





Navigating the Future - Al's Impact on Education

22 March 2024

Al: from Coach to Copilot

Dr Cris Bloomfield Senior Education Architect



Al technology is creating impact.



New Bing with ChatGPT brings the power of AI to Microsoft's signature search engine



How AI Is Shaping the Future of Higher Ed

M'hammed Abdous considers the myriad ways artificial intelligence is transforming higher education's administrative, teaching and research practices.





MICROSOFT / TECH / ARTIFICIAL INTELLIGENCE

Microsoft launches Azure OpenAl service with ChatGPT coming soon / ChatGPT is coming to this Azure service soon, as businesses get to use new Al models in their own apps.



What Is ChatGPT and How Is It Used in Education?



SOFTWARE

Microsoft Makes a Major Investment in ChatGPT Tech

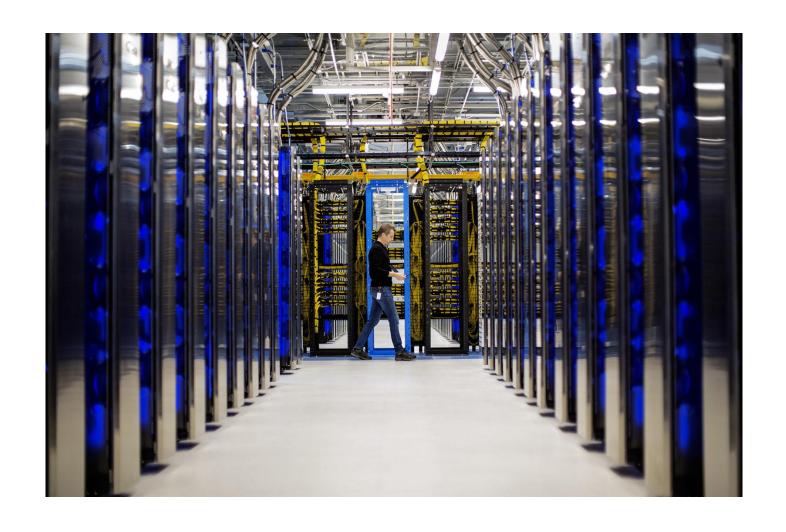
A multibillion-dollar agreement with OpenAI aims to bring artificial intelligence capabilities to Microsoft tools and the Bing search engine.



LIVING → EDUCATION — March 8, 2023

An inside look at a 5th grade classroom using ChatGPT

Al is here.



Russell Group published principles on the use of Al in education

4th July 2023

The statement lists five principles:

- Universities will support students and staff to become AI-literate.
- Staff should be equipped to support students to use generative AI tools effectively and appropriately in their learning experience.
- 3. Universities will adapt teaching and assessment to incorporate the ethical use of generative AI and support equal access.
- 4. Universities will ensure academic rigour and integrity is upheld.
- 5. Universities will work collaboratively to share best practice as the technology and its application in education evolves.

"Radically accelerate employee productivity and capability"

Scott Guthrie

A large language model is a type of artificial intelligence that can process and produce natural language texts.

It learns from a massive amount of text data, such as books, articles, and web pages, and discovers the patterns and rules of language from them.

It can do various tasks, such as answering questions, summarizing texts, writing essays, and more.

Prompt:

In 100 words or less, please tell me what a large language model is

Prompt:

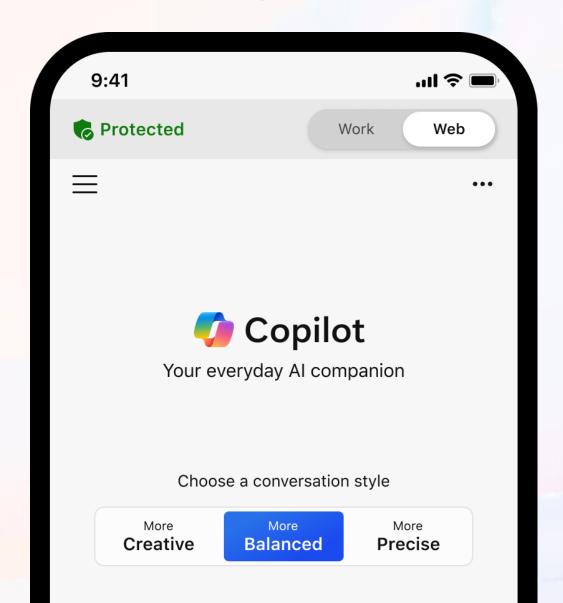
In the style of John Constable produce an image of Hyde Park in central London

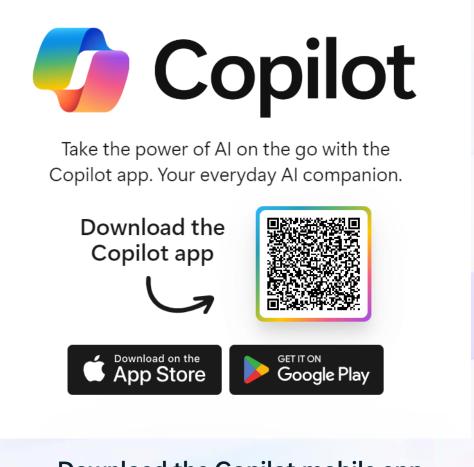


Al in Microsoft Cloud solutions

Al Use Case	Where to Try	Powered By
Assisted Coding & Generated Content	♦ ○	Azure OpenAl Service
Copilot for every job role	Microsoft Security	Azure OpenAl Service
Content & Design Production	P	Azure Machine Learning
Personalized Recommendations	XBOX	Azure Machine Learning
Contextual Assistance		Azure Cognitive Services
Image Captioning, SEO & Accessibility	Linked in	Azure Cognitive Services
Speech Transcription & Captioning	ii	Azure Cognitive Services
Insider Risk Management	Microsoft Security	Azure Cognitive Services
Personalized Learning	Microsoft Education	Azure Applied Al
Content Reading & Writing Experiences	C	Azure Applied Al
Extract Text from Documents & Structure Data		Azure Applied Al
Search as a Service	Microsoft Bing	Azure Applied Al

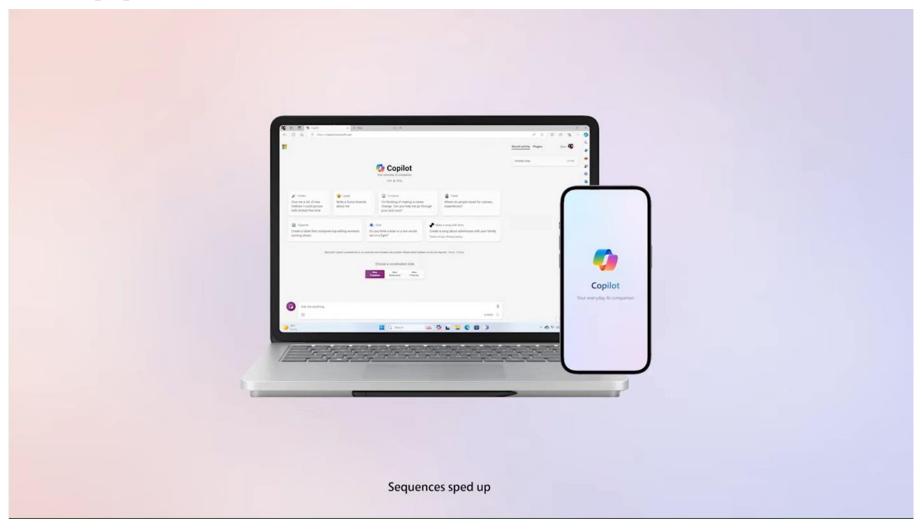
Users can take power of AI on the go with the Copilot app





