AI Tools

Tool	Domain	Purpose	Field of Study	Utilization	Availability	Best Practice	Current State	Research Opportunity	Website	Known Limitations
Writefull	Academic Writing Assistance	Language feedback for improving academic tone	Academic Writing	Improving grammar, phrasing, and academic tone	Freemium	Use to polish academic manuscripts for submission	Becoming popular among non-native English speakers	Add more advanced features for checking technical language	Writefull	Limited to specific academic disciplines; not completely free
Scite	Citation Analysis	Identification of supporting and contrastive citations for research	Academic Research	Verification of citations, checking references	Freemium	Use for validating arguments in your writing	Growing in popularity for rigorous academic research	Expand capabilities to detect erroneous or outdated citations	Scite	Requires subscription for advanced features, limited in detecting some niche citations
Bard	Conversational AI	Answering questions and assisting in generating text	Multidisciplinary	Q&A, Generating content	Free	Use for rapid brainstorming and general content assistance	Growing competition with other AI tools like ChatGPT	Enhance specific-domain expertise to improve responses	Bard	Limited accuracy in specialized fields, tends to generate generic content
ChatGPT	Conversational AI	Generating human-like responses for content creation and assistance	Multidisciplinary	Content creation, Q&A, Manuscript assistance	Freemium	Best for rapid drafting and brainstorming ideas	Widely adopted and continuously improved	Improve long-context conversation retention	ChatGPT	May produce factually incorrect information, limited memory across sessions
Copilot	Conversational AI and Productivity Tools	Assist users by providing information, completing tasks, and engaging in meaningful conversations		Customer support, Answering queries and providing assistance. Productivity: Helping with tasks like scheduling, drafting emails, and summarizing documents. Education: Offering explanations and tutoring on various subjects. Entertainment: Engaging in casual conversation and providing recommendations.	Copilot is available through various platforms, including: Microsoft 365: Integrated into tools like Word, Excel, and Outlook. Azure OpenAI Service: Accessible via API for developers.	Best used as a tool to enhance human productivity by automating routine tasks and providing intelligent suggestions, allowing users to focus on more complex activities. To get the most out of Copilot: Be clear and specific: Provide detailed queries for accurate responses. Use context: Give background information to help Copilot understand your needs better. Iterate: Refine your queries based on Copilot's responses for improved results.	Active development and expansion	Improving contextual understanding: Enhancing Copilot's ability to understand and retain context over long conversations. Bias mitigation: Reducing biases in responses to ensure fairness and accuracy. Multimodal capabilities: Integrating visual and auditory inputs for a more comprehensive AI assistant.	Copilot	Context retention: May struggle with maintaining context over extended interactions. Complex queries: Might not always provide accurate responses to highly complex or ambiguous questions. Bias: Potential for biased responses based on training data.
PowerDrill	Data Analysis	Performing advanced statistical analysis and visualizations	Data Science	Data exploration, Visual analytics	Subscription	Ideal for large datasets needing quick insights	Gaining popularity in big data analytics	Explore integration with visualization tools like Tableau	Powerdrill	Subscription only, requires powerful hardware for some analyses
Overleaf	Document Preparation	Collaborative writing and publishing using LaTeX	STEM	Collaborative writing, LaTeX-based document formatting	Freemium	Use for writing academic papers, particularly in technical fields	Very popular among STEM researchers	Add more templates for different types of publications	Overleaf	Requires familiarity with LaTeX, which can be challenging for beginners
Google DeepMind	Healthcare and Medicine	Develops AI-driven diagnostic tools and predictive models in imaging and molecular biology	Multidisciplinary	Gemini: Ultra, Pro, Flash, Nano; Imagen; AlphaFolds; Project Astra; Veo; SynthID		**Gemini**: multimodal reasoning; complex coding, mathematical reasoning; image understanding; speech transcription; text summarization; **AlphaFolds**: predicts the 3D structures of proteins from their amino acid sequences; **Project Astra**: Astra can interpret and respond to various forms of input, including visual and auditory data, enabling it to understand and interact with its environment more effectively; designed to engage in fluid and human-like conversations, enhancing user experience and accessibility; **Veo**: generative video models; **SynthID**: identifies AI-generated content by embedding digital watermarks directly into AI-generated images, audio, text, or video	**Gemini**: Availability: Available for integration via Google AI Studio and Vertex AI. Pricing: Gemini 1.5 Pro: $7 per 1 million tokens. Gemini 1.5 Flash: $0.35 per 1 million tokens. **Imagen 3**: Availability: Integrated into Google Cloud's Vertex AI platform. Pricing: Subject to Google Cloud's Vertex AI pricing structure. AlphaFold: Availability: Freely accessible to the scientific community via the AlphaFold Protein Structure Database. Pricing: Free of charge. **Project Astra**: Availability: Currently in the prototype stage; not yet commercially available. Pricing: Not applicable. **Veo**: Availability: Details on commercial availability have not been disclosed. Pricing: Not specified. **SynthID**: Availability: Beta version available to a limited number of Vertex AI customers using Imagen. Pricing: Not specified; likely included within Vertex AI services.	Extensive: in biomedical sciences; mathematics; physics; movie industry, etc.	DeepMind	Limited access to Project Astra and Veo.
