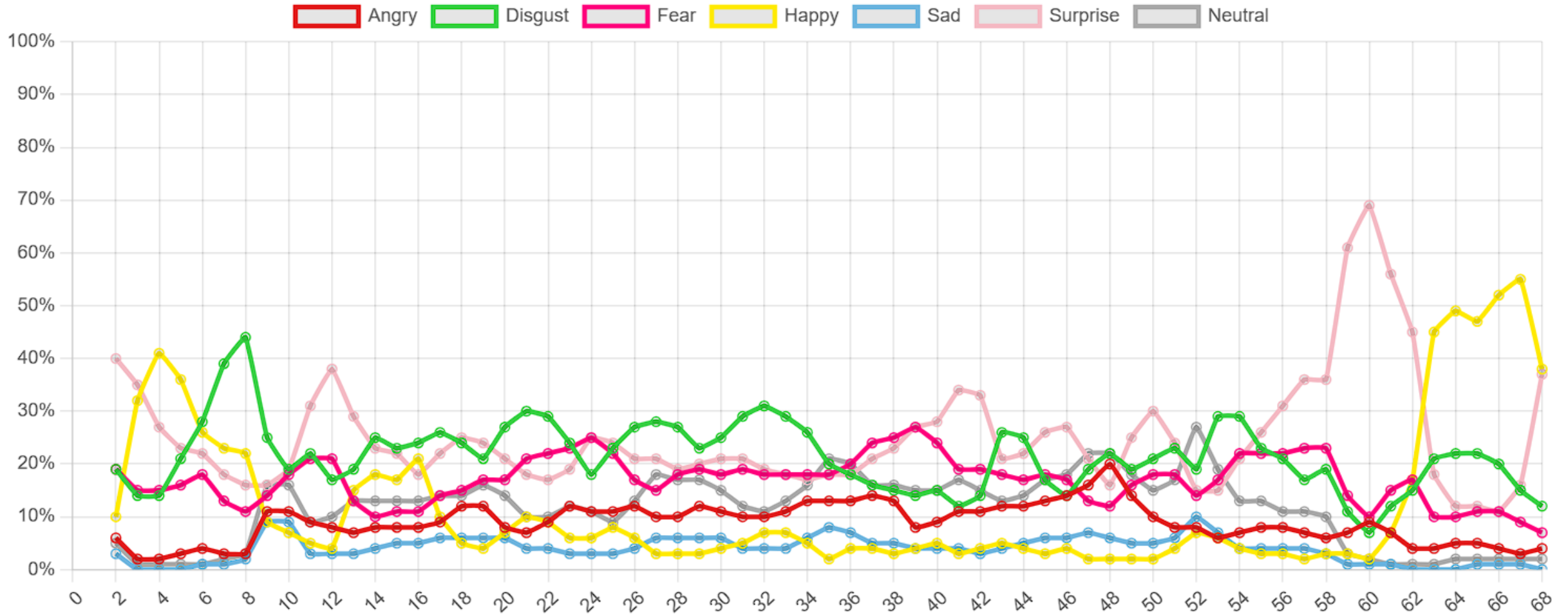
AI Forecasts Future Skills : Looking ahead

Speech interfaces to AI

Language real-time translation

Personal AI Tutors / Life Coach

Smart Automation

AI spam

Human Centred AI
https://timreview.ca/article/1438

Can it bring (more) equality into education?

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Key Takeaways

Top 10 skills of 2025

- Analytical thinking and innovation
- Active learning and learning strategies
- Complex problem-solving
- Critical thinking and analysis
- Creativity, originality and initiative
- Leadership and social influence
- Technology use, monitoring and control
- Technology design and programming
- Resilience, stress tolerance and flexibility
- Reasoning, problem-solving and ideation

Type of skill
- Problem-solving
- Self-management
- Working with people
- Technology use and development

Source: Future of Jobs Report 2020, World Economic Forum.

WORLD ECONOMIC FORUM

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How much should I get paid?

Learn about Pi and AI

Do you have a type A or type B personality?

Oh, now that's a meta topic! 😉 I'm always happy to chat about AI, machine learning and the future of tech. Do you have any specific questions about AI, or just want a general overview?

🌠
The history and mystery of Pi

🗒️
Introduction to Machine Learning

☂️
Future technologies shaping our world

Ethic consi in AI devel

🔁 More ideas

Talk with Pi about this

Automated Agents

Give me 3 possible new courses for CEACAPA to run in Sydney?

Suggested plan 👍 👎

Analyze website to know the existing courses

Analyzing the given files to find the currently taught courses...

