ExplanAItions

An AI study by **WILEY**
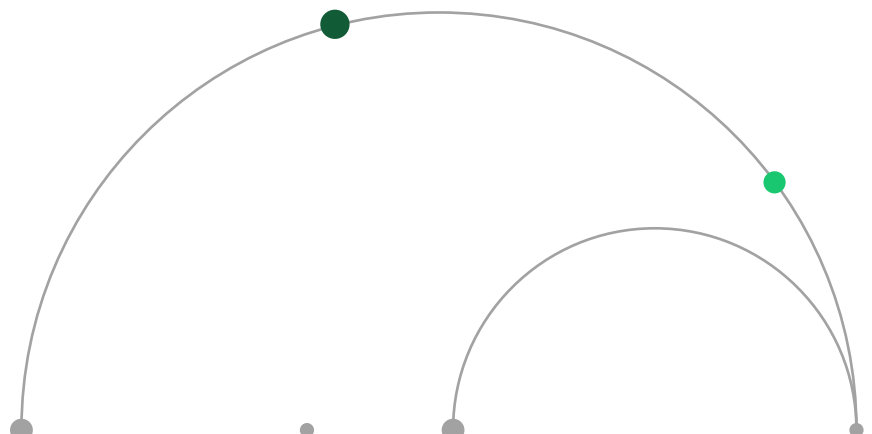
Contents

Foreword

We're at the beginning of a transformative new era. Artificial intelligence (AI) is poised to reshape the way people discover, learn, and work, bringing with it exciting new opportunities as well as complex challenges.

For over two hundred years, Wiley has been at the center of the creation and dissemination of knowledge, moving the world forward and driving positive change. Our work has been pivotal from the industrial revolution to the information age, and we've remained at the forefront by embracing innovation while keeping our customers, authors, and partners at the center of everything we do. As we move forward into this new era, we're committed to working with our customers, partners, authors, and communities to lean into AI, develop new technologies, and together shape the way AI solves real-world problems.

ExplanAItions is a different kind of study—one that goes beyond sentiment around AI to look deeply at how researchers use and apply it. It explores where interest and technological capabilities align and identifies opportunities for further exploration. Based on feedback from almost 5,000 researchers, this comprehensive study provides real data both on current and potential use cases for AI by authors. It quantifies key statistics around each use case, assessing interest and usage and evaluating where AI might outperform humans. And it uncovers what researchers want from publishers in terms of guidelines, training, and policies.

In sharing this study, we want to help you put our insights into action—to explore opportunities and imagine future possibilities together. And while we'll continue to use AI to better communicate scientific discovery and learning, in keeping with our AI principles, human creativity, critical thinking, and ethics will always remain at the heart of what we do.

Working with you and across the communities we serve, we're building a shared vision for responsible and impactful AI. We hope you enjoy exploring the results of this study and that it's helpful as you continue to develop your own thinking and plans in AI.

Matthew Kissner
President & CEO
Wiley

Executive Summary

As artificial intelligence increasingly makes its impact felt across the publishing industry, we set out to discover how researchers are currently using it, and how they might be interested in using it in the future. In a study of nearly 5,000 researchers, *ExplanAItions* asks about specific use cases in order to gain real insights researchers can put into practice, as well as looking at what role scholarly publishers might play in an AI-augmented future.

Read on to explore the key takeaways and emerging themes from this seminal study.

Current state: Researcher uses, needs, and expectations for AI

AI use is currently limited among researchers, who say lack of guidance is a major barrier to its greater adoption.

- **Among researchers, current use of AI is fairly limited, both in terms of tools used and tasks done.** When asked which generative AI tools they'd heard of prior to the survey, most had heard of and used or tried Open AI's ChatGPT, but few were familiar with other tools.

- **Despite limited current use, researchers know that developing AI skills will be highly important to them personally in the near future. 69%** think it will be at least somewhat important in the next two years, and within five years over half of researchers think AI skill building will be very important.

- **Uncertainty is a major barrier to researchers making the most of AI's potential.** When asked what barriers or obstacles were preventing them from using generative AI in their work to the extent that they'd like, **63%** selected a lack of clear guidelines and consensus on what uses of AI are accepted in their field and/or the need for more training and skills.
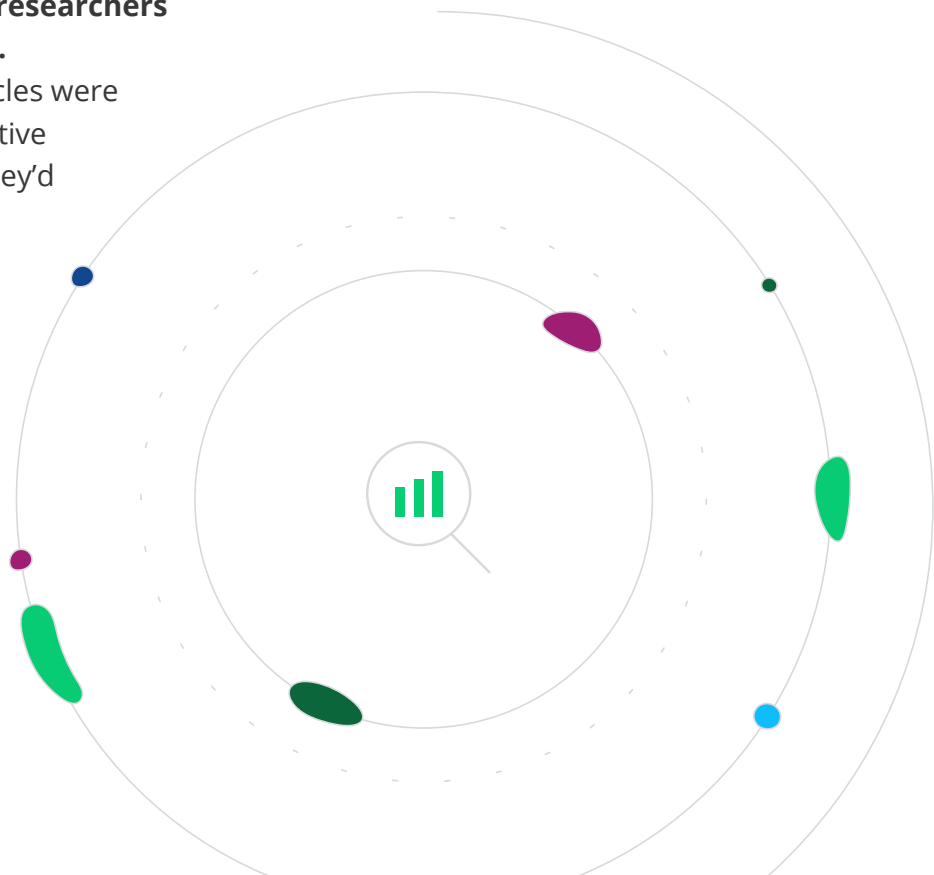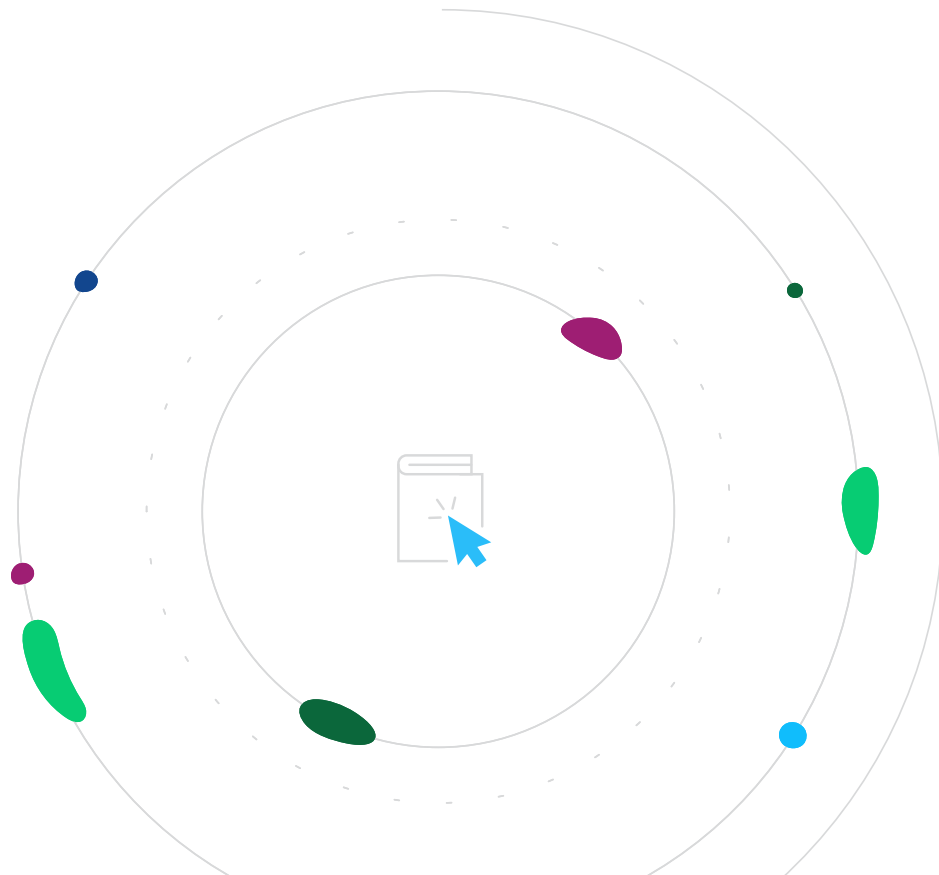
Executive Summary

Exploring AI use cases to get to actionable insights

To go beyond sentiment and surface trends around AI – and gain some practical insights to guide researchers in taking action – we collected input on a total of 43 potential AI use cases across the research process. In addition to specific insights into individual use cases, this yielded some macro-level trends:

- **Researchers have strong interest in using AI in a wide variety of ways:** For 39 of the 43 use cases tested, a majority of researchers were interested in personally using generative AI in the near future. This suggests that the relatively limited use of AI observed among researchers to date is not due to a lack of interest.

- **Researchers already consider AI to be capable of taking on many tasks:** For over half of the use cases tested (23 out of 43), a majority of researchers already believe AI outperforms humans. This shows that, while researchers do have some concerns about the models themselves, they also have a favorable view of the available generative AI technology and can envision a lot of possibilities for current use.

- **Researchers anticipate wide and fairly rapid acceptance of AI:** Most use cases (34 out of 43) are expected to have widespread acceptance and approval within the next two years. This suggests that researchers expect AI usage in research to accelerate considerably in the next two years from its current relatively low levels.

- **Even researchers who want to be later adopters of AI show strong interest in personally using AI and expect acceptance to progress rapidly:** Most later adopters are personally interested in using AI for close to half of use cases (18 out of 43) and expect over half of use cases (25 out of 43) to achieve broad acceptance in the next two years. This highlights that even researchers who are less enthusiastic about AI still expect that they will need to adapt to increasing AI use within the next couple of years.
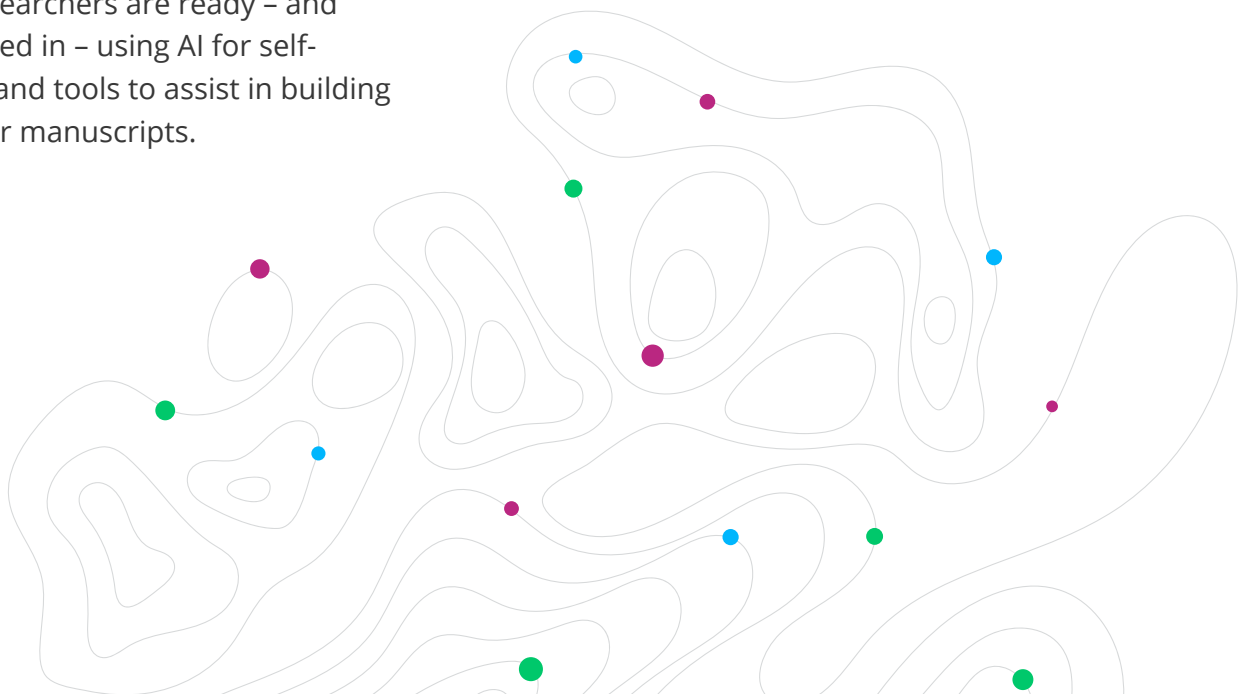
Executive Summary

Mapping the consensus view of AI use cases

To better understand and visualize the potential for each of our 43 AI use cases, we focused on two key dimensions: interest and AI vs. human performance. Mapping use cases from each step of the researcher's journey to quadrants based on these metrics revealed additional insights about the role of AI in the research process.