SimConverse	Healthcare professional education	Provide personalized healthcare communication training Clinical communication training Enable professional development across healthcare disciplines Interprofessional education Continuing professional development Healthcare simulation and implementation Facilitate standardized assessment via rubrics Support ongoing education from undergraduate to doctoral levels Enable customized scenario creation	Multidisciplinary	Healthcare simulation	Customizable scenario creation platform Extensive pre-built scenario library	Using customized rubrics for assessment Implementing scenario-based learning Providing immediate feedback Aligning with professional development requirements Creating discipline-specific learning paths Utilizing built-in assessment tools	AI-powered feedback system Real-time conversation simulation Customizable scenario library Intelligent rubric assessment Comprehensive healthcare profession coverage Multiple educational level support Natural conversation flow without artificial pauses	Enhancement of AI feedback mechanisms Development of new specialized scenarios Improvement of assessment rubrics Integration of emerging healthcare communication protocols Cross-disciplinary learning effectiveness studies AI accuracy in professional assessment	Simconverse	May require initial setup for customized rubrics Dependent on predefined assessment criteria Requires technological infrastructure May need regular updates to maintain current healthcare standards Limited to communication-based scenarios
Mirror Think	Idea Development	Assist in brainstorming and refining research ideas	Multidisciplinary	Ideation, Concept development	Free	Effective for generating multiple angles to research a question	Early-stage development, limited user base	Improve user customization to enhance relevance of suggestions	Mirror Think	Current capabilities are general, may not always provide domain-specific depth
Undermind	Literature Exploration	Identify and trace research papers and networks	Multidisciplinary	Literature review, Reference mining	Premium versions available (7.30 to 16 USD/month)	Use in combination with similar tools like Connected Papers for a broad review	Available with some limitations in free versions	Improving traceability and semantic network analysis of references	Undermind AI	Limited to open-source and publicly available references, lacks access to some proprietary databases
Connected Papers	Literature Exploration	Visual mapping of related research papers	Multidisciplinary	Finding related papers based on an initial seed paper	Free	Best for exploring connections in an unfamiliar field	Widely used for initial exploration	Integrate more sophisticated clustering algorithms to show connections	Connected papers	Visualization is dependent on the availability of connections; limited for fields with less citation data.
Litmaps	Literature Exploration	Tracking research topics over time	Multidisciplinary	Alerts for new papers, Evolution tracking	Freemium	Helpful for staying updated on niche research areas	Stable with alert-based functionalities	Develop predictive models for emerging trends	Litmaps	Relies on available data and user input for tracking, may not capture niche publications without user intervention.
ResearchRabbit	Literature Exploration	Interactive search and paper recommendation	Multidisciplinary	Explore related research papers interactively	Freemium	Use iteratively to refine the network of relevant research	Used commonly for personalized search experience	Explore integration with collaborative features for group research	ResearchRabbithole	Focused on personal searches, lacks collaborative features for research groups
PaperQA2	Literature Exploration	Retrieval-Augmented Generation (RAG) for scientific summaries	Scientific Research	Generating Wikipedia-style summaries of scientific topics	Open source on GitHub	Use for generating summaries of multiple papers at once	Recent tool, needs user familiarity with API access	Explore improving factual accuracy and expanding cross-domain capabilities	GitHub	Requires familiarity with command line and API setup, limited for those without technical background.