Searching for best performing study abroad programs

Find highest US-based popularity understanding topic trends

Propose courses for CEACAPA and describe them

Start   ✎ **Edit**

https://www.cognosys.com/

I need more information to give you a better output

Do you have any specific criteria for selecting the new courses? For example, are there any specific subject areas that CEACAPA specializes in or would like to expand into?

Innovation, Critical Thinking, Agility, Climate change and the environment

Are the courses you are looking to develop at an undergraduate or postgraduate level?

Undergraduate   Postgraduate

Are there any particular countries or regions that the CEACAPA students are coming from? It could be helpful to know this information when considering global demand for specific course topics.

Mostly from the US

Continue   Skip

Example : https://www.cognosys.ai/dashboard/a/8b425aa0-192c-47b0-a089-59e4bab0db81

~~Proceed with caution~~   Do Fail to Learn, Don't Fail to Learn
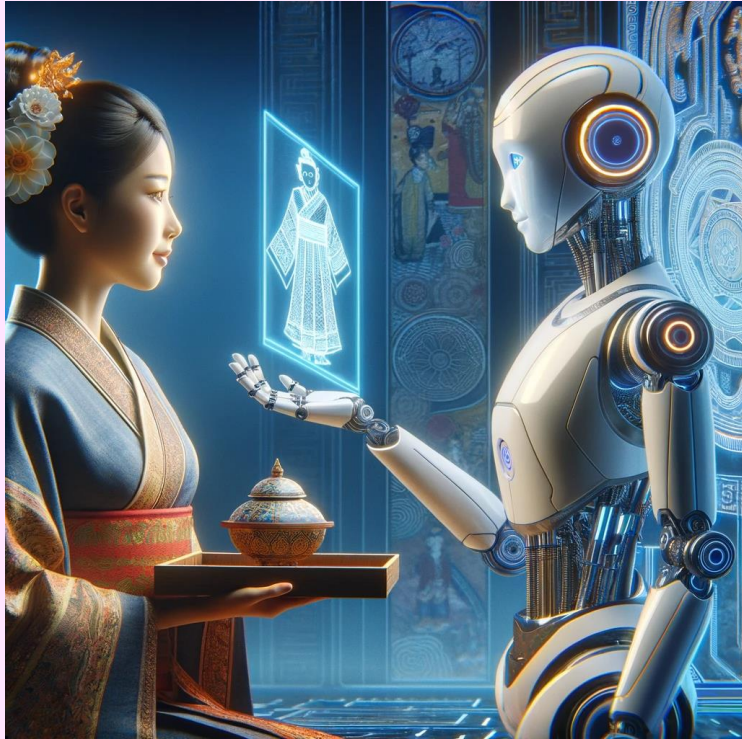
Approach with Cultural Humility

AI Literacy

Enhance not Hinder Critical Thinking

e.g. Cambridge-Life-Competencies

Ian Farmer   Ian.farmer@uts.edu.au   @ifamer

Ian Farmer

Ian.farmer@uts.edu.au

BACKUP SLIDES

AI Literacy – no technical skills required

Curiousity - The ability to question

Willingness to Experiment

- Do fail to learn; but don't fail to learn

Critical thinking

- Verify the output, - Link critical thinking to the lessons

Incorporate it into your daily life

- Subscribe to educational AI news, UNESCO Guidance

- Learn & practise prompting 101

Share the learnings (& failures) – expect rapid changes

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Policy and Regulations aren't keeping up

While **ChatGPT** reached **100 million** monthly active users in January 2023, only **one country** has released regulation **on generative AI** in July