- **Determining what to research:** When deciding what to research, researchers are ready to use AI to review large bodies of information but are largely in agreement that the technology isn't yet ready to anticipate new developments in their field.

- **Conducting the research:** Use cases in this phase of research were generally less interesting to researchers; however, again, they are ready to use AI for use cases relating to handling large amounts of information.

- **Preparing for publication:** This phase of research has many highly popular current use cases, showing that researchers are ready – and interested in – using AI for self-checks and tools to assist in building out their manuscripts.

- **Peer review:** In contrast to preparing for publication, researchers currently prefer humans over AI for the majority of peer review-related use cases—a strong indication that they want human judgment to remain central to the peer review process.

- **Promoting and sharing an article:** Researchers view AI as being able to outperform humans in many post-publication tasks. However, researchers tend to be less interested in these applications of AI, with the exception of use cases related to increasing the accessibility of their work.

Executive Summary

The Wiley AI Framework – Our recommendations to the researcher community

Based on the data from the survey, we've created a framework to help researchers explore the potential for AI to serve them in their research. The framework provides a simplified set of recommendations to help the research community think about how they might put AI into action, now, and in the future.

Act: Current use cases where AI is already poised to make a difference and interest is high.

Manuscript preparation and writing assistance	Handling large information sets	Research accessibility and sharing
On average, **72%** of researchers are interested, and **62%** say AI outperforms humans. Includes use cases such as self-checks for errors/bias and plagiarism, writing assistance, automatic submission, and populating citations.	On average, **67%** are interested, and **60%** say AI outperforms humans. Includes reviewing large amounts of studies, monitoring new publications, a custom GPT for their field, and data collection, processing, and visualization.	On average, **65%** are interested and **58%** say AI outperforms humans. Includes generating plain language summaries and knowledge management agents.

Watch: Near-term opportunities with high interest and growing AI capabilities.

Generating predictions and recommendations	Offloading essential but less engaging work
On average, **64%** are interested but **56%** say humans lead or match the abilities of AI. Includes use cases for predicting trends and identifying gaps in the literature, and generating recommendations for references, journal selection, and peer reviewers.	On average, **58%** are interested in using, and **57%** say humans lead or match the abilities of AI. Includes handling administrative tasks and finding and applying for funding opportunities.

Envision: "Stretch" and ambitious use cases that are not yet feasible or strongly desired but have the potential to address future needs.

AI to enhance research methods and collaboration	Automated content generation for increasing article reach and impact	AI-augmented peer review processes
On average, **54%** are interested and **58%** say humans lead or match the abilities of AI. Includes use cases such as writing up documentation, identifying collaborators, and optimizing experimental design.	On average, **53%** are interested, and **51%** say humans lead or match the abilities of AI. Includes generating multimedia to broaden interest in article, generating educational content based on article, and generation of video abstract/explainer.	On average, **56%** are interested and **59%** say humans lead or match the abilities of AI. Includes adapting reviewer feedback into standardized format, peer reviewer recommendation tool, and increase the speed and ease of peer review.

Executive Summary

We will continue to track these trends to understand where AI is ready to go, where it needs work, and where human expertise and capability cannot be substituted.

The role of scholarly publishers in navigating an AI-augmented future

Our data shows that there is currently no strong consensus among researchers on where to go for guidance in using AI, apart from close colleagues. However, when we asked specifically about the role of the publisher, there's a strong desire for publishers to help researchers in navigating their AI journey.

- **70%** of researchers want publishers to provide clear guidelines on which uses of AI are acceptable when publishing scholarly research.

- **69%** want publishers to help avoid potential pitfalls, errors, and biases.

- Over half want publishers to share best practices and guidance for safe and responsible use of AI.

With nearly two-thirds of researchers also citing a lack of guidance and training is preventing them from using AI to the extent that they would like, it's not surprising that researchers view this as a key role for publishers to play.

While researchers may not think of publishers as their first line of support in using AI, this study shows that publishers need to be proactive in creating policies and guidelines and in communicating them to the research community.
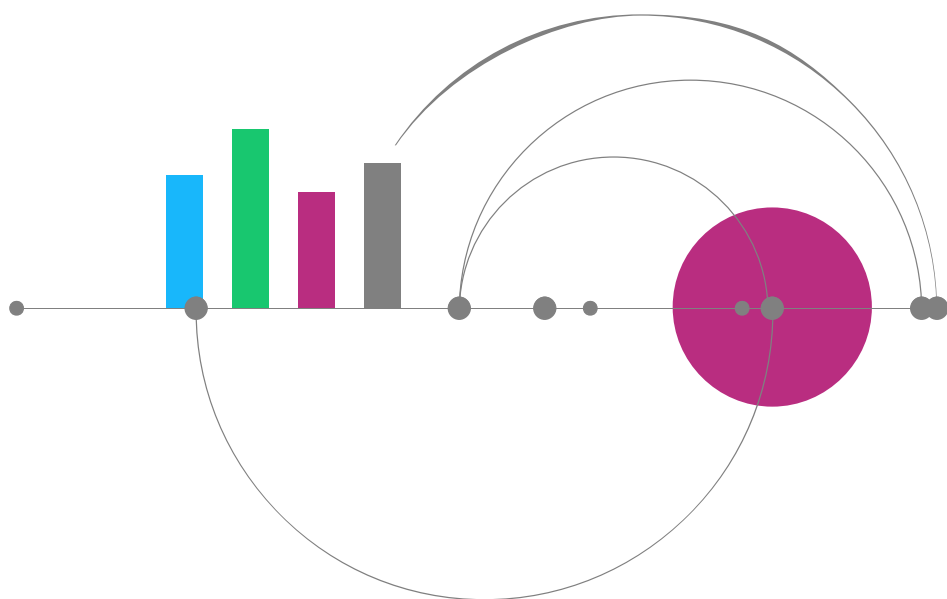
Methodology

The aim of this study is to provide data that helps the research community understand how journal authors are thinking about and implementing AI. Key statistics around each select AI use case are quantified, including:

- Level of interest
- Usage
- How long before use cases become mainstream/commonly accepted in the field
- Perceptions of AI vs. human performance

We also set out to understand what help researchers are looking for when it comes to navigating AI, and the role they would like publishers to play.
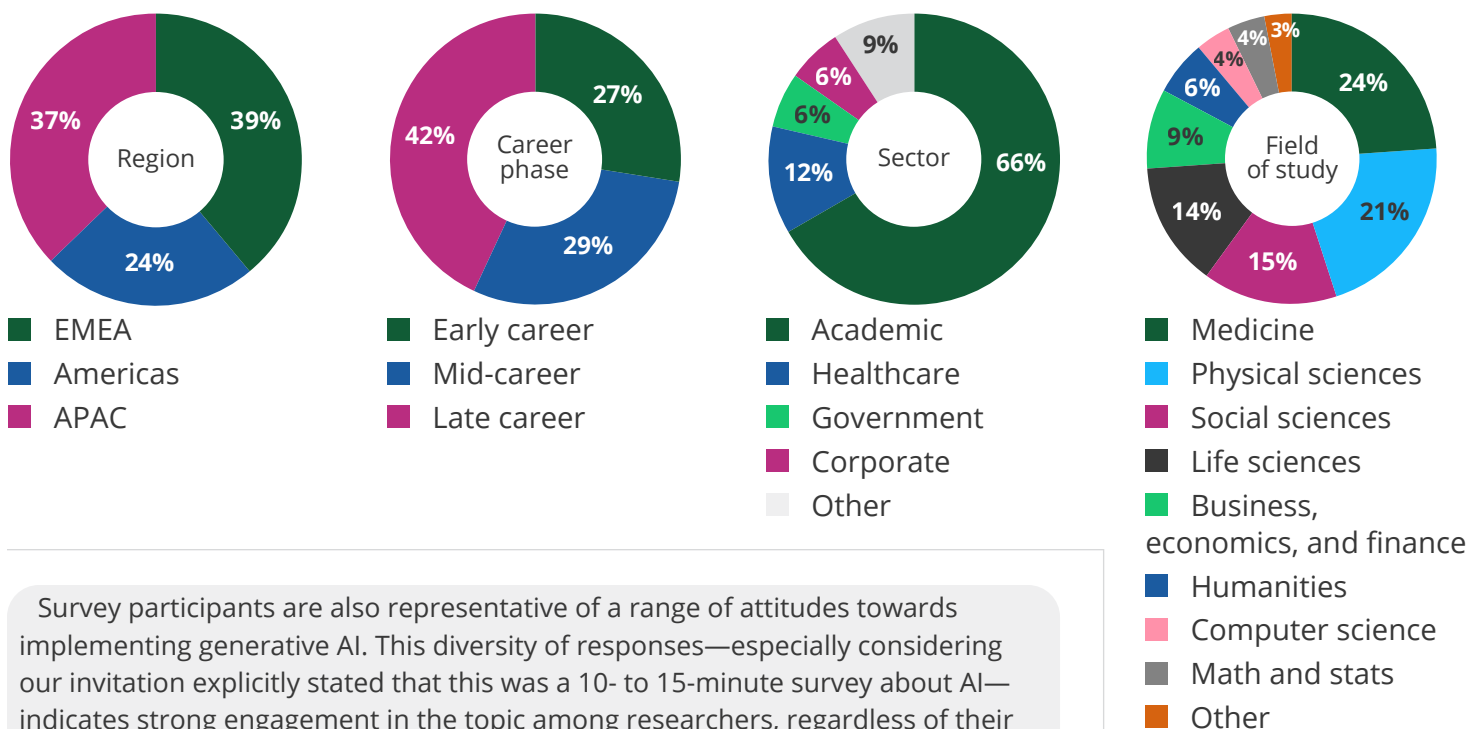
ExplanAItions: a snapshot

ExplanAItions: GenAI Perceptions, Attitudes, and Behaviors	ExplanAItions: AI Use Cases Deep Dive
When: March 21 to April 11, 2024 **What:** Online survey sent via email invitation **Who: 1,043** responses from a range of disciplines and countries	**When:** August 13 to September 6, 2024 **What:** Online survey sent via email invitation **Who: 4,946** responses from a range of disciplines and countries

As a thank you for participating in the survey, Wiley donated funds to plant trees for each response to **One Tree Planted**, a global charity supporting reforestation and biodiversity initiatives. Wiley has donated funds to plant 21,780 trees due to strong participation in the *ExplanAItions* surveys.