Download the Copilot mobile app at aka.ms/Copilot/MobileApp

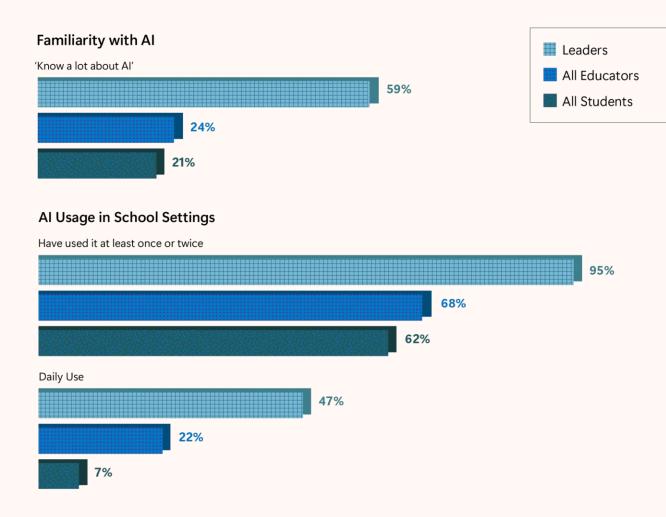
Copilot App



https://www.youtube.com/watch?v=nKcyU8hh14Q

Bridging the Alliteracy gap

Today, use of AI outpaces understanding of the technology. This disconnect points to an urgent need to increase AI literacy and AI integration in strategic priorities, standards, policies, and professional development.



Source: AI in Education Microsoft Study (November 2023)
Survey questions: How much do you know about AI (prior to taking this survey)? Select only one.
Have you used or tried an AI tool or service before in your role at your educational institution or for school-related purposes? Select only one. How often do you use AI tools/services in your role at your educational institution or for school-related purposes?

Use Cases

Students most frequently use AI to summarize information, educators leverage AI for class planning and content, and leaders use it to drive process efficiency.



Source: AI in Education Microsoft Study (November 2023) Survey questions: For which of the following tasks are you using AI tools in your role? For which of the following tasks are you using AI tools as a student?

What concerns are there?

Challenges

Challenges like data privacy and security, equitable access, training, and mitigating overreliance are critical to address. And concerns around cheating call for rethinking of policy and assessment in a world without reliable Al detection tools.



Source: AI in Education Microsoft Study (November 2023)
Survey question: Please select the top 3 reasons why you may be concerned about AI usage within your school/district/university.

Opportunities for AI in Education

 Personalize learning based on individual student needs with tailored content and targeted coaching to support improvement

 Improve accessibility with translation, captioning, read-aloud, and voice input

 Build Al literacy among staff, educators, and students to encourage responsible usage and effectively advance learning

 Equip students with the skills they'll need to thrive in the future of work

 Defend at machine speed with gains in quality detection, speed of response, and ability to strengthen security posture

• **Protect your data** with the most comprehensive compliance and security controls in the industry

 Engage learners by providing interactive experiences, a jump-start to creative processes, and real-time feedback

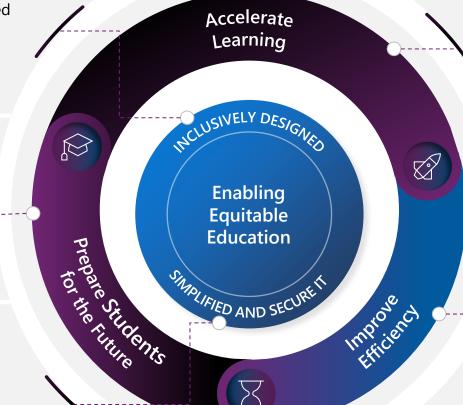
> Analyze data efficiently and deliver actionable insights from unstructured data across diverse sources of information

 Create and customize content for lesson plans, quizzes, rubrics and more for any topic, in any language, for any level

• **Enhance support services** with the ability to answer FAQs, recommend resources, and provide personalized information

• **Unlock productivity** and save staff time spent writing, searching, editing, and analyzing

Automate processes for administrative or repetitive tasks such as managing IT helpdesk tickets, course scheduling, and more



The Impact is Real



built AI tools that emphasize equity, accessibility, and privacy



helps staff search and brainstorm efficiently with Microsoft Copilot



works towards helping more students get to graduation



personalizes student engagement and brings meaning to data chaos



empowers instructors to easily streamline and create course content



expedites faculty workflows with Copilot for Microsoft 365



promotes equality and innovation for students with Microsoft Copilot

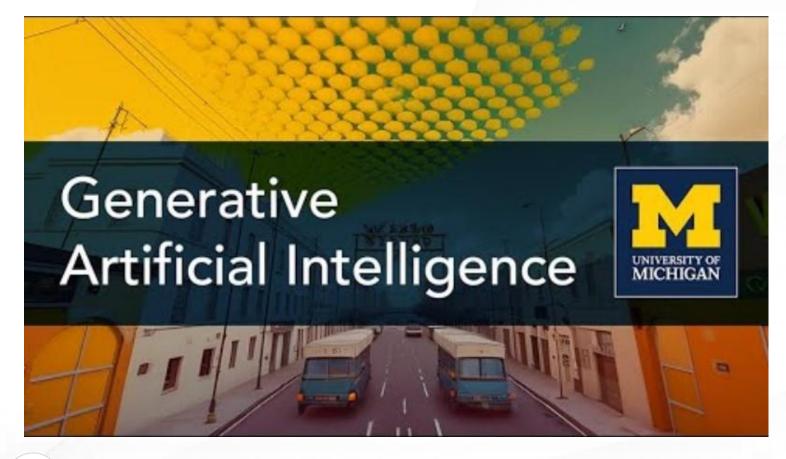


transforms the future of higher education



University of
Michigan brought
generative AI to their
campus with a focus
on equity,
accessibility, and
privacy using the
Azure OpenAI Service

Read more



66

"At the core of our GenAI services is our commitment to provide tools and technologies that enhance, support, and augment humanity. We are confident that our community will utilize these services to make a positive difference in the world. The platform we built with Microsoft provides our users with AI tools that firmly emphasize the importance of equity, accessibility, and privacy."

- Ravi Pendse, Vice President for Information Technology and Chief Information Officer at U-M

BROWARD[®] COLLEGE

Broward harnessed the power of data and Al with the goal of decreasing its student attrition rate and helping more students get to graduation

Read more



"Our students don't come to quit, they come to finish—but they just don't always know what's in the journey ahead of them. We can use this technology to predict and help them succeed."

- Dr. Mildred Coyne, Senior Vice President of Workforce Education and Innovation, Broward College

Situation

Broward College, a nationally recognized public college in Florida, wanted to harness the power of its data to better understand student pathways, with the goal of decreasing its student attrition rate and helping more students get to graduation.

Solution

Using Azure Machine Learning and responsible AI, the organization identified five key predictors of student attrition, leading to data-driven, actionable strategies to help more Broward College students transform their lives and reach their goals.

Impact

Through more focused interventions, Broward faculty and staff can help more students achieve their dreams, generating long-term educational, social, and economic impacts for the Broward community.