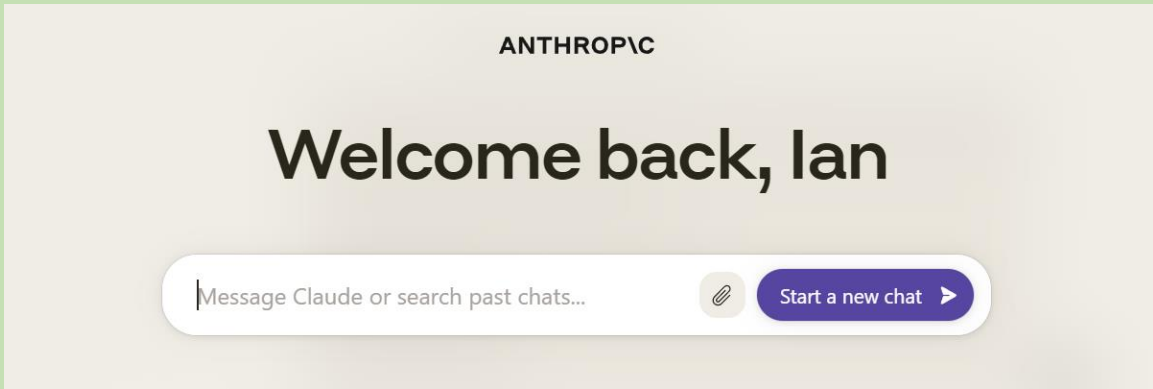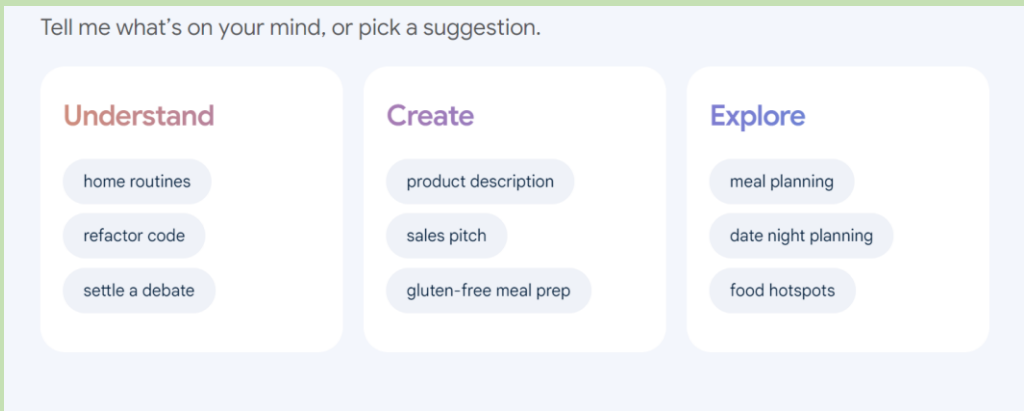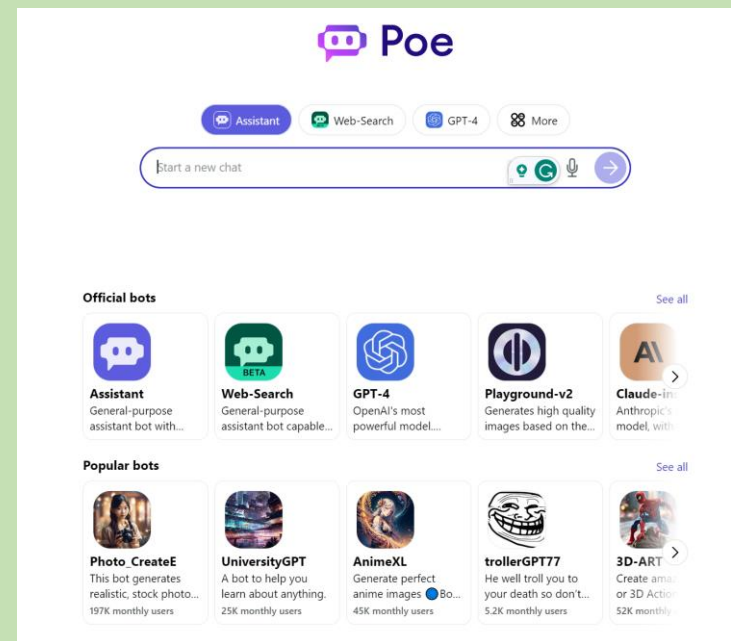| Future Trend	Negative Impact of Existing Skills	Curiousity	Sense-making	Creativity	Risk-taking	Tolerance for Ambiguity	Neurodiversity
Advancements in AI and Automation	Reliance on outdated coding paradigms; Resistance to AI integration	Drive exploration of AI capabilities	Interpret complex AI insights	Innovate with AI	Embrace experimentation in AI adoption	Navigate uncertainties of AI	Design inclusive AI systems
Emergence of New Technologies	Attachment to traditional design tools; Resistance to new tech adoption	Explore emerging tech applications	Understand tech complexities	Push boundaries with new tech	Embrace ambiguity in tech exploration	Navigate uncertainties of new tech	Design inclusive tech experiences
Focus on Sustainability and Ethics	Prioritization of profit over ethics; Resistance to change in ethical norms	Investigate ethical implications	Interpret ethical considerations	Integrate ethics into design	Challenge norms for ethical innovation	Navigate ethical gray areas	Design inclusive ethical solutions
Personalized and Contextualized Experiences	One-size-fits-all approach to design; Resistance to data-driven decision-making	Explore user preferences and behaviors	Interpret user data and feedback	Design tailored experiences	Experiment with personalized approaches	Adapt to evolving user needs	Design inclusive user experiences
Rise of Decentralized Technologies	Attachment to centralized systems; Resistance to blockchain adoption	Explore blockchain applications	Navigate regulatory and tech complexities	Innovate with decentralized tech	Embrace ambiguity in decentralized space	Navigate uncertainties of decentralization	Design inclusive decentralized systems
Integration of Voice and NLP	Resistance to voice technology; Attachment to text-based interfaces	Explore voice and NLP applications	Interpret language nuances	Design intuitive voice interfaces	Experiment with conversational AI systems	Embrace ambiguity in language processing	Design inclusive conversational AI systems