Our survey participants were researchers representing a wide range of disciplines, geographies, career phases, and sectors. Nearly all (**96%**) have previously submitted an article for publication and/or are planning to do so in the near future.
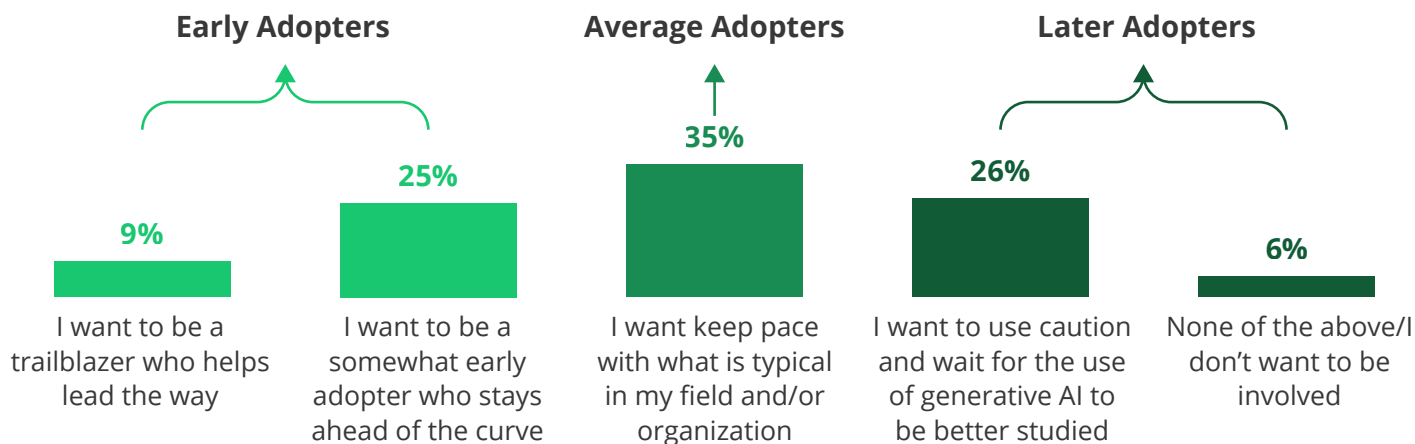
Methodology

Region
- 39% EMEA
- 24% Americas
- 37% APAC

Career phase
- 27% Early career
- 29% Mid-career
- 42% Late career

Sector
- 66% Academic
- 12% Healthcare
- 6% Government
- 6% Corporate
- 9% Other

Field of study
- 24% Medicine
- 21% Physical sciences
- 15% Social sciences
- 14% Life sciences
- 9% Business, economics, and finance
- 6% Humanities
- 4% Computer science
- 4% Math and stats
- 3% Other

Survey participants are also representative of a range of attitudes towards implementing generative AI. This diversity of responses—especially considering our invitation explicitly stated that this was a 10- to 15-minute survey about AI—indicates strong engagement in the topic among researchers, regardless of their opinions of the technology,

Source: ExplanAItions AI Use Cases Deep Dive n=4,946

Q: Which of the following best describes the part you want to play in the adoption of generative AI in your work, whether at your institution/organization and/or among members of your field of study?

Early Adopters
- 9% I want to be a trailblazer who helps lead the way
- 25% I want to be a somewhat early adopter who stays ahead of the curve

Average Adopters
- 35% I want keep pace with what is typical in my field and/or organization

Later Adopters
- 26% I want to use caution and wait for the use of generative AI to be better studied
- 6% None of the above/I don't want to be involved

Source: ExplanAItions AI Use Cases Deep Dive n=4,946

More likely to be an early adopter:
- Computer science **(44%)** and medicine **(38%)** researchers
- Researchers in the corporate **(42%)** and healthcare **(38%)** sectors
- Early career researchers **(39%)**

More likely to want to keep pace with the average:
- Business, economics, and finance researchers **(42%)**
- Researchers in the academic sector **(36%)**

More likely to want to be a later adopter and take a more cautious approach:
- Life sciences **(38%)** and physical sciences researchers **(34%)**
- Late career researchers **(34%)**
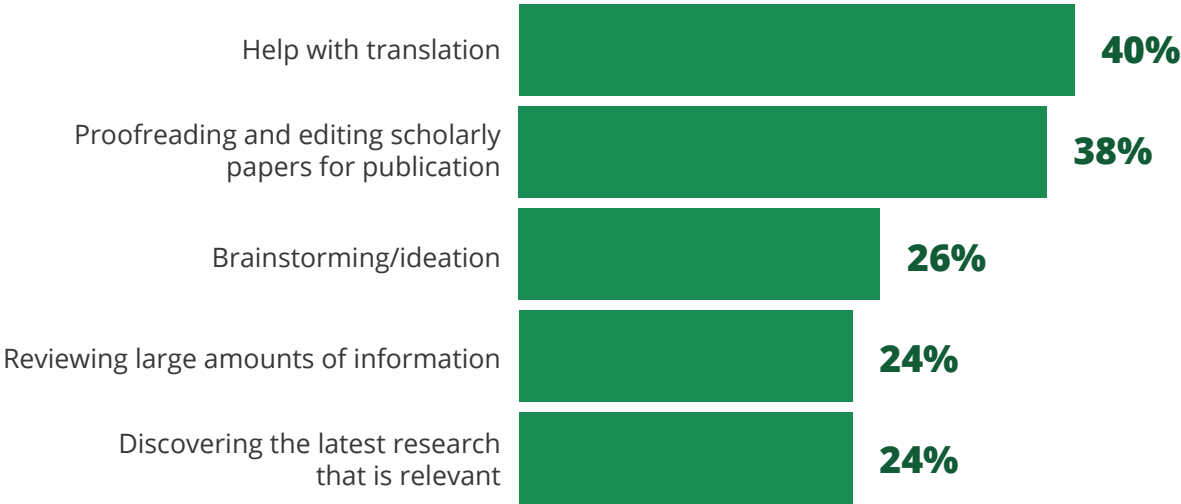- Researchers in the government sector **(34%)**

AI use is limited, and a lack of guidance is hindering its adoption

Among researchers, current use of AI is fairly limited, both in terms of tools used and tasks done. When asked which generative AI tools they'd heard of prior to the survey, most had heard of (**90%**) Open AI's ChatGPT. However, after ChatGPT, familiarity drops off precipitously. For the second and third most well-known tools, Google Gemini and Microsoft Copilot, only about one-third of researchers had heard of them (**33%** and **32%** respectively), and many fewer had used them. Awareness and usage of other AI tools such as Claude, Llama, and Perplexity.ai were much lower.

Overall, about 45% of researchers say they have already used AI at some point in their research process. Current use of AI among researchers is also somewhat fragmented, with fewer than half of researchers currently using AI for any of the top five uses. Use of AI tools tends to be focused around writing tasks such as translation and proofreading, with very few researchers using them for administrative tasks or post-publication support.

Top five ways respondents are currently using generative AI tools in their work

Use	Percentage
Help with translation	40%
Proofreading and editing scholarly papers for publication	38%
Brainstorming/ideation	26%
Reviewing large amounts of information	24%
Discovering the latest research that is relevant	24%

Source: ExplanAItions GenAI Perceptions, Attitudes, and Behaviors, n=1,043

Who's more likely to have already used AI in the research process?
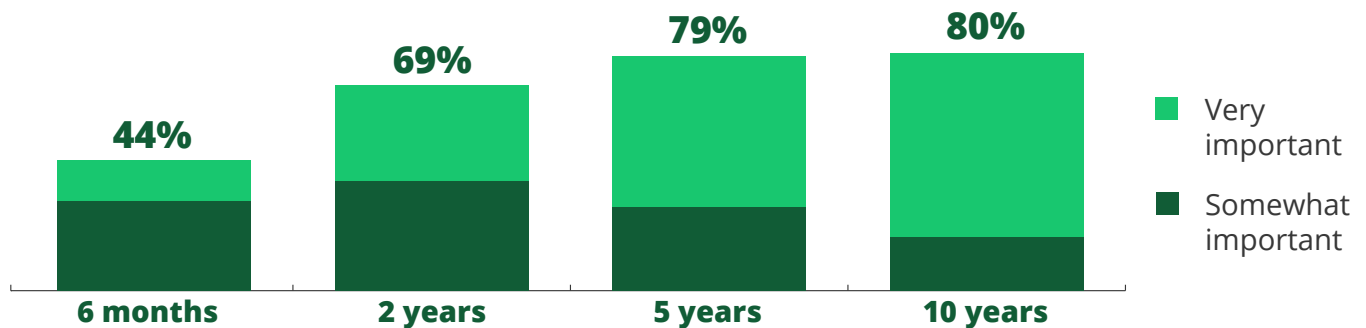
- Researchers in China **(59%)** and Germany **(57%)**
- Early career researchers **(57%)**
- Computer science **(57%)** and business, economics, and finance researchers **(55%)**

Current state:
Researcher uses, needs, and expectations for AI

Despite limited current use, researchers know that developing AI skills will be highly important to them personally in the near future.

Q: How important do you expect developing AI skills/familiarity to become for researchers in your field in the next...

Legend:
- ■ Very important (light green)
- ■ Somewhat important (dark green)

Bar chart:
- 6 months: 44%
- 2 years: 69%
- 5 years: 79%
- 10 years: 80%

Source: ExplanAItions GenAI Perceptions, Attitudes, and Behaviors, n=1,043

However, researchers aren't currently finding the help they need to expand their implementation of AI. A large proportion —about **40%** to **50%** — are unfamiliar with training, policies, and best practices for using generative AI. **41%** are unsure about what kinds of generative AI tools are even available.

Uncertainty is a major barrier to researchers making the most of AI's potential.

Current state:
Researcher uses, needs, and expectations for AI

When asked what barriers or obstacles were preventing them from using generative AI in their work to the extent that they'd like, **63%** selected a lack of clear guidelines and consensus on what uses of AI are accepted in their field and/or the need for more training and skills.

This finding, coupled with the fact that **81%** of researchers have one or more core concerns about the AI models themselves—around ethics **(54%)**, a lack of transparency in how they work/are trained **(46%)**, level of accuracy **(51%)**, and/or information security/privacy **(47%)**—highlights the significant obstacles researchers face in increasing their use of AI.

More likely to be hindered by a lack of clear guidelines and training:

- Medicine **(69%)** and business, economics, and finance researchers **(67%)**
- Researchers in the healthcare sector **(68%)**
- Late career researchers **(66%)**
- Researchers in the Europe, Middle East, and Africa regions **(65%)**

More likely to be hindered by concerns about the AI models themselves:

- Researchers in Japan **(88%)** and China **(84%)**
- Social sciences researchers **(86%)**
- Researchers in the academic sector **(83%)**

While these insights are useful, they're not altogether surprising. Researchers are telling us that AI will increase in importance in the coming months and years, but they don't yet have the confidence to implement it in a wide range of tasks due to a lack of training and guidance. Given the potential risks and impacts to future research and discoveries, this present lack of confidence is a major roadblock to making AI an integral part of the research process for most researchers. Given our present reality, how can we start moving toward a future that is widely augmented—if not transformed—by AI?
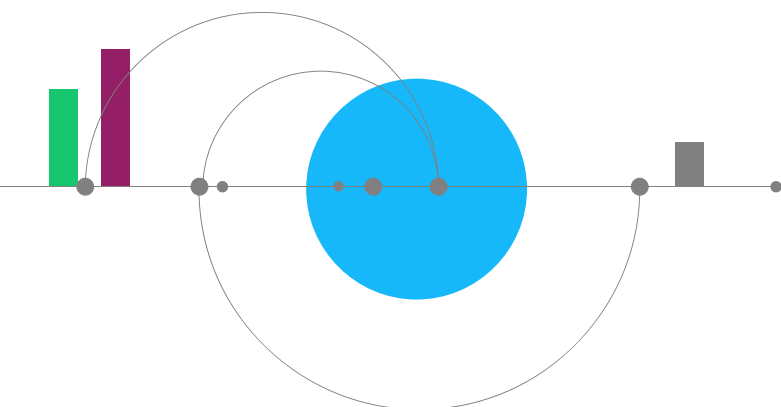
Exploring AI use cases

In order to go beyond sentiment and surface trends around AI – and gain some practical insights to guide researchers in taking action – we collected input on a large range of potential AI use cases across the research process.*