lanthology

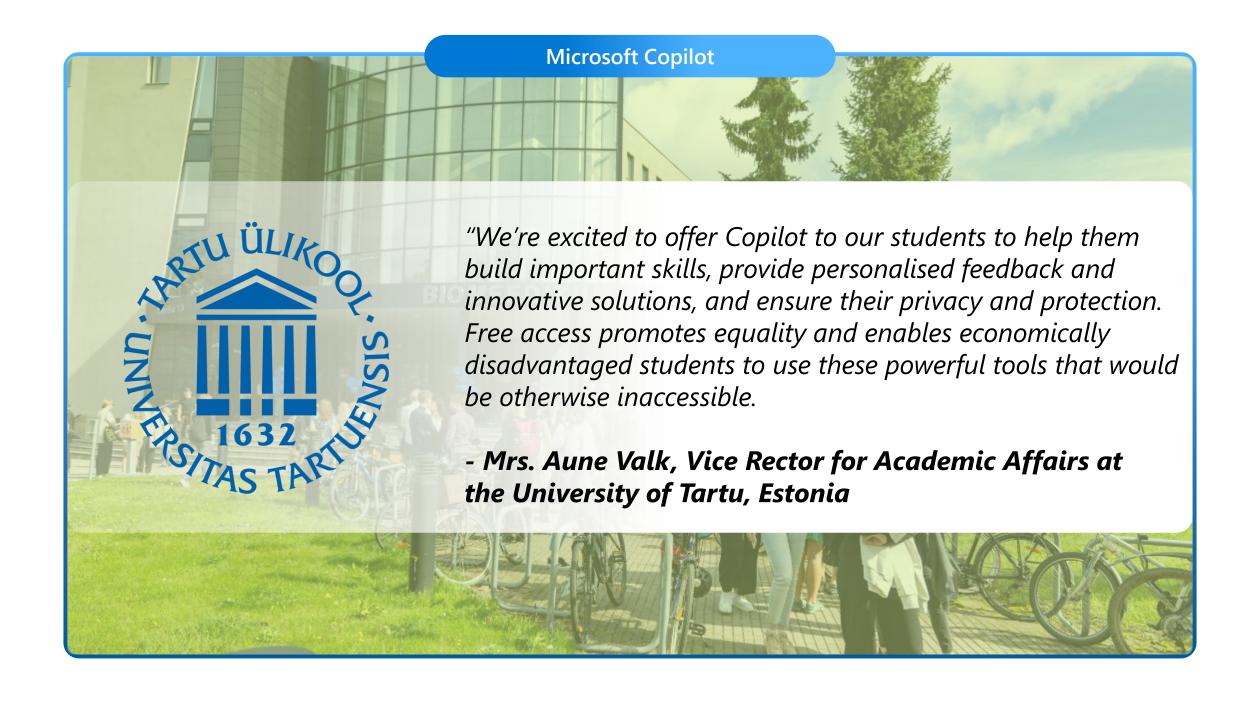
Anthology empowers instructors by streamlining the course building process and giving experts a head start using Azure OpenAl Service

Read more



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We know that instructors are central to practically all the aspects of the student experience. And frankly, they're spread so thin across so many responsibilities. So, in the same way that we built features that identify students who need additional support, we're now using AI to streamline the course building process.





Linköping University adopted Microsoft
Copilot to help faculty, researchers, and staff to search efficiently, assist in conducting literature reviews, brainstorm ideas for projects and proposals, and draft content



66)

Our community has been asking for the ability to use a generative AI solution, and I'm pleased to now be able to offer Microsoft Copilot with commercial data protection due to the security and privacy that Microsoft provides.

- Joakim Nejdeby, Chief Information Officer, Linköping University



CSUSM tracks and personalizes student engagement throughout the lifecycle journey by leveraging Dynamics 365 Customers Insights and Copilot

Read more



"What the university can do with Dynamics 365 and the power of AI is curate and centralize data. We are bringing meaning to data chaos."

—**Tony C. Chung**, Chief Information Officer, California State University San Marcos

Situation

To meet the diverse needs of its students, and to maintain its dedication to their university experience, California State University San Marcos needed a strategic and campus-wide plan to connect siloed and disconnected systems while empowering its staff with efficient communication tools.

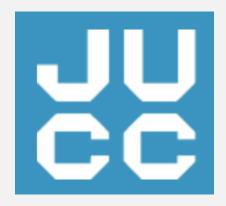
Solution

Using Dynamics 365, CSUSM is streamlining processes and standardizing data while staying focused on the experiences of students, faculty, and the community. It handles school events and recruitment through Customer Insights and AI, creating consistent but customized communications.

Impact

Through its use of Customer Insights and AI, CSUSM has been able to better understand and personalize the student journey—from recruitment through graduation and beyond.





The eight UGCfunded universities collaborate with Microsoft Hong Kong to transform the future of education, powered by the Azure OpenAl Service

Read more



Microsoft is collaborating with the universities to harness the potential of the Azure OpenAl Service in developing their own solutions. The solutions will benefit from Microsoft's comprehensive end-to-end enterprise-grade security measures, safeguarding sensitive research and ensuring data privacy within the academic environment. Capabilities being explored include:

Course design

- Aid course design by generating course content, supporting assessment designs, and contributing to course improvement
- Offer recommendations to enhance curriculum development in higher education settings

Student engagement

- Act as an online advisor to answer student inquiries, provide guidance on course materials, and assist with academic support
- Provide career planning suggestions, enhancing access to information and resources, improving student engagement

Research

- Retrieve information from a vast array of research papers, books, and other academic sources
- Generate research background information and citations by identifying suitable and relevant resources

Operations

- Campus-wide 24/7 virtual assistant, responding to queries related to admission, student support, campus-specific information
- Centralize operational documents and provide guidance to staff members across departments

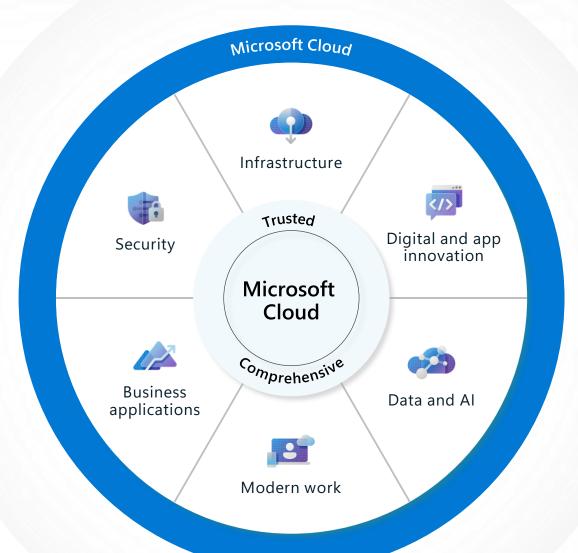
Enabling Al transformation

Enhance learning and build foundational skills with Al-powered tools

Boost productivity across your organization with Microsoft Copilot

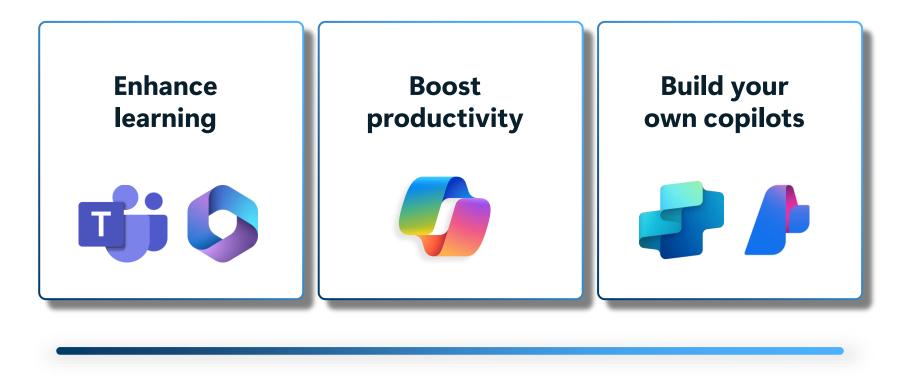
Build your AI capability with an open AI platform and partner ecosystem

Co-innovate with trust and safeguard your organization





Enable AI transformation with the Microsoft Cloud



Co-innovate with trust and safeguard your organization

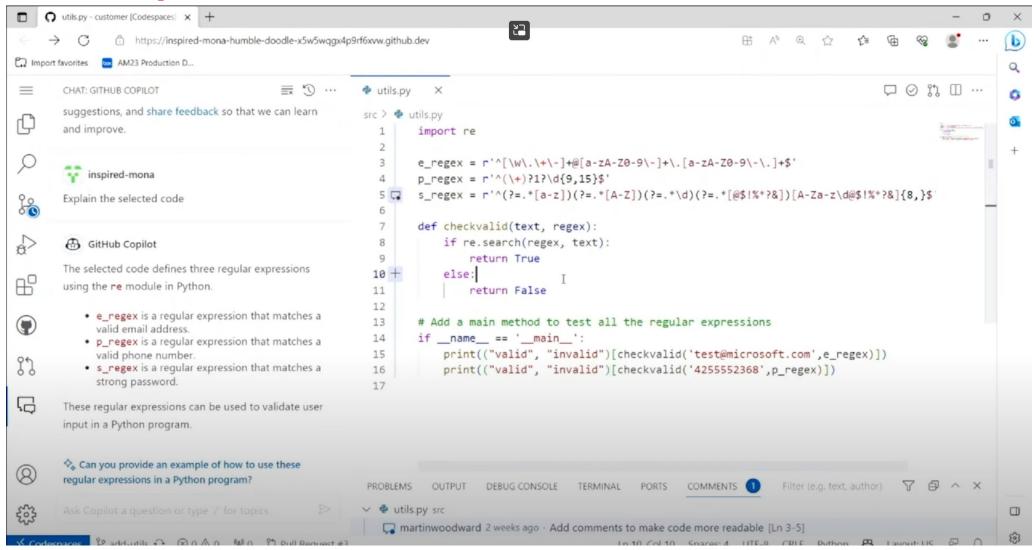
GitHub Copilot

"This is the single most mind-blowing application of machine learning I've ever seen."