Visualization and Literature Review:

Not Just ChatGPT

Horses for courses so experiment

ANTHROP\C

Welcome back, Ian

Message Claude or search past chats...   Start a new chat ▶

https://claude.ai by far the best writer in the group

Tell me what's on your mind, or pick a suggestion.

Understand
- home routines
- refactor code
- settle a debate

Create
- product description
- sales pitch
- gluten-free meal prep

Explore
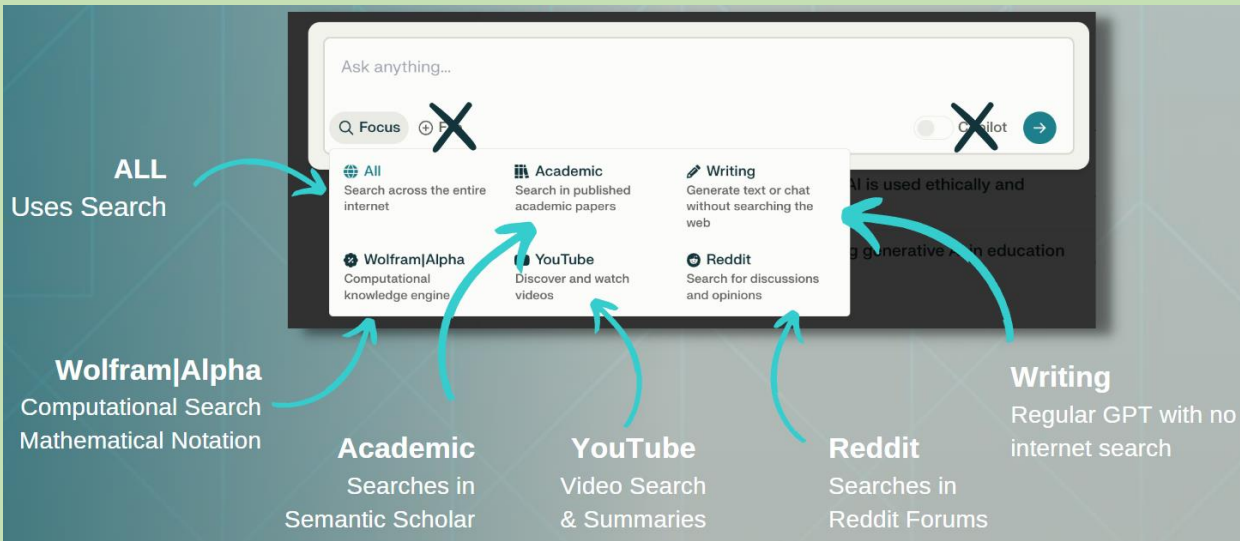- meal planning
- date night planning
- food hotspots

https://bard.google.com integrates well with Gmail and Google Drive and can help to automate tasks

💬 Poe

💬 Assistant   💬 Web-Search   🔵 GPT-4   ❖ More

Start a new chat

Official bots

| Assistant | Web-Search | GPT-4 | Playground-v2 | Claude-in |
| General-purpose assistant bot with... | General-purpose assistant bot capable... | OpenAI's most powerful model... | Generates high quality images based on the... | Anthropic's model, with... |