Use cases by phase in the research process

Determining what to research	• Reviewing large amounts of published and pre-print studies • Identifying potential collaborators • Assistance in writing funding applications • Identifying gaps in the literature • Custom GPT/ library of info. tailored to your area of study	• Fraud/plagiarism detector when reading articles • AI agent to monitor funding opportunities • AI agent to monitor/ summarize key new publications in your field • Tool to predict trends/future milestones in field • Assessing others' articles for quality, bias, etc.
Conducting the research	• Data collection and processing • Optimizing experimental design • Assistance writing code • Writing up documentation • Advanced simulations that reduce the need for some bench research	• Automated processing of unstructured data (e.g., cataloging events in hours of video footage) • Personalized lab safety analysis/ training tailored to research • Tools to optimize allocation of shared resources (e.g., lab equipment) • Handling administrative tasks
Preparing for publication	• Writing assistance (copyediting, translation, etc.) • Generating reference recommendations • Populating citations (e.g., filling in references, ensuring proper formatting) • Detecting errors or bias in own writing • Creating an article abstract	• Data visualization tools (e.g., chart generator) • Checking own work for unintended plagiarism • Journal selection tool based on content of article draft • Automatic formatting tool to comply with submission guidelines

Exploring AI use cases

Peer review	• Identifying peer reviewers with relevant expertise • Increasing speed and ease of peer review • Adapting reviewer feedback into standardized format • Assistance in peer reviewing others' articles	• Peer reviewer recommendation tool based on article comparisons • Automated feedback to reviewers to ensure clarity in reviews
Promoting and sharing the article	• Creating "plain language" summaries of article findings • Generating multimedia to broaden sharing of findings/ build interest in article • Getting suggestions on where to promote article • Science communications tools	• Video abstract or "explainer" generator • Audio article generator • Marketing/publicity assistant to promote article • Knowledge management agent to help make info accessible • Generating educational content based on article

* We tested 43 use cases, but each survey participant was only asked to respond to ten in total. They were randomly assigned two use cases from each of the five research process phases shown here. Response counts for each use case range from n=956 to n=1,448.
Source: ExplanAItions AI Use Cases Deep Dive

For each use case, we asked for feedback in five key areas
to build out a well-rounded view of its potential:

Interest: Rate your level of interest in personally using generative AI in these ways in the next two years.

Usage: Which of these represent use cases or solutions that are similar to anything you are already doing and/ or have already tried with AI in the past?

Acceptance: How long do you think it will be before the following generative AI uses and tools are commonly accepted and approved of by a majority of researchers in your field?

AI vs. human performance: Based on what you know and/or have heard, who generally does each of the following better at present: humans or AI?

Publisher role: For the AI uses and tools that you are most interested in, how important do you think guidance and policies from scholarly publishers will be in how you approach implementing them in your work?

Exploring AI use cases

While these questions yielded many insights into specific use cases, there were also some interesting macro-level findings:

Researchers have strong interest in using AI in a wide variety of ways: For 39 of the 43 use cases tested, a majority of researchers were interested in personally using generative AI in the near future.

This suggests that the relatively limited use of AI observed among researchers to date is not due to a lack of interest.

Researchers already consider AI to be capable of taking on many tasks: For over half of the use cases tested (23 out of 43), a majority of researchers already believe AI outperforms humans.

This shows that, while researchers do have some concerns about the models themselves, they also have a favorable view of the available generative AI technology and can envision a lot of possibilities for current use.

Researchers anticipate wide and fairly rapid acceptance of AI: Most use cases (34 out of 43) are expected to have widespread acceptance and approval in their field within the next two years.

This suggests that researchers expect AI usage in research to accelerate considerably in the next two years from its current relatively low levels. It also implies that figuring out how best to implement AI is a matter of some urgency for early and average adopters, who want to keep up with or lead in AI use in their fields.

Even researchers who want to be later adopters of AI show strong interest in personally using AI and expect acceptance to progress rapidly: Most later adopters are personally interested in using AI for close to half of use cases (18 out of 43) and expect over half of use cases (25 out of 43) to achieve broad acceptance in the next two years.

This highlights that even researchers who are less enthusiastic about AI still expect that they will need to adapt to increasing AI use within the next couple of years.

Exploring AI use cases

A note on assessing the performance of AI vs. humans

In this study, we also sought to understand what it means for humans to do a task better than AI, and what is meant when we say that AI outperforms humans.

For where AI performs a task or function better than a human, researchers generally think of cases where technology is able to exceed human ability in terms of speed, accuracy, and the processing of large amounts of information. They recognize that AI can save time, handling monotonous and repetitive work.

When asked about what it means for humans to perform a task or function better than AI, researchers focus on human capabilities of intuition, judgment, creativity, and complex problem-solving. At this point in time, many researchers also consider AI to be less "truthful" than humans, in that humans won't just make up information to fill in any gaps.

Q: When an AI tool or technology does a task or performs a function better than a human, what does that typically mean to you?	**Q: When humans do a task or perform a function better than AI, what does that mean to you?**
"AI is faster, more accurate, discovers patterns that are unattainable for humans" – **Mid-career researcher, Poland**	*"When humans do a task better, this usually means there is some sort of thought process involved, logical reasoning, understanding. Those processes are often at the heart of academic research."* – **Early-career researcher, Germany**
"AI processes more and faster information compared to humans" – **Mid-career researcher, Canada**	*"That humans can perform their task with intent and justification, while also being accountable for the outcomes. A human can articulate their thought processes/performance so any lapses in judgment can be identified and corrected."* – **Early-career researcher, Australia**
"It typically signifies enhanced efficiency and productivity, allowing for faster processing and greater accuracy. This advancement opens up opportunities for innovation, as it frees up human resources to tackle more complex and creative challenges." – **Mid-career researcher, India**	*"Humans have a higher capability to synthesise and evaluate information, and can exercise judgment more effectively. Experienced researchers can apply interdisciplinary methods to problems, and make 'logical leaps' that algorithms are incapable of undertaking."* – **Mid-career researcher, Ireland**
"It finds resources, e.g. references, much faster from a large amount of available data than a human could. This selection then still should be evaluated manually." – **Early-career researcher, Germany**	*"AI is constrained by data and rules. The outputs we obtain from AI is simply a mathematical result. This means that AI cannot replicate human abilities like deep contextual understanding, creativity, ethical judgment, adaptability, and interpersonal skills."* – **Late-career researcher, Argentina**
"It means that it can, for example, generate thousands of design variants or in a few seconds create text that can be used in various publications. Both need to be reviewed by human, of course." – **Late-career researcher, Croatia**	

Exploring AI use cases

Mapping the consensus view of AI use cases

To better understand and visualize the potential for each of our 43 AI use cases, we focused on two key dimensions: interest and AI vs. human performance. Using these key metrics, we were able to plot each use case tested against the quadrants below, which range from highly popular current use cases (where there is a high level of interest and the technology is ready), to human-preferred use cases (where interest is low and humans outperform AI). The section that follows explores the resulting map for each phase of the research process.
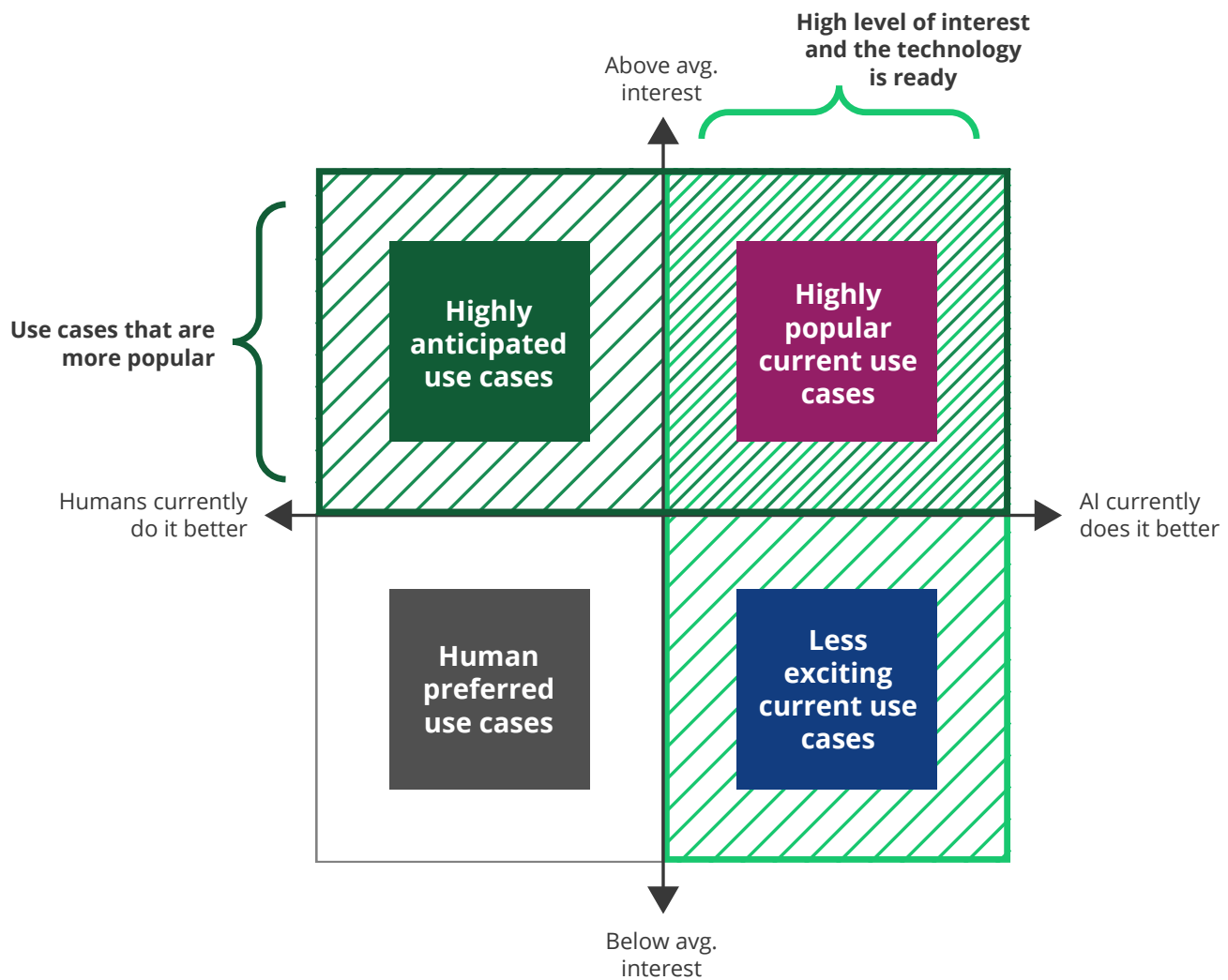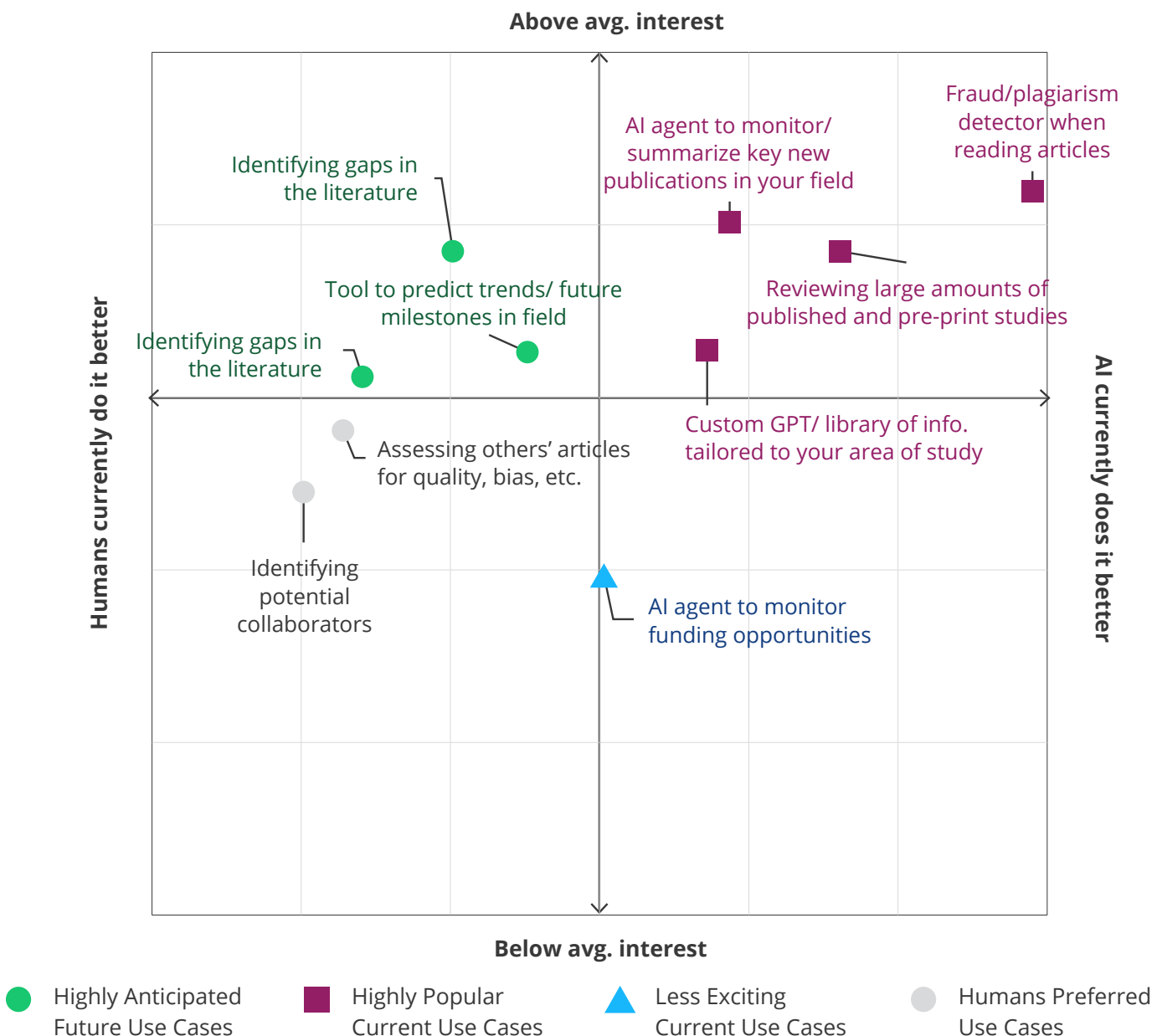
Exploring AI use cases