Mike Krieger, Co-founder, Instagram

```
шш
function login() {
   authContext.login();
  authContext.logOut();
   return authContext.getCachedToken('c24f035c-1ff6-4dfa-b76d-c75a29ad2c3c');
 ar graphClient = MicrosoftGraph.Client.init({
   authProvider: (done) => {
       done(null, getAccessToken());
```

GitHub Copilot in Action



3 GitHub Copilot

46%

of new code is now written by Al 75%

of developers feel more focused on satisfying work 96%

of developers are faster with repetitive tasks

Microsoft Copilot is already transforming work

75%

spent less time searching for information

71%

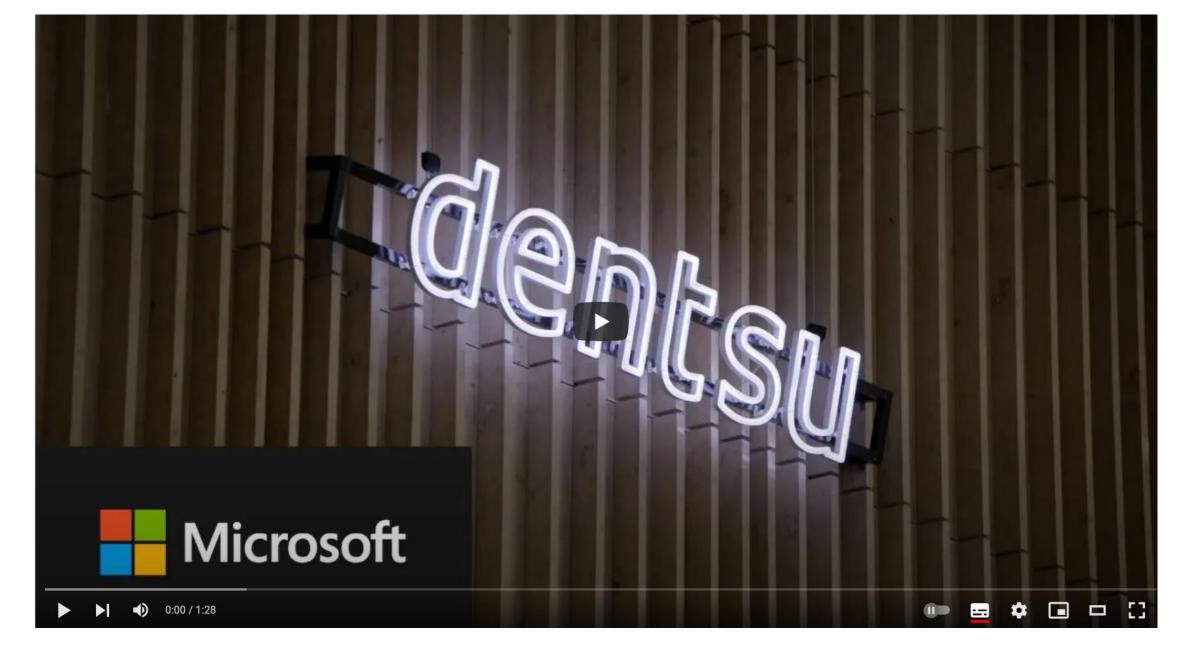
saved time on mundane tasks

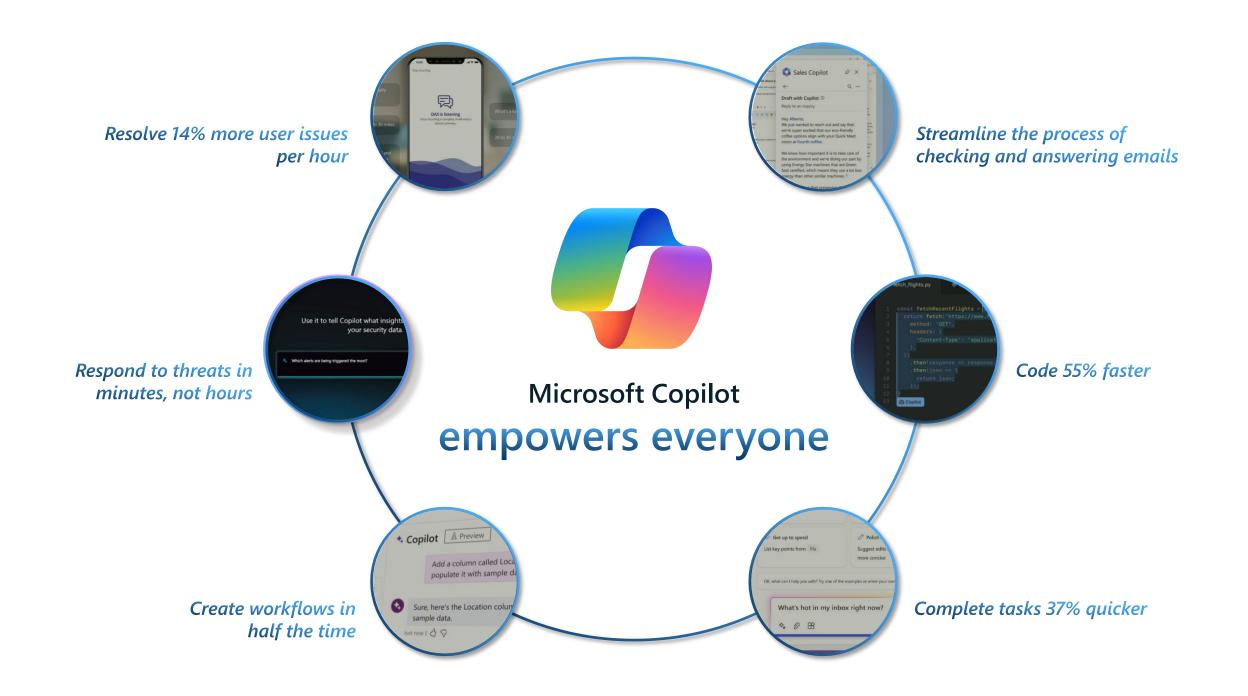
3.5x

faster at catching up on missed meetings

1.2

hours saved on average per week







Microsoft Copilot

Your everyday Al assistant

Enterprise-grade security, privacy, compliance & responsible Al

You are always in control of the output

Your universe of data at work and the web

Azure Al Al you can trust

Our **commercial data protection** applies equally to education as it would for any other industry.

We back use of our Bing Chat Enterprise and Copilot tools with a commercial copyright commitment.