Popular bots

Photo_CreateE	UniversityGPT	AnimeXL	trollerGPT77	3D-ART
This bot generates realistic, stock photo...	A bot to help you learn about anything.	Generate perfect anime images 🔵Bo...	He well troll you to your death so don't...	Create amaz... or 3D Action...
197K monthly users	25K monthly users	45K monthly users	5.2K monthly users	52K monthly

https://poe.com/
allows you to select the LLM

← → C ⌂ https://pi.ai/discover

Discover

Discover

Profile

Just vent	Learn about something new
Brainstorm ideas	Practice a big conversation
I need a safe space for something	Relationship advice
Feel calm	Coach me through a problem
Journal it out	Get motivated

https://Pi.ai
Heavily backed
Aiming to be Personal AI

ALL
Uses Search

Wolfram|Alpha
Computational Search
Mathematical Notation

Academic
Searches in
Semantic Scholar

YouTube
Video Search
& Summaries

Reddit
Searches in
Reddit Forums

Writing
Regular GPT with no
internet search
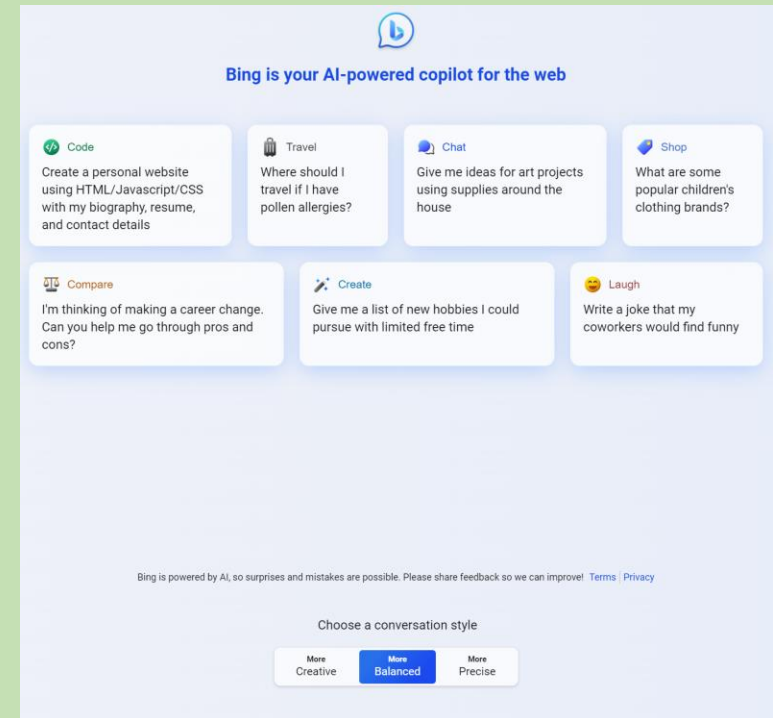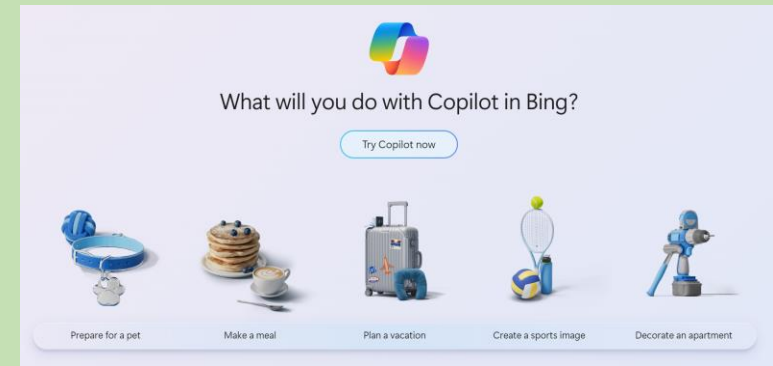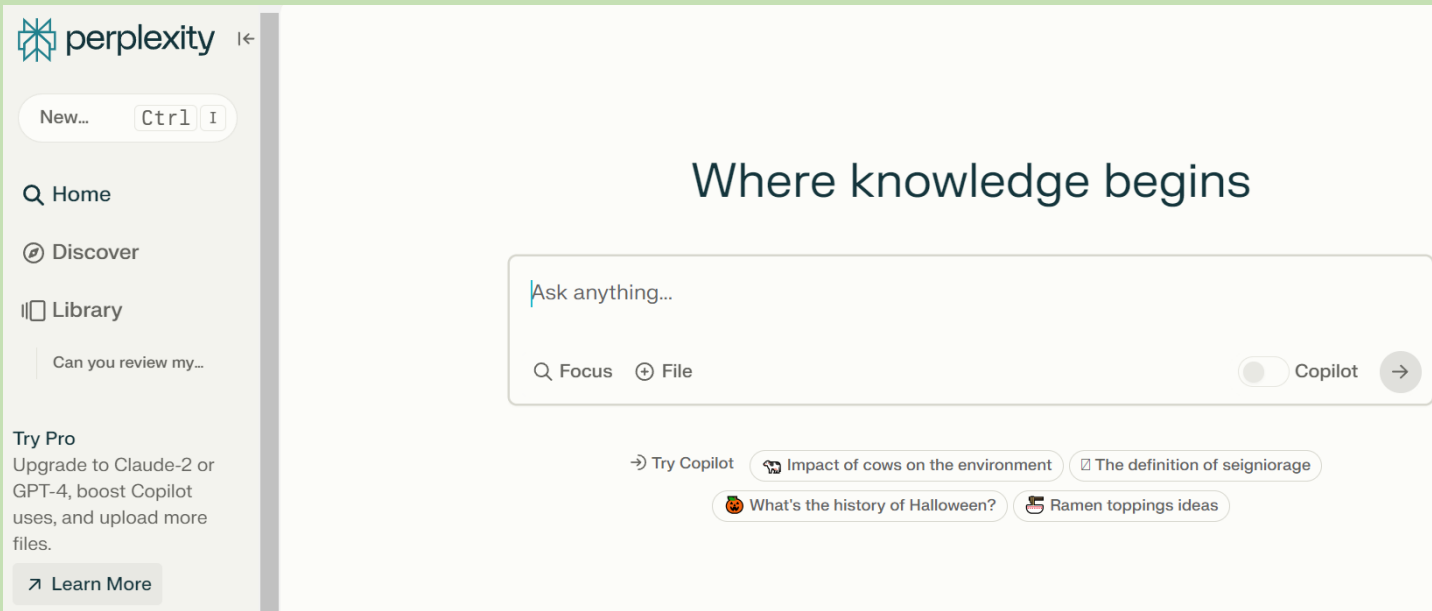
https://bing.com/chat- now called CoPilot
Runs over Sharepoint for internal AI