Research process phase 1: Determining what to research

When it comes to deciding what to research, researchers are ready to use AI to review large bodies of information but are largely in agreement that the technology isn't yet ready to anticipate new developments in their field.

Our map shows that there is strong interest in using AI to identify gaps in the current literature, or predict trends in the field, but the consensus is that AI isn't yet ready to outperform humans in these tasks – these are highly anticipated future use cases. And while detecting fraud and plagiarism is a highly popular current use case, most researchers view assessing others' articles for quality, bias etc. as a human task. Interest in use cases can also depend on career phase – for example, early career researchers are much more interested in using AI to help with tasks that depend on experience, such as writing funding applications and identifying potential collaborators.

Above avg. interest

AI agent to monitor/ summarize key new publications in your field

Fraud/plagiarism detector when reading articles

Identifying gaps in the literature

Tool to predict trends/ future milestones in field

Reviewing large amounts of published and pre-print studies

Identifying gaps in the literature

Humans currently do it better

AI currently does it better

Custom GPT/ library of info. tailored to your area of study

Assessing others' articles for quality, bias, etc.

Identifying potential collaborators

AI agent to monitor funding opportunities

Below avg. interest

- 🟢 Highly Anticipated Future Use Cases
- 🟥 Highly Popular Current Use Cases
- 🔺 Less Exciting Current Use Cases
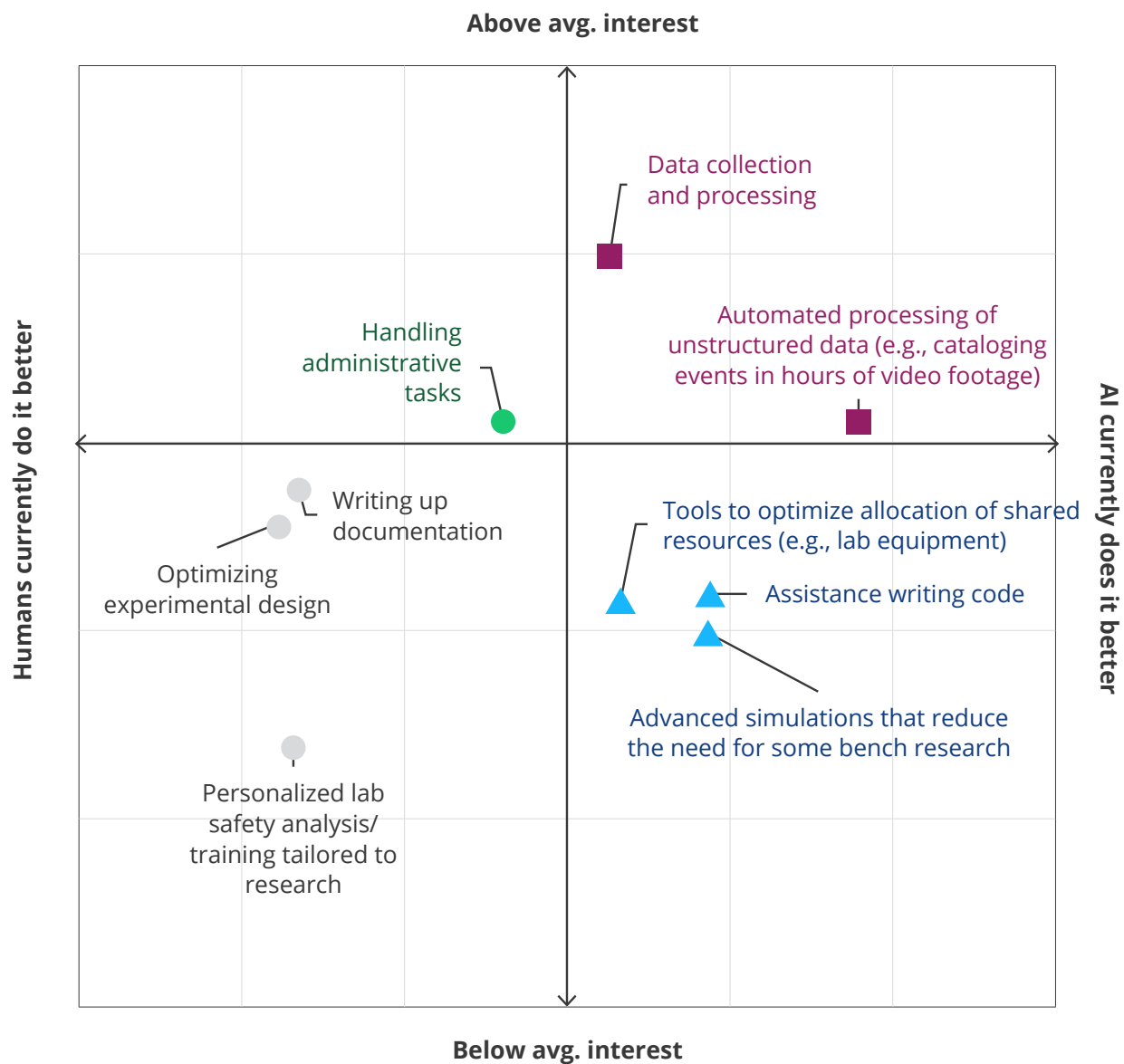- ⚪ Humans Preferred Use Cases

Source: ExplanAItions AI Use Cases Deep Dive n=4,946

Exploring AI use cases

Research process phase 2: Conducting the research

Use cases in this phase of research were generally less interesting to researchers; however, again, they are ready to use AI to handle large amounts of information. Highly popular current use cases for conducting research include data collection and processing, and automated processing of unstructured data such as video footage.

Researchers aren't currently impressed with AI's ability to handle administrative tasks, preferring to carry out tasks such as writing up documentation and optimizing experimental design themselves.

Legend:
- 🟢 Highly Anticipated Future Use Cases
- 🟪 Highly Popular Current Use Cases
- 🔺 Less Exciting Current Use Cases
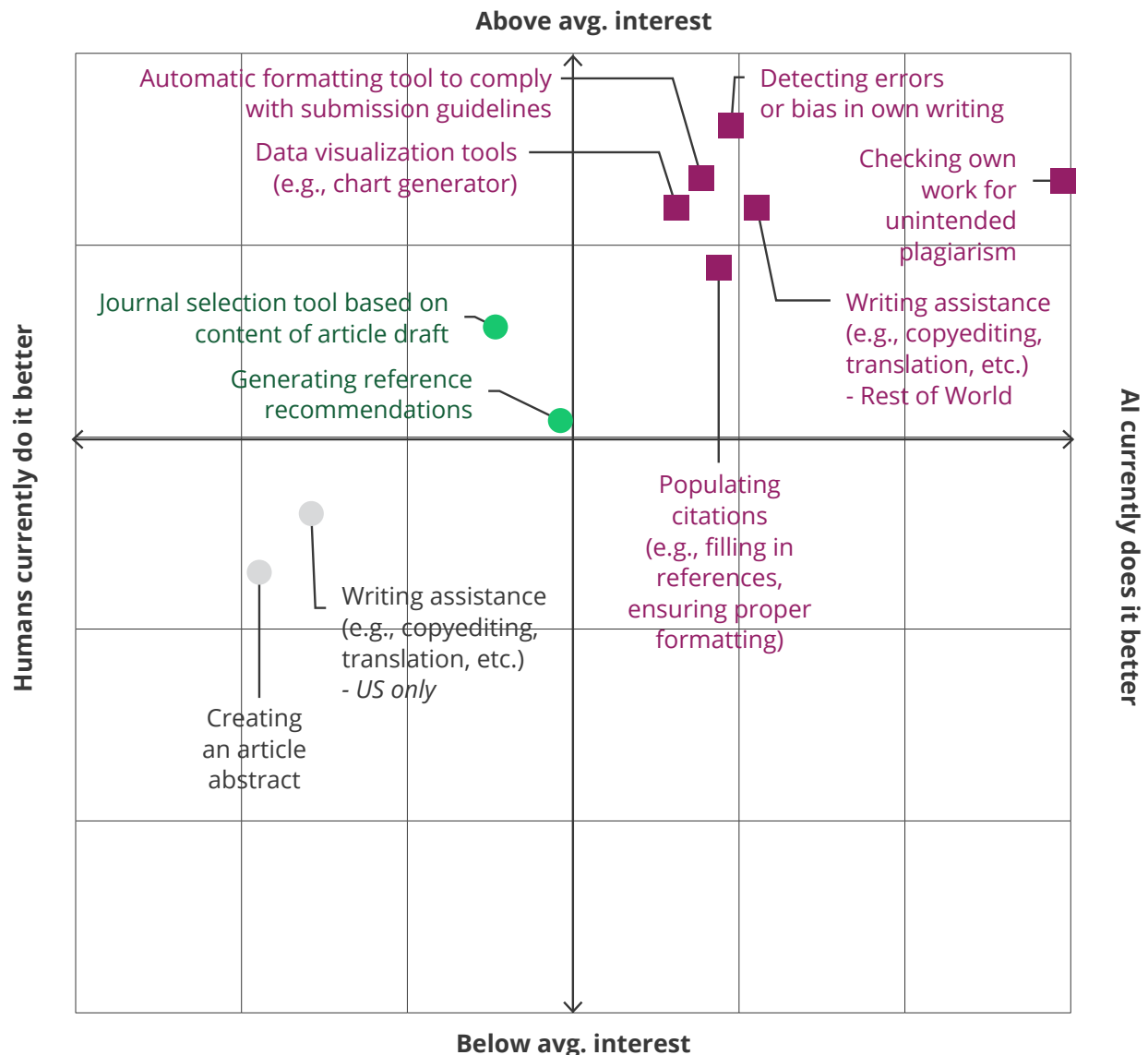- ⚪ Humans Preferred Use Cases

Source: ExplanAItions AI Use Cases Deep Dive n=4,946

Exploring AI use cases

Research process phase 3: Preparing for publication

This phase of research has many highly popular current uses cases, showing that researchers are ready – and interested in – using AI for self-checks and tools to assist in building out their manuscripts.

While researchers outside of the US see writing assistance as a highly popular use case, researchers in the US are less interested and less likely to see AI as outperforming humans. And while researchers are largely in agreement that AI isn't quite ready to help choose a journal or make reference recommendations based on article content, they're very interested in these use cases.