Your Azure OpenAl Service instance is isolated from every other customer



Your data is not used to train the foundation AI models without permission



Your data is protected by the most comprehensive enterprise compliance and security controls

Copilot Copyright Commitment

Use Copilot services with confidence

We stand behind our Copilot customers

We are sensitive to the concerns of authors

Copyright guardrails are built into the product

Build your own AI capability



Customize
Microsoft Copilot

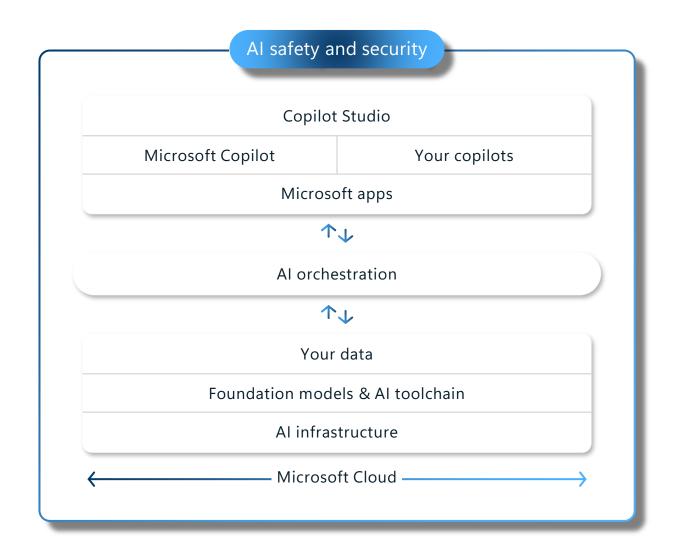


Build your own copilots



Partner with Microsoft partners

Copilot stack

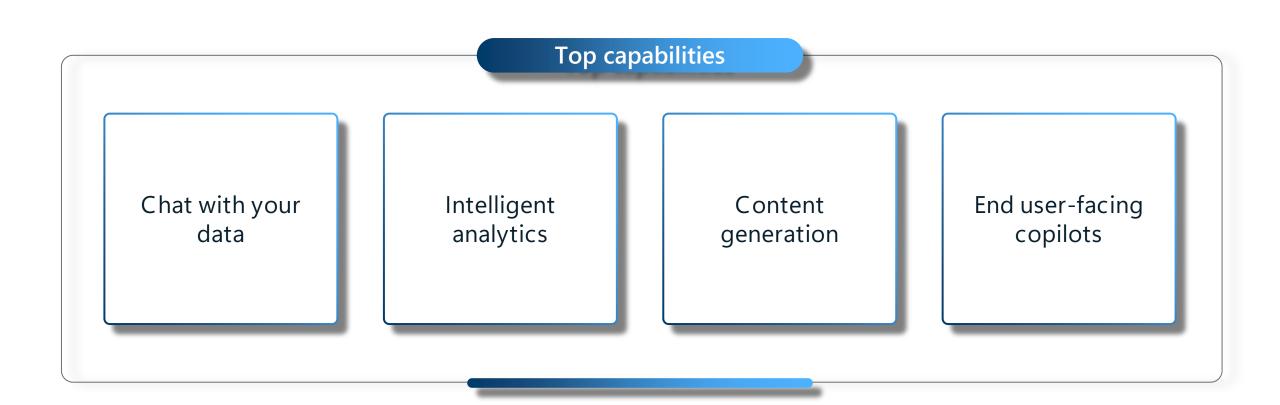


Customize Microsoft Copilot

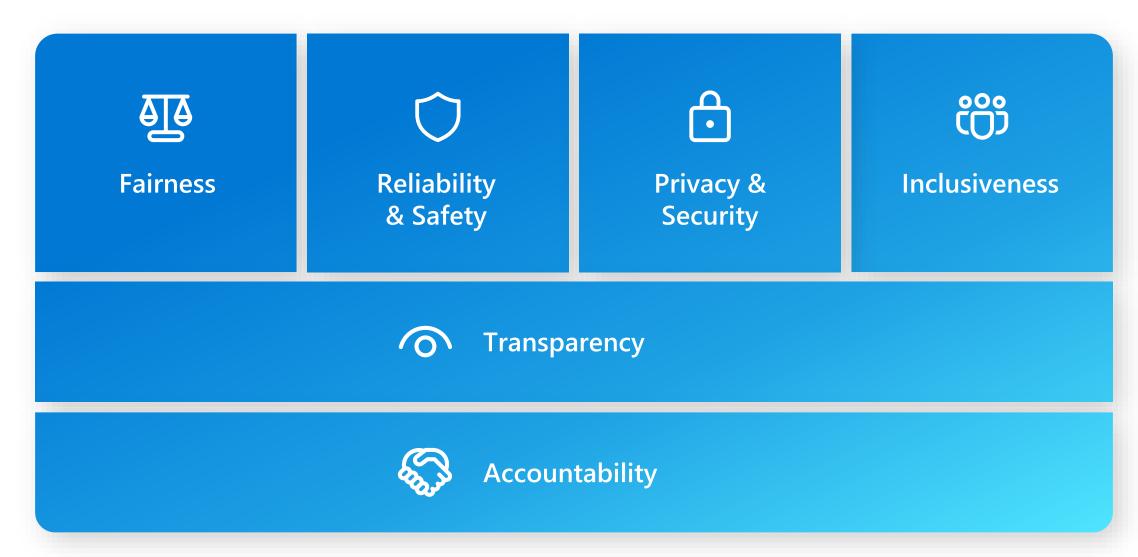
Use cases



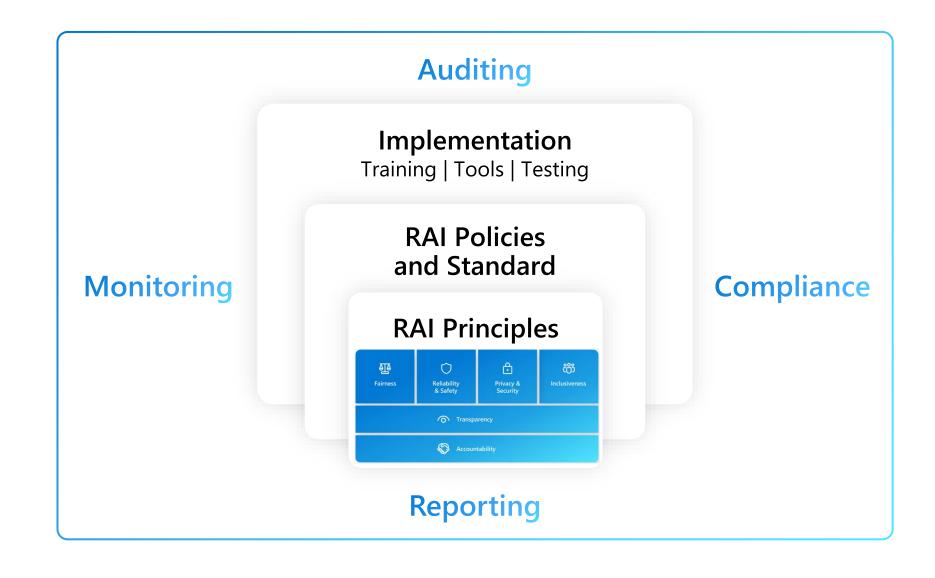
Build your own copilots



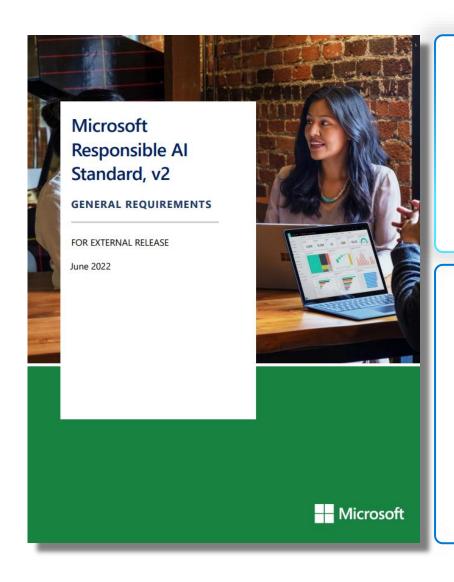
Microsoft's Al Principles



Responsible Al Governance Framework



Microsoft's approach to Responsible Al



Principles

Fairness Reliability & safety Privacy & security
Inclusiveness

Transparency Accountability

Corporate Standard

Goals Requirements Practices **Implementation**

Processes Training Tools **Oversight**

Monitoring Reporting Auditing

UX learnings at Microsoft

Be transparent about Al's role and limitations

- Highlight potential inaccuracies in the Algenerated outputs
- Disclose Al's role in the interaction
- Prevent anthropomorphizing behavior

Ensure humans stay in the loop

- Restrict automatic posting on social media
- Encourage human intervention
- Reinforce user accountability

Mitigate misuse and overreliance on Al

- Cite references and information sources
- Limit the length of inputs and outputs, where appropriate
- Prepare pre-determined responses
- Detect and prevent bots built on top of your product.