https://www.perplexity.ai/ Perplexity is a good free alternative to ChatGPT plus
https://www.perplexity.ai/search/summarise-this-video-IoI8mGigTfSdkpBhRnb9Bw?s=c

Cogniti
AI agents, your way

Cogniti is designed by educators, and built by educators, to empower educators.

Create steerable and accurate agents powered by generative AI. Cogniti is designed to let teachers build custom chatbot agents that can be given specific instructions, and specific resources, to assist student learning in context-sensitive ways.

https://cogniti.ai/

Steerable
Create AI agents and control how they will interact with students.

Resourced
Provide your AI agents with web pages, files, and other resources to answer more accurately.

Equitable
Provide all students with the same access to powerful AI agents.

Insightful
Understand how your students are interacting with AI agents, to inform your teaching.

https://cogniti.ai/   Demo https://app.cogniti.ai/agents/

Developed by USYD Danny Liu

- No need for staff or students to create an account with OpenAI

- Access (and cost) are provisioned by the institution

- LMS integration (e.g. agents can be embedded as a plugin into an LMS, allowing seamless access for students)

- Conversations are logged and available to educators and administrators, increasing safety for students

- Students can flag and rate AI messages, and this feedback is provided to educators and administrators for continual improvement

- Cogniti is hosted on private and secure Microsoft Azure services, which are not connected with OpenAI's servers