Above avg. interest

Automatic formatting tool to comply with submission guidelines

Detecting errors or bias in own writing

Data visualization tools (e.g., chart generator)

Checking own work for unintended plagiarism

Humans currently do it better

Journal selection tool based on content of article draft

Generating reference recommendations

Writing assistance (e.g., copyediting, translation, etc.) - Rest of World

AI currently does it better

Populating citations (e.g., filling in references, ensuring proper formatting)

Writing assistance (e.g., copyediting, translation, etc.) - US only

Creating an article abstract

Below avg. interest

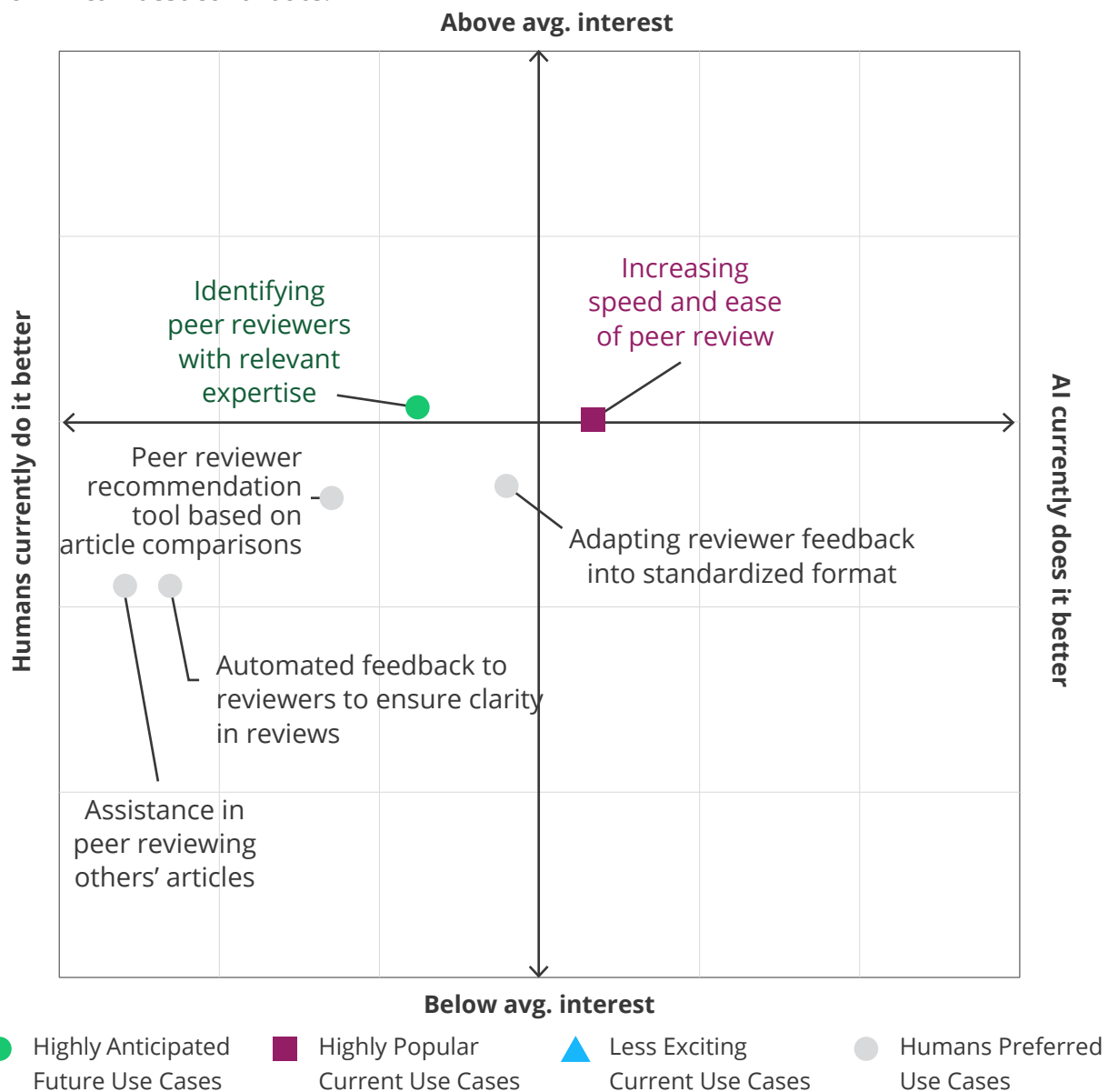| ● Highly Anticipated Future Use Cases | ■ Highly Popular Current Use Cases | ▲ Less Exciting Current Use Cases | ● Humans Preferred Use Cases |

Source: ExplanAItions AI Use Cases Deep Dive n=4,946

Exploring AI use cases

Research process phase 4: Peer review

In contrast to preparing for publication, researchers currently prefer humans over AI for the majority of use cases related to peer review—a strong indication they want human judgment to remain central to the peer review process. Most researchers don't currently think that AI can do better than humans in identifying reviewers, improving review clarity, or assisting in peer review itself.

And while a majority of researchers are interested in using AI to increase the speed and ease of peer review and think AI is presently capable of outperforming humans in this area, it's not clear from these results how researchers expect AI to execute this. Researchers have low interest in using AI for standardizing or clarifying reviewer feedback, and they don't view AI tools as yet able to recommend or identify potential peer reviewers based on their expertise. These findings suggest a general desire to use AI to address some of the pain points associated with peer review, but more work will need to be done to explore how AI can best contribute.
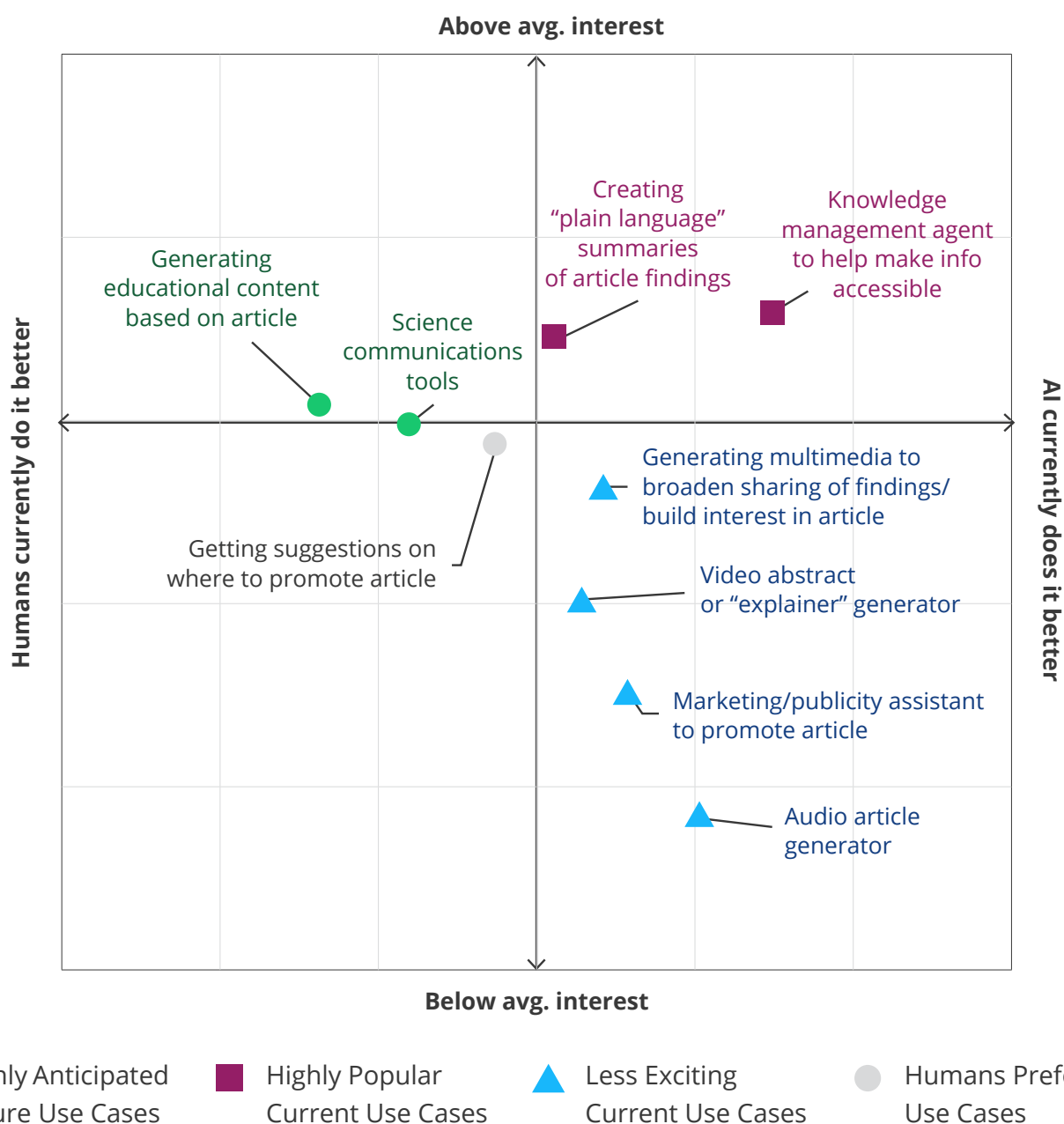

Above avg. interest

Identifying peer reviewers with relevant expertise

Increasing speed and ease of peer review

Peer reviewer recommendation tool based on article comparisons

Adapting reviewer feedback into standardized format

Automated feedback to reviewers to ensure clarity in reviews

Assistance in peer reviewing others' articles

Humans currently do it better

AI currently does it better

Below avg. interest

● Highly Anticipated Future Use Cases ■ Highly Popular Current Use Cases ▲ Less Exciting Current Use Cases ● Humans Preferred Use Cases

Source: ExplanAItions AI Use Cases Deep Dive n=4,946

Exploring AI use cases

Research process phase 5: Promoting and sharing an article

Here, researchers view AI as being able to outperform humans in many post-publication tasks; however, interest in these use cases tends to be lower. One major area where researchers' interest aligns with AI capabilities is increasing the accessibility of their work– AI can create plain language summaries and can act as a knowledge management agent to make information more accessible, helping researchers reach a wider audience with their work.

But while researchers think AI is good at creating multimedia such as video abstracts or explainers, and audio articles, they're currently just not that interested – these fell into the 'less exciting' use case category.


Above avg. interest

Creating "plain language" summaries of article findings

Knowledge management agent to help make info accessible

Generating educational content based on article

Science communications tools

Humans currently do it better

AI currently does it better

Getting suggestions on where to promote article

Generating multimedia to broaden sharing of findings/build interest in article

Video abstract or "explainer" generator

Marketing/publicity assistant to promote article

Audio article generator

Below avg. interest

● Highly Anticipated Future Use Cases ■ Highly Popular Current Use Cases ▲ Less Exciting Current Use Cases ● Humans Preferred Use Cases

Source: ExplanAItions AI Use Cases Deep Dive n=4,946

The Wiley AI Framework

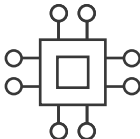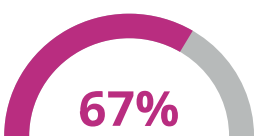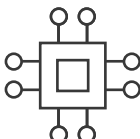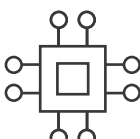Based on the data from the survey, we've created a framework to help researchers explore the potential for AI to serve them in their research. The framework provides a simplified set of recommendations to help the research community think about how they might put AI into action, now, and in the future.

Act: Current use cases where AI is already poised to make a difference and interest is high.

Watch: Near-term opportunities with high interest and growing AI capabilities.

Envision: "Stretch" and ambitious use cases that are not yet feasible or strongly desired, but have the potential to address future needs.