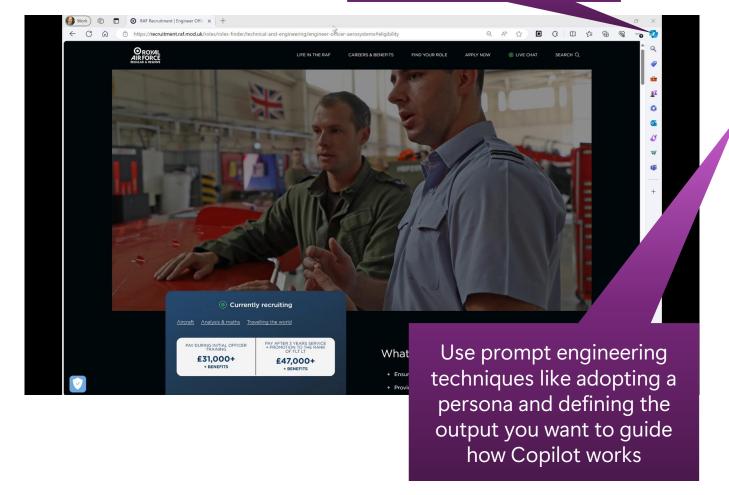
Academic dishonesty considerations

As with any new change in thinking in technology or advent of new tools, we'll need to have conversations about how to best adapt. This will take time and careful consideration as institutions develop updated policies to account for advances in AI. It will be critical to set clear expectations for students.

While detection tools can be helpful, they can also often be inaccurate as it relates to new technology. We do not advise relying on them or using them as the sole factor in decision making that impacts a student or their life opportunities. Human oversight should always be ensured for responsible usage.

Student - Role Application

Launch Copilot via the App icon



Try it:

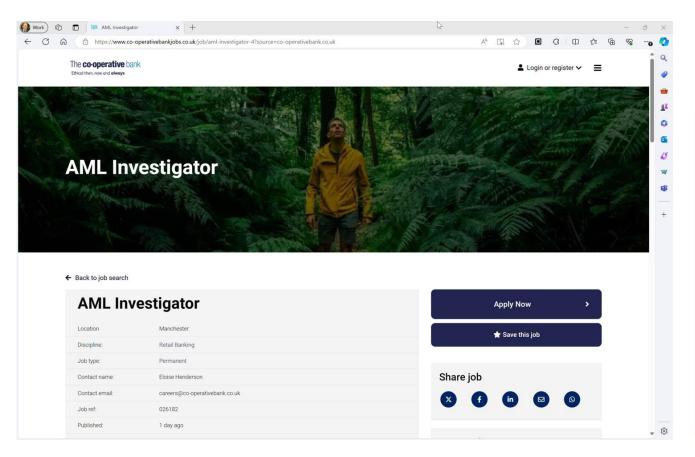
https://recruitment.raf.mod.uk/roles/roles-finder/technical-and-engineering/engineer-officer-aerosystems

Prompt: @this page, summarize the information

Extended conversation: You are a final year student at the university of Manchester studying mechanical engineering. You are on track to finish your degree with a 2.1 classification. In your final year you have worked with a local engineering firm to develop some specialist parts using direct metal laser sintering from titanium powder and this work has been nominated for an Institute of Mechanical Engineers student prize. You have also been playing water polo for the University team and have been active in the Engineering Volunteering and Outreach society as part of the Students' Union. Based on the job description, draft a letter of application.

Further conversation: After doing some research you realise that the role is primarily overseeing the team doing the aerospace system engineering. Write an additional paragraph that references your role as a teaching assistant in workshop practical sessions based on your skills in CAD mill and lathe operation.

Interview Prep



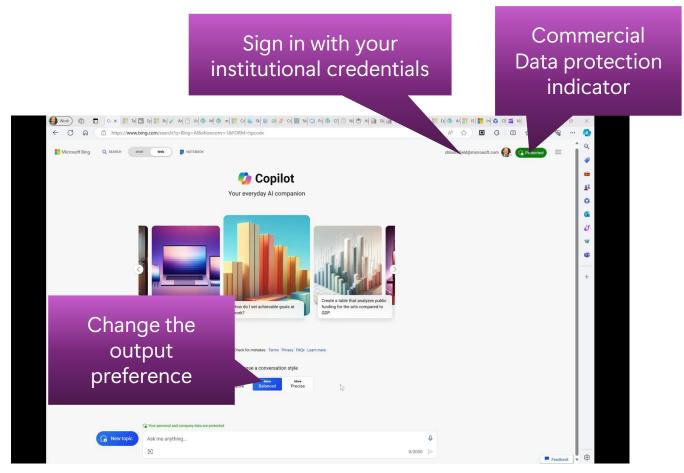
Try it:

https://www.co-operativebankjobs.co.uk/job/aml-investigator-4?source=co-operativebank.co.uk

Prompt: @this page, you have been invited to interview for this role. You know that the interview panel will be the Head of the AML Team, a member of the HR department and a senior manager from the retail banking business. The interview is 45 minutes long. Based on the job description, what are the likely questions that will be asked?

Extended Conversation: Based on this role in the banking industry, what other questions might be asked?

Academic – Lesson Planning



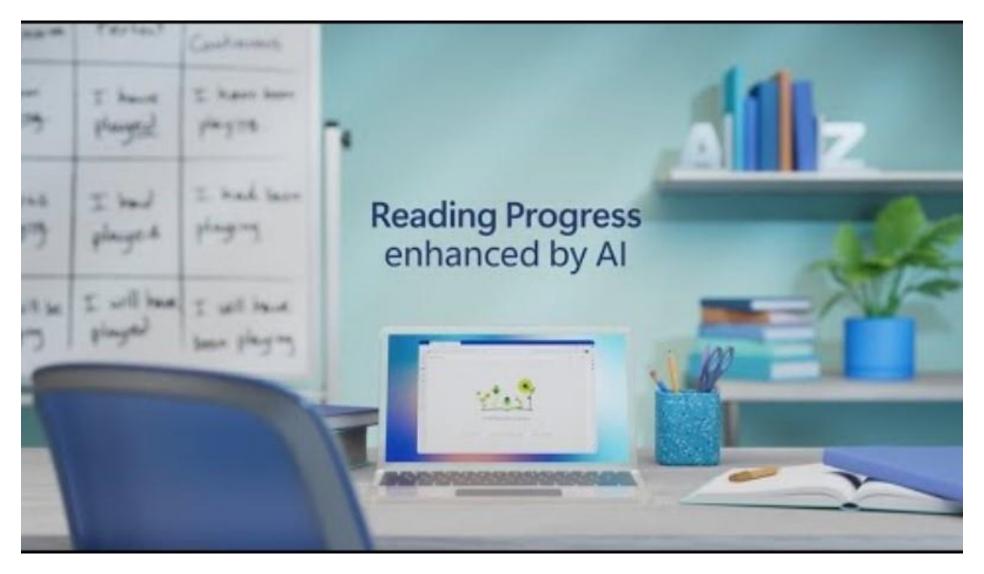
Try it:

Prompt: You are a new lecturer in computer science at The University of Edinburgh. You would like to introduce GitHub Copilot to your students based on recent collaboration with a commercial research partner. Based on the University's published curriculum for the course, identify when would be the best fit in the 3 year programme. Next, generate some inspiration for a lecture on use of GitHub Copilot as a way of demonstrating how coding can be supplemented by Al. Produce a lecture plan for a 45 minute class including details of how students can access GitHub Copilot to support their work – this should be a bulleted list with approximate timings. After completing the lesson plan, summarize the learning outcomes. Finally, provide some suggested further reading.