AI Video Translation

Tool lingohub.ai

https://youtu.be/_wnG6aZzwuA?si=kB7Id8Z1dAh1iz7D

Meta's new expression tool
https://seamless.metademolab.com/expressive

Microsoft - image to talking video
https://microsoft.github.io/GAIA/

Computer Vision
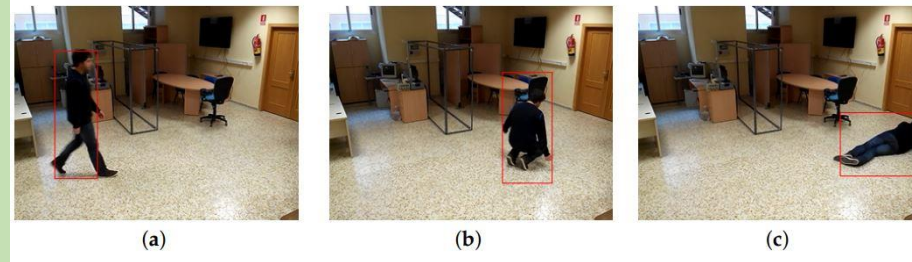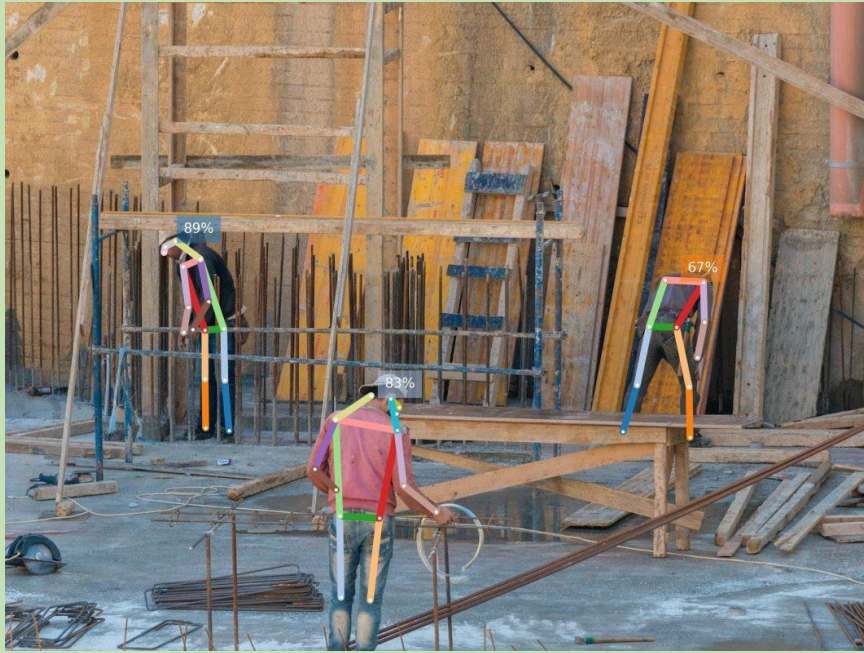
Guilding Principles are better than rules of do's and don'ts

RESOURCES

- Ian.farmer@uts.edu.au

AI for education | Microsoft Learn

Unlock generative AI safely and responsibly—classroom toolkit | Microsoft Learn

Educator Center trainings

Empower educators to explore the potential of artificial intelligence

Navigate AI in education by looking at essential AI concepts, techniques, and tools.

Enhance teaching and learning with Bing Chat

Explore using Bing Chat in education by learning basic concepts, modes, and features.

Support reading fluency practice with Reading Progress

Build fluency through independent practice and save time with Insights.

Explore generative AI with Copilot in Bing

Interact with Microsoft Copilot in Bing to learn about the capabilities of generative AI.

Educator Center Overview - Microsoft Learn Educator Center | Microsoft Learn

Empower educators to explore the potential of artificial intelligence - Training | Microsoft Learn

[AI 101 for Teachers | Code.org](#)

[AI Guidance for Schools Toolkit (teachai.org)](teachai.org)

AI is transforming our world.

Let's #TeachAI

How To Use This Toolkit

Incorporate AI in an Education System

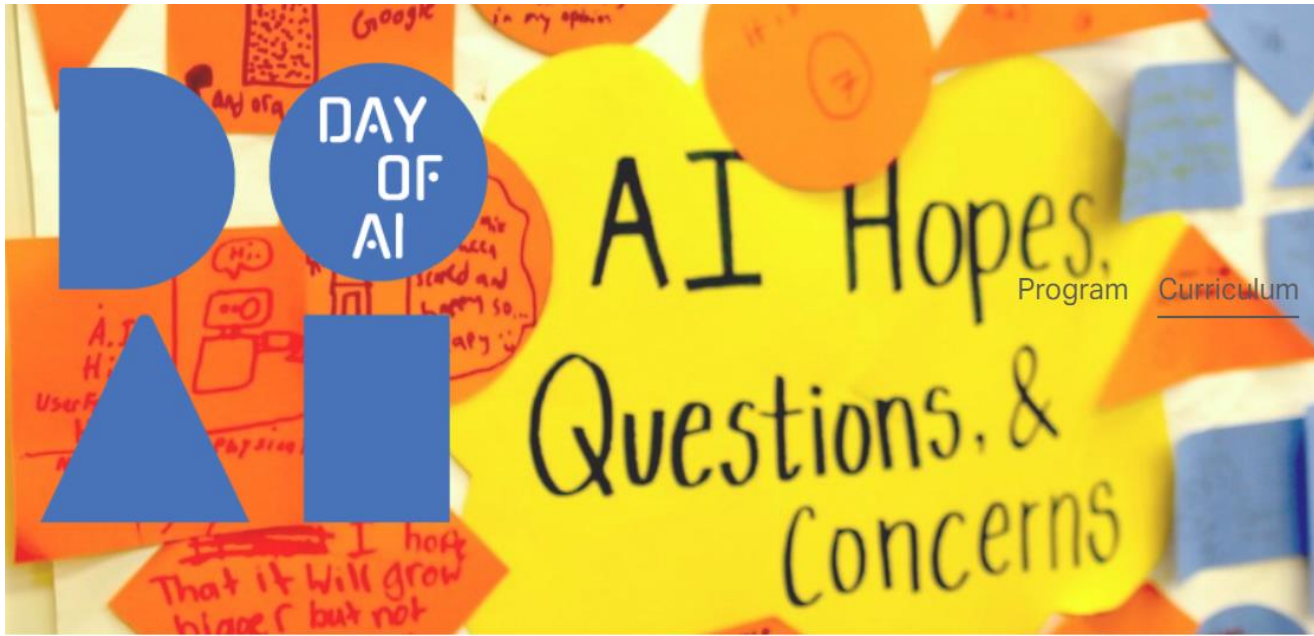Apply Seven Principles for AI in Education