Let's dive into these recommendations in more detail…
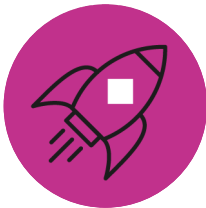
Act: Our recommendation to 'act' applies to use cases where interest is high and the consensus among researchers is that AI is already capable of outperforming humans. These fall into three main categories:

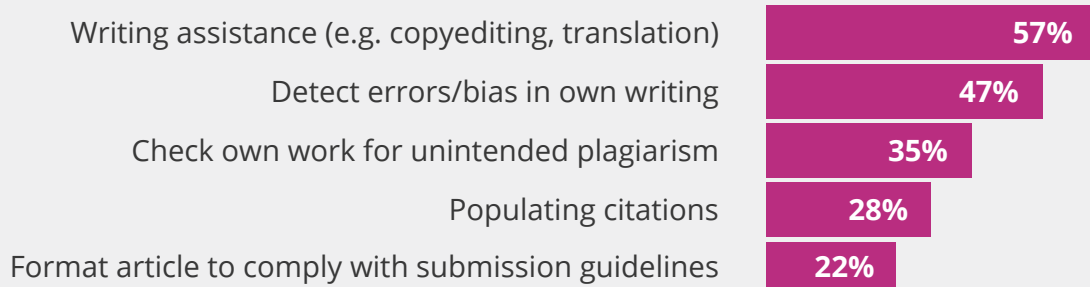| Average researcher views		
	interested in using in next 2 years	who does it better? 👤 / 🖥️ humans or AI
Manuscript preparation and writing assistance *Includes self-checks for errors/bias and plagiarism, writing assistance, submission formatting, populating citations*	**72%**	**62%**
Handling large information sets *Includes reviewing large amounts of studies, monitoring new publications, a custom GPT for your field, and data collection, processing, and visualization*	**67%**	**60%**
Research accessibility and sharing *Includes generating plain language summaries and knowledge management agents*	**65%**	**58%**

With strong interest and a consensus that AI can already outperform humans, it's these use cases that are ripe for action.
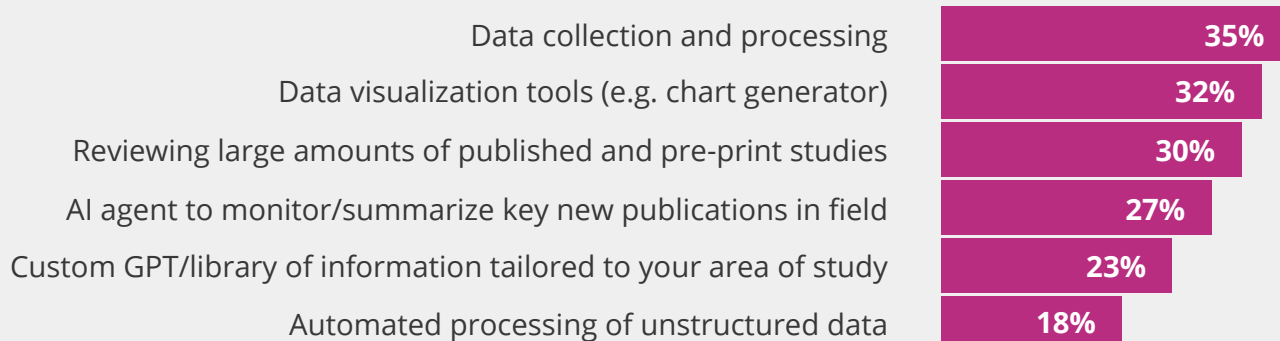
Act: The Wiley AI Framework

However, while researchers are clearly interested in using AI for these use cases, most have only been tried by around a third of researchers on average.

Percentage of researchers who have used/tried AI for "Act" use cases

Manuscript preparation and writing assistance

Use case	Percentage
Writing assistance (e.g. copyediting, translation)	57%
Detect errors/bias in own writing	47%
Check own work for unintended plagiarism	35%
Populating citations	28%
Format article to comply with submission guidelines	22%

Handling large information sets

Use case	Percentage
Data collection and processing	35%
Data visualization tools (e.g. chart generator)	32%
Reviewing large amounts of published and pre-print studies	30%
AI agent to monitor/summarize key new publications in field	27%
Custom GPT/library of information tailored to your area of study	23%
Automated processing of unstructured data	18%

Research accessibility and sharing

Use case	Percentage
Creating 'plain language' summaries of research findings	32%
Knowledge management agent to help make information accessible	25%

Source: ExplanAItions AI Use Cases Deep Dive, Q: Which, if any, of these represent use cases or solutions that are similar to anything you are already doing and/or have already tried with AI in the past? Select all that apply. n=4,946

With low current usage, these use cases are prime opportunities that are largely unexplored by researchers at present. They represent logical places to start for researchers who are interested in expanding their use of AI.

The Wiley AI Framework

Watch: Where interest is high but there's a general agreement that humans still outperform available AI tools, our recommendation to researchers is to 'watch' as the technology continues to develop. These fall into two main categories:

Average researcher views		
	interested in using in next 2 years	who does it better? humans or AI
Generating predictions and recommendations *Includes use cases for predicting trends and gaps in the literature, and generating recommendations for references, journal selection, and peer reviewers*	64%	56%
Offloading essential but less engaging work *Includes handling administrative tasks and finding and applying for funding opportunities*	58%	57%

For example, many researchers are looking forward to using AI in the future to handle administrative tasks, assist with writing funding applications, and monitor funding opportunities. This frees up their time to focus on the more complex and interesting aspects of their work that require human creativity and intellect. However, few researchers believe AI tools are currently capable of these tasks; humans still outperform the technology.

When compared with the percentage who have tried AI in these areas, the following data implies that researchers expect the use of AI to expand and accelerate considerably in these areas in the next two years.

Researcher expectations for AI use in next two years vs. usage to date

Generating predictions and recommendations

Journal selection tool based on content of article draft
- **65%**
- **25%**

Generating reference recommendations
- **61%**
- **32%**

Identifying peer reviewers with relevant expertise
- **57%**
- **16%**

Identifying gaps in the literature
- **52%**
- **30%**

Tool to predict future trends/milestones in the field
- **42%**
- **19%**

Offloading essential but less engaging work

Handling administrative tasks
- **56%**
- **26%**

Assistance in writing funding applications
- **54%**
- **21%**

AI agent to monitor funding opportunities
- **52%**
- **10%**

■ **Commonly accepted in under two years**
■ **Have used/tried use case**
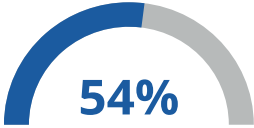
Source: ExplanAItions AI Use Cases Deep Dive, Q: How long do you think it will be before the following generative AI uses and tools are commonly accepted and approved of by a majority of researchers in your field? n=4,946

It's these use cases that will provide emerging opportunities in the near future, with high anticipation for growing AI capabilities.

The Wiley AI Framework

Envision: In anticipation of the future, we're recommending the action of "envision" for selected use cases where interest may currently fall a bit below the average (60%) and/or AI capabilities may lag behind those of humans. While they may not be ready for action right now, these use cases should remain on our radar as they address important researcher needs and pain points.

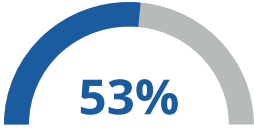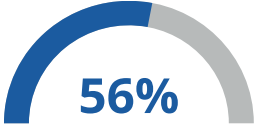| Average researcher views		
	interested in using in next 2 years	who does it better? humans or AI
AI to enhance research methods and collaboration *Includes uses cases such as writing up documentation, identifying collaborators, and optimizing experimental design.*	54%	58%
Automated content generation for increasing article reach and impact *Includes generating multimedia to broaden interest in article, generating educational content based on article, and generation of video abstract/explainer.*	53%	51%
AI-augmented peer review processes *Includes adapting reviewer feedback into standardized format, peer reviewer recommendation tool, and increase the speed and ease of peer review.*	56%	59%

Although interest in using AI tools to enhance research methods and collaboration is lower, we view this an area where improved efficiencies from AI could soon be useful to researchers.

In the area of automated content generation to increase the reach and impact of research, the increasing popularity of generative AI tools such as NotebookLM from Google and Notebook Llama from Meta could cause interest to shift, especially as funders and institutions increase their focus on measuring the impact of published research.

Finally, while this survey shows that researchers want humans to remain central to peer review, slow peer review speeds and difficulties finding reviewers are common pain points for researchers and publishers alike. There are some use cases where interest in AI for aspects of peer review is only slightly below average, suggesting that researchers may be open to augmenting the processes of peer review with AI as AI technology develops and accuracy improves.

Even though some of these use cases may seem like a stretch right now — either there's not enough interest or the technology just isn't ready — the general consensus among researchers is that most use cases will still gain wider acceptance in the next two years.

So, while the use cases categorized under 'envision' may seem some way off, around half of researchers expect them to become common in the near future.
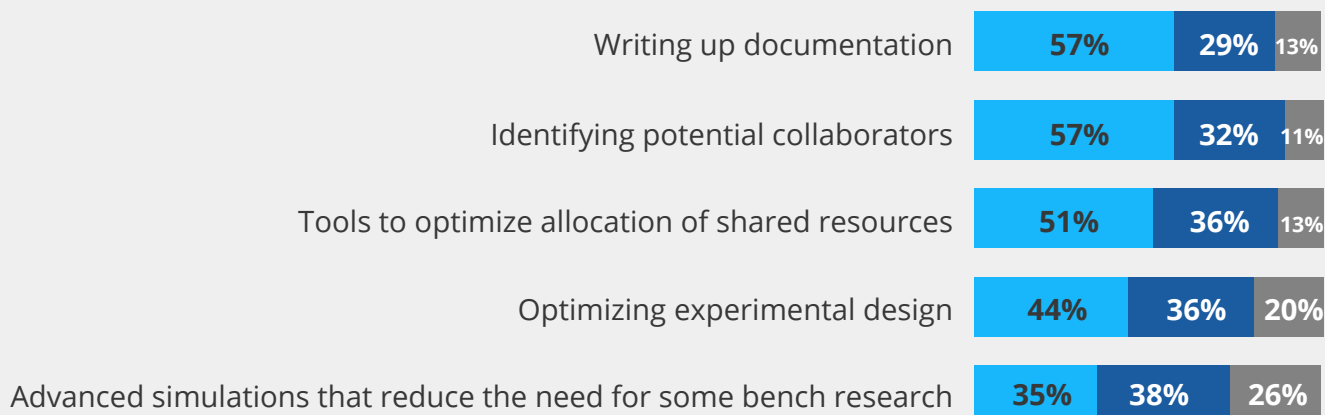
Envision: The Wiley AI Framework

How long researchers think it will be before the following use cases and tools are commonly accepted and used by researchers in their field

Legend:
- ■ Less than two years
- ■ Two to three years
- ■ Four years or more

AI to enhance research methods and collaboration

Use case	Less than two years	Two to three years	Four years or more
Writing up documentation	57%	29%	13%
Identifying potential collaborators	57%	32%	11%
Tools to optimize allocation of shared resources	51%	36%	13%
Optimizing experimental design	44%	36%	20%
Advanced simulations that reduce the need for some bench research	35%	38%	26%

Automated content generation for increasing article reach and impact

Use case	Less than two years	Two to three years	Four years or more
Generating multimedia to broaden sharing of findings	58%	31%	11%
Audio article generator	58%	31%	11%
Generating educational content based on article	56%	30%	14%
Video abstract or 'explainer' generator	55%	34%	11%
Science communication tools	54%	36%	10%

AI-augmented peer review processes

Use case	Less than two years	Two to three years	Four years or more
Adapting reviewer feedback into standardized format	54%	34%	12%
Peer reviewer recommendation tool based on article comparisons	51%	35%	13%
Increase the speed and ease of peer review	50%	36%	14%
Automated feedback to reviewers to ensure clarity in reviews	47%	38%	16%

Source: ExplanAItions AI Use Cases Deep Dive, Q: How long do you think it will be before the following generative AI uses and tools are commonly accepted and approved of by a majority of researchers in your field? n=4,946

Envision: The Wiley AI Framework

We will continue to track these trends to understand where AI is ready to go, where it needs work, and where human expertise and capability cannot be substituted.

Role of scholarly publishers

Who do researchers rely on for guidance when it comes to AI? Our data shows that there is currently no strong consensus – and apart from close colleagues, fewer than half of researchers rely on any one source.