Extended conversation: Can you find any academic papers that have evaluated the impact of GitHub Copilot?

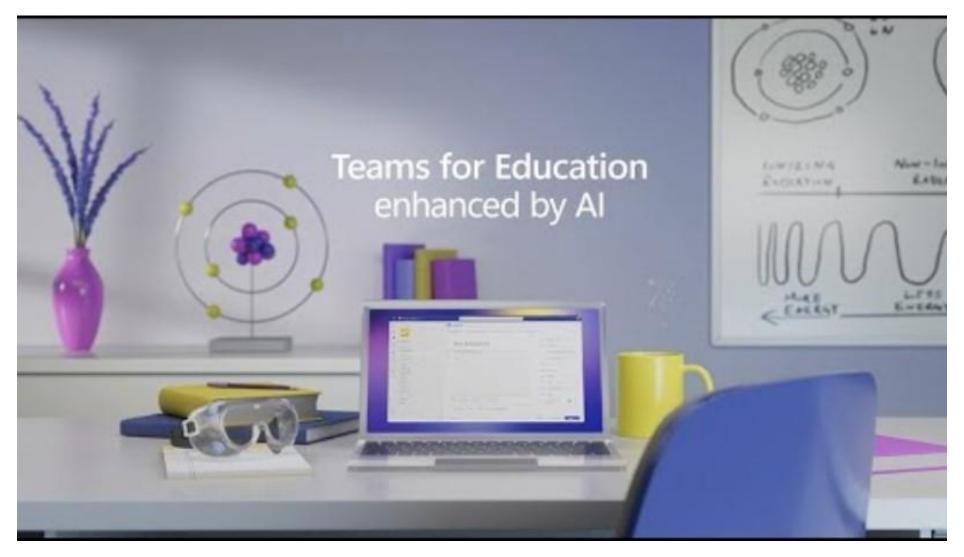
Further conversation: Can you produce an inspiring image for GitHub Copilot?

Personalizing learning with Al-powered technology



https://www.youtube.com/watch?v=LloFa72h0AQ

Empowering educators with Al-powered technology



https://www.youtube.com/watch?v=ZRH1cgNGmlM

Copilot for Microsoft 365 is transforming work

60%

of leaders say a lack of innovation or breakthrough ideas is a concern

64%

of people have struggled with finding time and energy to get their work done

70%

of people indicated they would delegate as much as possible to Al to lessen their workloads



68%

said Copilot improved the quality of their work

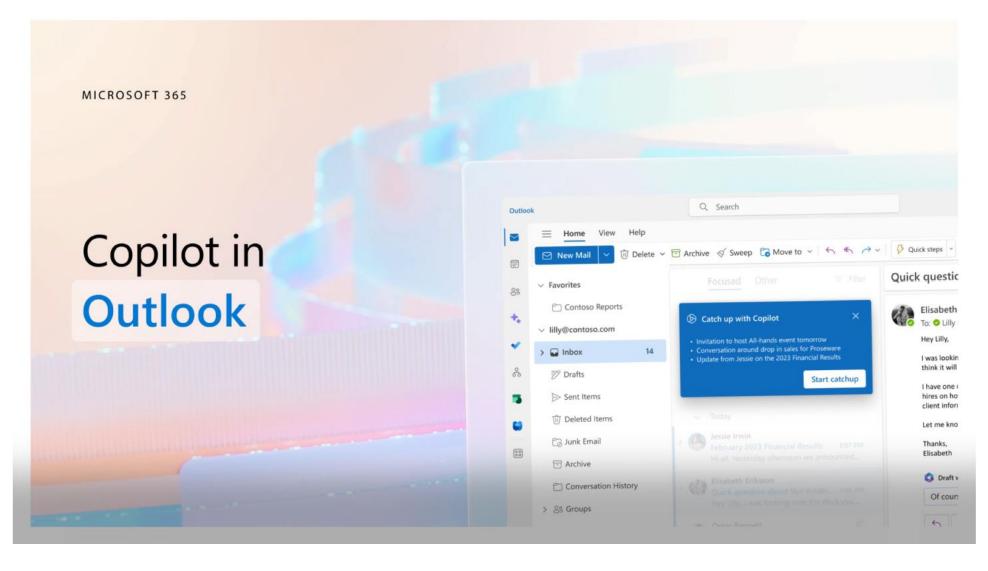
70%

said Copilot made them more productive

77%

said they didn't want to give Copilot up

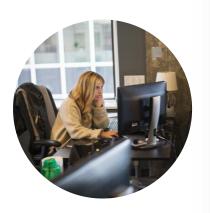
Microsoft 365 Copilot in Outlook



Many opportunities to improve efficiency

Key trends as educational institutions prepare for the next era of education

Create agile, resilient infrastructure



Mitigate cyber risk



Leverage data for student success



Focus on the mission, not the mundane



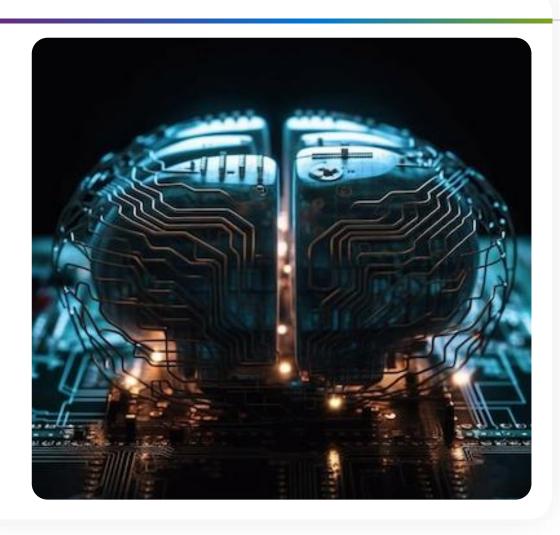
Harness power of AI & ChatGPT



Opportunity for continued IT upskilling and career growth

Benefit from Microsoft's massive scale Shared threat data from Microsoft Intelligent Security Graph partners, OneDrive researchers, and **5B** Outlook law enforcement worldwide threats 0 🗹 detected on devices every 400B month 6.5B emails threat signals analyzed 200+ analyzed daily Botnet data global cloud consumer from Microsoft Azure and commercial **Digital Crimes** Windows services Unit Microsoft accounts Enterprise security Bing 18B+ 1B+ for **90%** of Bing web 450B Fortune 500 Azure user pages monthly accounts scanned **Xbox Live** authentications

Innovate at speed and scale



Challenge

Institutions are looking to harness the power of AI, but newer technical advances such as ChatGPT pose opportunities as well as risks

Solution

Transform processes and tasks with Azure Open Al

Benefits

- Drive fundamental research and operational breakthroughs
- Responsible use of Al
- Your data is not used to train the OpenAl foundational models without your permission

Yale School of Medicine



Challenge

The Tietjen Lab at the Yale School of Medicine needed faster research processes and infrastructure to make the most of every organ donated.

Solution

The lab relies on Azure Functions to automate initial processes through event-driven serverless code. This allows for automatic processing of tissue data in a seamless and reliable fashion.

Benefits

With newfound efficiency, the lab can collaborate and make life saving decisions in real time, improving the viability of kidneys used in transplants and reducing organ waste.



GG

We need partners that can help us build the infrastructure to go really fast so we can fully honor every donor organ. The partnership with Microsoft and Terawe has revolutionized our approach and our thinking."