Perplexity	Literature Exploration	Answering research questions by retrieving relevant literature	Multidisciplinary	Rapid Q&A based on scientific literature	Freemium	Best used for getting quick overviews of a topic	Emerging with rapid adoption	Explore connecting with proprietary databases for richer responses	Perplexity	Limited to open-access content, lacks deep insight for niche subjects
Elicit	Literature Exploration	Helps automate research workflows and identify key papers	Multidisciplinary	Literature review automation, Key paper discovery	Freemium	Use to generate rapid literature insights on a research question	Stable with consistent updates	Expand capabilities for systematic review automation	Elicit	Limited access to proprietary databases, dependent on public API integration
Hauristica	Literature Exploration	Use AI for synthesizing literature insights	Multidisciplinary	Summarizing papers, highlighting key findings	Subscription	Ideal for creating summaries from multiple papers at once	Emerging tool with promising use cases	Incorporate deeper NLP models to extract nuanced insights	Hauristica	Subscription only, not ideal for those without funding
Consensus	Literature Exploration	Summarizes scientific evidence to provide insights	Multidisciplinary	Answering research questions based on published evidence	Freemium	Use for quickly understanding consensus in a specific research area	Gaining popularity among researchers needing quick evidence synthesis	Expand to include more proprietary databases for comprehensive synthesis	Consensus	Limited to open-access articles; lacks depth for highly specialized subjects
Scholarcy	Literature Summarization	Provides concise summaries of research articles	Multidisciplinary	Quick skimming of multiple research articles	Freemium	Use for quickly extracting main points of an article	Popular among researchers for quick literature review	Expand ability to summarize more complex articles accurately	Scholarcy	Limited to open access articles; lacks the ability to fully access paywalled content
Scispace	Manuscript Assistance	AI assistant for writing and formatting research papers	Academic Writing	Manuscript formatting, Grammar assistance	Freemium	Best used for formatting documents according to journal requirements	Competing with tools like Grammarly	Enhance formatting capabilities for more journals	Scispace	Freemium features are limited, lacks integration with certain journals
PaperPal	Manuscript Editing	Academic language editing for non-native speakers	Academic Writing	Improving grammar, clarity, and style	Freemium	Ideal for polishing manuscripts before journal submission	Increasingly popular in academic settings	Extend free offerings to improve accessibility	PaperPal	Limited features in the free version, subscription needed for full access
Typeset	Manuscript Formatting	Formats manuscripts according to journal requirements	Academic Writing	Formatting documents for journal submissions	Freemium	Ideal for meeting specific journal format requirements	Competing with LaTeX and Overleaf for manuscript formatting	Add integration with more journals for formatting compliance	Typeset	Limited layout customization compared to LaTeX; premium features restricted
PCS Patient Communication Simulators	Medical education and training	Provide virtual medical simulation training Healthcare simulation Virtual patient interaction Clinical skills development Improve healthcare provider-patient communication Facilitate clinical skills assessment Reduce medical errors through better communication training Offer accessible, scalable medical education solutions	Multidisciplinary	Healthcare simulation	Virtual platform accessible via screen-based interface Virtual Reality (VR) compatible	Regular use for skill development Integration with existing curriculum Combination with traditional training methods Use for both individual and team-based learning Implementation of automated assessment feedback	AI-driven conversation engine with 30,000+ learner question recognition Model-driven physiological responses Full physical examination capabilities Multiple virtual environments Diverse avatar selection Automated performance assessment	Expansion of AI conversation capabilities Development of more complex clinical scenarios Integration of new medical conditions and treatments Enhancement of physiological modeling Improvement of assessment metrics VR technology advancement in medical simulation	PCS - AI-Powered Healthcare & Patient Simulation Software	Cannot fully replace hands-on clinical experience Dependent on technology infrastructure Virtual nature may not capture all nuances of in-person interaction Limited to programmed scenarios and responses May require initial learning curve for users
Dicom to Print (D2P)	Medical imaging 3D printing technology Surgical planning Medical device manufacturing Diagnostic modeling	Convert DICOM images to 3D printable models Facilitate pre-operative surgical planning Create diagnostic-quality anatomical models Enable patient-specific medical solutions Streamline medical imaging workflow	Multidisciplinary	Healthcare simulation Surgical departments Radiology departments Medical device design labs Point-of-care facilities Medical manufacturing facilities Pre-operative planning sessions	FDA 510(k)-cleared software Stand-alone modular software package Compatible with various 3D printers Integrated solution with 3D Systems printers VR visualization capabilities Multiple export format options	Following FDA guidelines Maintaining diagnostic quality standards Using cleared printer-material combinations Implementing proper sterilization protocols Following biocompatibility requirements Maintaining regulatory compliance	Consolidated workstation for all processes Advanced segmentation tools VR visualization capabilities Multiple export format support Integration with various applications Streamlined workflow design User-friendly interface for non-technical users	Enhanced automation in segmentation Improved material development Advanced visualization techniques New medical applications Integration with emerging technologies Optimization of printing processes	Medical Additive Manufacturing Software | Dotpoint	Specific printer-material combinations required for FDA clearance May require initial training despite user-friendly design Hardware-specific requirements Limited to diagnostic and planning purposes Dependent on quality of input DICOM images Material constraints for biocompatible application