View Sample School Guidance

Revise Existing Policies

Customize a Presentation

Engage Parents, Staff, and Students

Learn How AI was Used in This Toolkit

[Day of AI](#)

ChatGPT in School

What is ChatGPT? How should it be used (or not) in schools?

Chatbot ● Creativity ● Natural Language Processing

4 lessons | Total time: 3+ hours

+ **Big Idea: An Introduction to ChatGPT**

+ **What you'll need**

+ **Recommendations**

What is AI?

All Grades

Early Elementary

Grades K-2 | Ages 5-7

Upper Elementary

Grades 3-5 | Ages 8-10

[Lesson PlansElementary Schools Overview | ReadyAI](#)

[Curriculum — Day of AI](#)

AI in Higher Education – resources

Global

UNESCO, Miao, F., & Holmes, W. (2023). Guidance for generative AI in education and research. UNESCO: United Nations Educational, Scientific and Cultural Organisation. France. Retrieved from https://policycommons.net/artifacts/6942367/guidance-for-generative-ai-in-education-and-research/7852269/

Australian Focused frameworks and policies

TEQSA - Assessment reform for the age of artificial intelligence
https://www.teqsa.gov.au/sites/default/files/2023-09/assessment-reform-age-artificial-intelligence-discussion-paper.pdf

Australian Framework for Generative Artificial Intelligence (AI) in Schools
https://www.education.gov.au/schooling/resources/australian-framework-generative-artificial-intelligence-ai-schools

NSW Artificial Intelligence Assurance Framework
https://www.digital.nsw.gov.au/policy/artificial-intelligence/nsw-artificial-intelligence-assurance-framework

US Focused

US Govt 71-page report from May 2023 : AI and the Future of Teaching and Learning
https://www2.ed.gov/documents/ai-report/ai-report.pdf

Tech Policy (US-centric)
https://www.techpolicy.press/category/artificial-intelligence/

AI Risk-Management Standards Profile for General-Purpose AI Systems (GPAIS) and Foundation Models
https://cltc.berkeley.edu/publication/ai-risk-management-standards-profile/

Curated lists

List of resources links on Gen AI in Higher Education and AI text generators
https://docs.google.com/document/d/1V1drRG1XlWTBrEwgGqd-cCySUB12JrcoamB5i16-Ezw/edit#heading=h.sot8caygc8jr

Blogs / Learning

https://leonfurze.com/blog/ Some excellent articles on ethics, ungrading

https://nickpotkalitsky.substack.com/

AI Will Transform Teaching and Learning. Let's Get it Right.
https://hai.stanford.edu/news/ai-will-transform-teaching-and-learning-lets-get-it-right

The Handbook of #AcademicIntegrity (2nd ed.)   https://t.co/D0iThG45pF

Examples using AI to learn https://ctrl-f.ca/en/examples/page/2/

Learn Prompting https://learnprompting.org/docs/intro

Image & Video tools https://www.thinkdiffusion.com/

aiEDU ai Toolkits — aiEDU

AI in the K-12 Classroom - AVID Open Access

AI Tools directories

There are a number of curated lists of AI tools that allow search and categorisation navigation, and can be a useful place to see what tools are already available, the pricing structure and who they compete against. Most are monetised by sponsorships which they include in their daily news subscriptions

https://www.futurepedia.io/

https://www.toptools.ai/

https://www.futuretools.io/?search=education

https://aiscout.net/ which has 101 Education tools https://aiscout.net/ai-tools/education/

https://aieducator.tools/

Human Centred AI

https://timreview.ca/article/1438
https://ocelotbot.com/articles/human-centered-artificial-intelligence-higher-education/

UTS **Ian Farmer** Ian.farmer@uts.edu.au 0417 460 518