Top sources researchers rely on for guidance in using AI

Source	%
Colleagues at my organization or institution	54%
My own knowledge and judgment	49%
Journal editors/editorial guidelines	48%
Researchers I know personally	45%
Conferences	42%
Scholarly publishers	40%
Prominent societies in my field	37%
Generative AI tools (e.g. Chat GPT, Microsoft Copilot)	35%

Source: ExplanAItions AI Use Cases Deep Dive; Q: Thinking about the future and the next time you will try using AI in a way that is new to you, who or what do you expect to play an important role in ensuring your work aligns to best practices and ethical guidelines?, n=4,946

This data shows that scholarly publishers are generally not researchers' first stop for guidance in using AI. However, when we asked specifically about the role of the publisher, there's a strong desire for publishers to help researchers in navigating their AI journey.

Role of scholarly publishers

Over two-thirds would like publishers to provide clear guidelines on which uses of AI are acceptable when publishing scholarly research. The sharing of best practices and recommendations on safe and responsible use of AI is also widely desired.

What researchers want from publishers with regard to AI

Provide clear guidelines on what uses of AI are acceptable in the context of publishing scholarly research	70%
Help researchers avoid potential pitfalls, errors, biases etc.	69%
Share best practices and tips for using AI	62%
Provide guidance for how researchers can use AI responsibly	57%
Share recommendations on what AI tools are safe to use	53%
Prioritize tools to detect the misuse of AI	51%
Share recommendations on what AI tools to avoid/use with caution	50%
Share examples of potential applications of AI tools	47%
Host events, workshops, webinars etc. to encourage the exchange of ideas and information	40%
Create their own AI tools to assist in the publication process	37%

Source: ExplanAItions AI Use Cases Deep Dive; Q: As generative AI use becomes more common in research, which of the following are important roles/functions for scholarly publishers to play? Select all that apply. , n=4,946

Role of scholarly publishers

Who most wants publishers to provide clear guidelines for AI use?

- Business, economics, and finance **(77%)** and social sciences **(74%)** researchers
- Researchers in the Americas **(75%)**, particularly Canada **(80%)** and the US **(76%)**, and researchers in Australia **(80%)**
- Late career researchers **(74%)**

When asked what's the most important thing publishers should do to support their use of AI, researchers put their desire for guidelines and training into their own words:

> *Publishers should provide clear guidelines and ethics regarding the use of AI, ensure transparency and accountability about the use of AI in the publishing process, and protect intellectual property of authors from potential misuse.*
>
> **Early career researcher,**
> India

> *Have clear, consistent guide rails to what usage is acceptable and the justifications for that usage. Be transparent about articles made with the assistance of generative AI.*
>
> **Mid-career researcher, United States**

> *...ink the most important thing is to ...ate guidelines on the ethical use of AI ...research and publishing.*
>
> **...arly career researcher, South Africa**

This need for publishers to provide clear policies and guidance was also apparent across the individual use cases covered in our survey. Across all use cases, an average of 72% of researchers rated the publisher as somewhat or very important to how they would approach implementing that AI use case into their work.

While researchers may not think of publishers as their first line of support in using AI, this study shows that publishers need to be proactive in creating policies and guidelines and in communicating them to the research community—rather than expecting researchers to just come to them.

What's next?

As AI technologies develop and evolve, they continue to have a transformative impact on the publishing industry. As publishers, we need to implement practical solutions both for today, and for what's to come.

We've seen that what researchers want from us is clear guidance and training. We need to empower authors so that they understand which AI tools they can use safely, and how to use them. Any guidelines created must evolve with the technology; and any training and tools offered should let AI take some of the strain, without sacrificing or reducing the uniquely human contribution – the personality, the character – that comes with the creative process.

Trust cannot be overstated; we must lead the way in demanding ethics and transparency commitments. Publishers need to represent authors' interests in their dealings with AI developers - particularly around transparency, IP protection, attribution, and compensation. That means working within the system.

And we must shape the development of AI-powered tools to advance research and discovery. Publishers need to be a part of these AI research solutions through collaboration – we all need to work together in new ways.

This study marks just the beginning of our journey. As AI evolves, we'll continue to create, listen, and refine our offerings – all while making sure that human creativity and critical thinking remain at the heart of innovation.
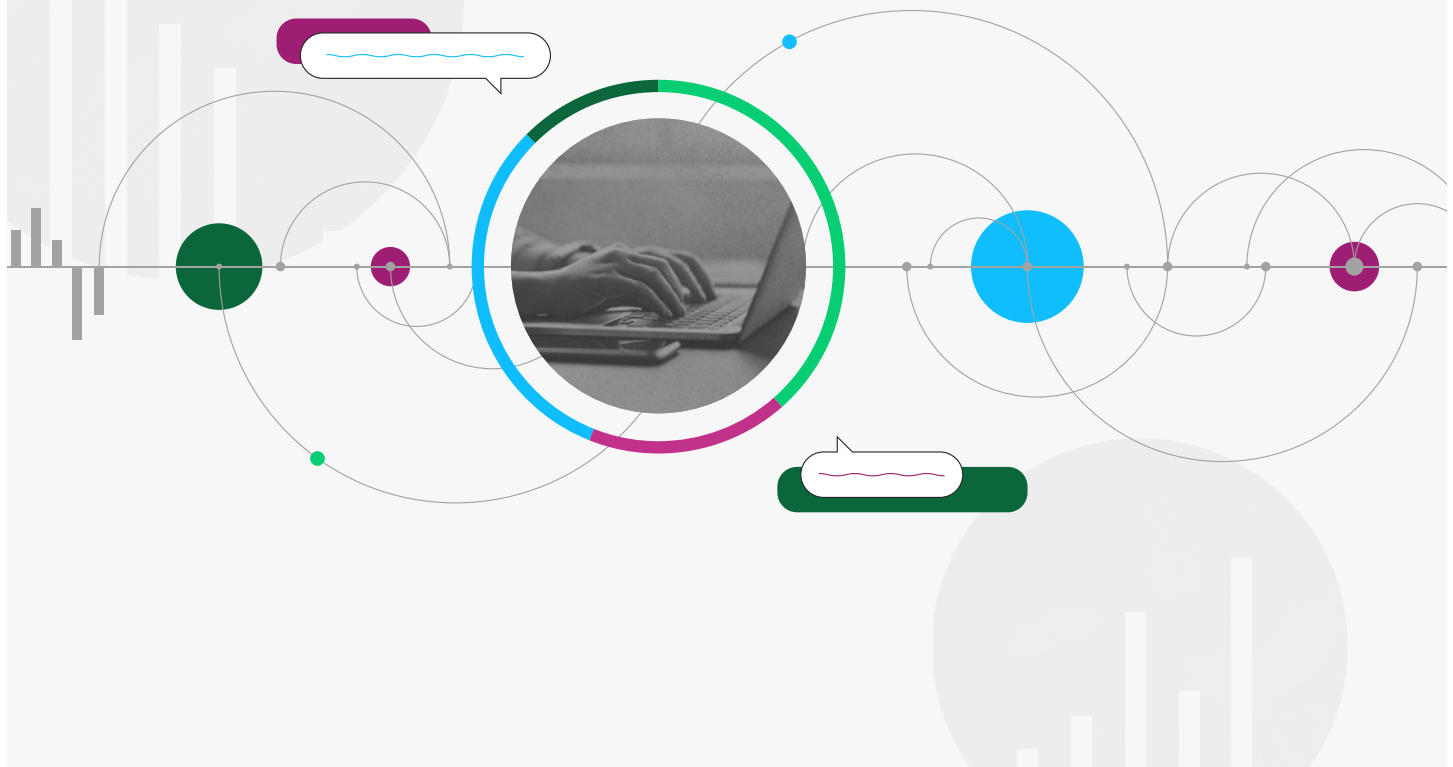
Appendix: Detailed methodology

ExplanAItions is the culmination of multiple explorations of the topic of AI in research conducted by Wiley in 2024.

- **Our first step was a survey focused on researcher perceptions, attitudes, and behaviors around generative AI,** conducted from March 21 to April 11, 2024. This survey collected a total of 1,043 responses.

- **Next, Wiley conducted a total of 18 one-hour one-on-one interviews** over July and August 2024 with researchers who are early adopters of AI or AI enthusiasts. These interviews allowed us to collect input on AI use cases and refine the list that was tested in our second survey.

- **Following the interviews, we conducted a second survey that was a quantitative deep dive into researcher views of AI use cases**, conducted from August 13 to September 6, 2024. This survey collected a total of 4,946 responses.

For all of the above activities, participants were primarily sourced through Wiley's own global databases of contacts. Email invitations were sent to a random selection of contacts from our overall database of researchers and journal authors. For each complete survey response, Wiley donated funds to plant trees to One Tree Planted, a global charity supporting reforestation and biodiversity initiatives. In total, due to these surveys, we donated funds to plant 21,780 trees.

For the deep dive into AI use cases, Wiley also worked with ResearchGate to send an email invitation to participate to 100,000 randomly selected researchers from their database, representing a variety of disciplines in the United States, European Union, United Kingdom, India, and China.

The surveys were both primarily conducted in English, but the deep dive into use cases was also translated into Simplified Chinese for participants in China.

Appendix: Detailed methodology

A note on key subgroup definitions

Anyone who wishes to explore the results in more detail for any of the below listed subgroups can refer to the fact sheets available for download on the *ExplanAItions* website. These include:

- **Career phase:** Survey participants were asked to identify their age range and how many years of professional experience they have. Based on their responses, they were classified as Early Career Researchers (primarily ages 25 to 34 with 0-7 years of experience, n=1,339), Mid-Career Researchers (primarily ages 35 to 54 with 8 to 19 years of experience, n=1,415), and Late Career Researchers (primarily age 55 and over with 20+ years of experience, n=2,079)

- **Disciplines:** Survey participants were asked to select the option that best reflected their area of expertise or field of study. Responses were rolled up into eight top-level disciplines for further analysis:

  - Medicine (n=1,183)

  - Physical Sciences (n=1,033)

  - Social Sciences (n=744)

  - Life Sciences (n=713)

  - Business, Economics, and Finance (n=459)

  - Humanities (n=308)

  - Computer Science (n=200)

  - Mathematics and Statistics (n=171)

- **Regions:** Survey participants were asked to indicate the country or region in which they are located. Responses to the survey were spread across the Americas (n=1,193), EMEA (Europe, the Middle East, and Africa; n=1,945), and APAC (Asia and Pacific, n=1,808)

- **Sector:** Survey participants were asked to identify what best describes the sector in which they work: academic, corporate, government, healthcare, or other. Two-thirds of participants work in academia (n=3,286). The healthcare sector was next largest (n=614), followed by other (n=421),government (n=318), and corporate (n=307).

Appendix

Responses by region and country

Americas	Perceptions Survey	Use Cases Survey (n=1,193)
United States	200	727
Brazil	37	106
Canada	22	101
Mexico	25	74
Argentina	13	44
Colombia	12	43
Chile		20
Peru		18
Ecuador		14
Uruguay		8
Costa Rica		5
Countries/regions with fewer than 10 responses each	21	33

Americas	Perceptions Survey	Use Cases (n=1,808)
China	63	605
India	101	515
Japan	26	157
Australia	11	107
Pakistan	31	97
Indonesia		45
Malaysia		37
Philippines		32
New Zealand		29
Taiwan		26
Thailand		23
Korea, Republic of		21
Hong Kong		19
Bangladesh		18
Viet Nam		17
Nepal		15
Singapore		11
Countries/regions with fewer than 10 responses each	52	34

Europe, the Middle East, and Africa	Perceptions Survey	Use Cases Survey (n=1,945)
United Kingdom	38	211
Italy	37	181
Turkey	23	121
Spain	22	103
Germany	25	99
Nigeria	14	85
South Africa		66
Iran, Islamic Republic of	20	64
Portugal	13	54
Poland		53
Greece		53
Romania		50
Ethiopia		49
France	22	44
Sweden	13	41
Egypt	16	41
Netherlands		36
Kenya		32
Saudi Arabia		25
Ghana		24
Ireland		23
Israel		23
Iraq		21
Bulgaria		20
Czech Republic		19
Switzerland		19
Finland		17
Algeria		17
Morocco		17
United Arab Emirates		15
Denmark		15
Norway		14
Belgium		14
Croatia		13
Austria		13
Hungary		13
Serbia		13
Jordan		12
Slovakia		12
Uganda		11
Cameroon		11
Cyprus		11
Tanzania, United Republic of		10
Malawi		8
Countries/regions with fewer than 10 responses each	186	152

Acknowledgments