Dr. Greg Tietjen
 Assistant Professor and Principal Investigator

Al can transform education



53% of educator skills need to be performed by humans, 45% could be augmented by AI For every \$1 an organization invests in AI, it is realizing an average return of

\$3.42



of leaders say people will need new skills to prepare for Al



How you can get started today

Grow Al literacy and skills across your organization

Try Microsoft's AI solutions in action

Ensure an Al-ready data foundation

Build your own Al-powered copilot

Learnings

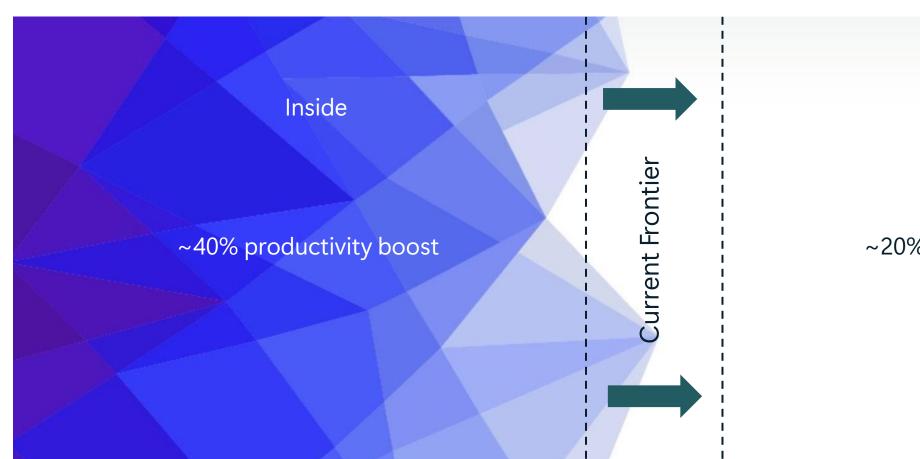
- Meaning in the name
 - Copilot, not autopilot.
 - Use the Enterprise environment.
- Rather than a PA, think about it as an intern
 - Highly capable, learns fast but needs pointing in the right direction and clear instruction.
 - Iterate if your first request doesn't give the output you needed.
- Work evolved to validation
 - Sign off on the outputs before releasing them under your name.
 - · Check sources.
 - Your skilled workers need to continue to validate Al using their expert judgement.



Jagged Technological Frontier



Dell'Acqua et al. (2023) Field Experimental Evidence of the Effects of AI on Knowledge Worker Productivity and Quality



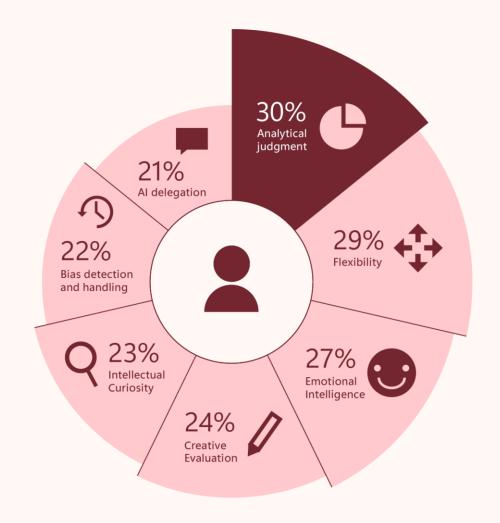
Outside

~20% productivity loss

Prepare for the future

82% of business leaders say employees will need new skills to prepare for Al.

Learning to work alongside AI is not just about building technical capacity. It will be necessary to prioritize people skills, and new analytical, emotional, and critical thinking skills.



Source: Microsoft Work Trend Index: Annual Report (May 9, 2023)
Survey question: Some believe that it is likely that artificial intelligence (AI) will usher in a new era of technological advancements. Which of the following skills do you think will be most essential for your employees to learn to evolve with these potential changes?

A Student Guide to Generative Al

"There...are ways to use generative AI effectively and appropriately. This is a skill that universities have recognised they should be imbuing in their graduates. That is the focus of this course."

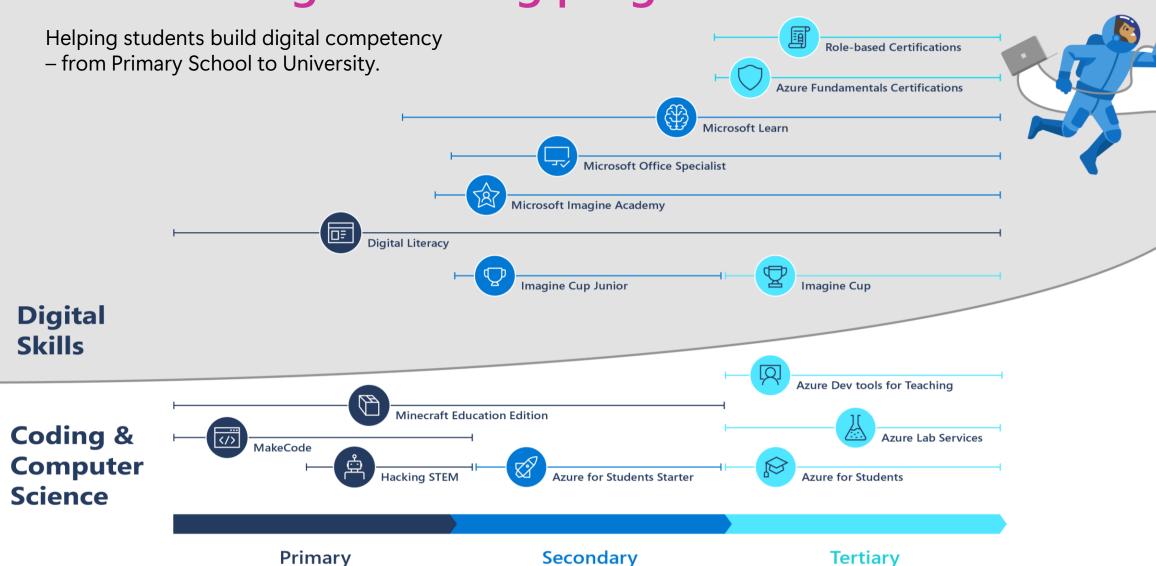
Dr Malcolm Murray DCAD, Durham University



Microsoft digital skilling programs

Spark curiosity with STEM, computer

science and give purpose to learning



Secondary

Build productivity skills and grow

competence in new technologies

Tertiary

Drive employability with

role-based and technical skilling

aka.ms/AlforEducators

New, free Microsoft Learn course

Less than one hour

Aligned to ISTE and UNESCO Standards for Education



Al Trainings and Resources

For students	For educators	Adoption materials	Microsoft Al fundamentals	Learn more
<u>Al Foundations</u>	Empower educators to explore the potential of artificial intelligence	<u>Microsoft Copilot</u>	<u>Introduction to</u> generative AI	Expanding Microsoft Copilot access in education
Minecraft Hour of Code: Generation Al	Enhance teaching and learning with Microsoft Copilot	Copilot for Microsoft 365	Introduction to the Azure OpenAl Service	<u>Microsoft's approach to</u> <u>Al</u>
<u>Intro to Al</u> with Minecraft	<u>Al Classroom Toolkit</u>	Explore generative Al with Copilot	<u>Responsible</u> <u>Generative Al</u>	<u>Responsible Al</u>
<u>Al for Earth –</u> <u>Minecraft lessons</u>	Facilitate the Hour of Code: Generation Al	Copilot Prompting Toolkit	Azure Al Fundamentals	<u>Copilot Lab</u>
Al for Good Hour of Code - Minecraft	Prepare to teach Azure Al Fundamentals	Al Builder Prompt engineering guide	Identifying principles and practices for responsible AI	<u>TeachAl Toolkit</u>



Thank you

Further information:

Dr Cris Bloomfield Senior Education Industry Architect Microsoft Industry Solutions

cbloomfield@microsoft.com

Prompt:

In the style of Frank E Jamieson create an image of a sunset over the river Thames in London