Alex	Medical simulation Healthcare education Clinical skills training Emergency response training Patient care simulation	Provide hands-on clinical training Develop critical thinking skills Practice physical assessment Train emergency response procedures Enable real-time patient monitoring Facilitate decision-making training	Multidisciplinary	Healthcare simulation	Multiple tiers of functionality: Basic model with 250 questions/day Advanced model with 1,000 questions/day Unlimited model Customizable options (IV arm, female conversion kit) Warranty options from 1-5 years Cloud-connected control Optional add-ons and expansions	Regular skills assessment Scenario-based learning Team-based training Performance metrics tracking Continuous feedback implementation Structured learning progression	AI-powered speech recognition Full body patient simulator Multiple vital sign monitoring Real-time CPR metrics Live streaming capabilities Comprehensive physiological responses Multiple palpable pulse points Intubation capabilities Blood pressure measurement Heart/lung/bowel sound simulation	Enhanced AI communication capabilities Advanced physiological modeling Expanded scenario development Improved assessment metrics Integration of new medical procedures Enhanced team communication features	Nasco Healthcare - AlexHead	Speech recognition limits (depending on model) Recording time limitations Simulation log archive time restrictions Some features only available in higher-tier models Requires certain optional components for specific procedures Some advanced features (TeamSpace, Virtual Patient) only available in specific models
Aider.ai	Programming	AI pair programming tool for generating and refining code	Computer Science, Data Science	Translating prompts to executable code, Debugging	Subscription (API keys required for LLMs)	Best for developers needing rapid prototyping	Emerging tool, still gaining traction	Improving debugging suggestions and working with multiple LLMs simultaneously	Aider	Requires API keys; results can vary depending on the underlying LLM used, limited integration options.
NVivo with Lumivero AI	Qualitative Data Analysis	Analyzing qualitative data through coding and categorization	Social Sciences, Humanities	Thematic analysis, Interview analysis	License ($65+ EUR/year)	Use to analyze large-scale qualitative datasets efficiently	Well-established in qualitative research	Investigate automated coding improvements with more advanced AI integration	Lumivero	High licensing cost limits accessibility for some researchers; not ideal for small-scale projects.
ATLAS.ti	Qualitative Data Analysis	Support qualitative analysis through coding and categorization	Social Sciences, Humanities	Interview analysis, Qualitative coding	License required	Best used for in-depth interview or content analysis	Commonly used in social science research	Integrate natural language understanding to enhance coding suggestions	Atlas.ti	Requires a license; has a learning curve for new users.
Claude.ai	Quantitative Data Analysis	Assisting as a co-pilot in data analysis	Data Science, Statistics	Data cleaning, Data analysis	Subscription model	Best when used to supplement manual analysis	Competing with other AI co-pilots like ChatGPT	Explore improving contextual understanding of complex data sets	Claude	Subscription required for advanced features; context understanding is still developing.
Julius	Quantitative Data Analysis	AI assistant for statistical analysis and model building	Data Science, Social Sciences	Running statistical models, exploring datasets	Freemium	Use for exploratory data analysis before applying advanced techniques	Gaining traction in data science education	Expand integration with external datasets	Julius	Limited to freemium features, advanced functionalities require subscription
CiteThisForMe	Reference Generation	Automatic citation and bibliography generation	Academic Writing	Creating citations in multiple academic formats	Freemium	Use for quick generation of citations for short academic works	Stable with a growing user base	Expand access to different citation formats	CiteThisForMe	Limited access to citation styles in the free version
Sourcely	Reference Management	Helps with finding credible sources for academic writing	Academic Writing	Reference management, Source discovery	Freemium	Ideal for early stages of literature search	Relatively new tool with growing user base	Integration with major reference management software	Sourcely	Limited integrations, struggles with non-English sources
Zotero	Reference Management	Collect, organize, cite, and share research references	Multidisciplinary	Bibliography generation, reference organization	Free	Use to manage references and create citations for academic work	Widely adopted for personal research management	Enhance collaborative features to rival platforms like EndNote	Zotero	Limited collaborative features compared to other reference management tools
EndNote	Reference Management	Manage references, citations, and bibliographies systematically	Multidisciplinary	Organizing citations for thesis or large academic projects	Subscription	Best used for managing large-scale projects with extensive referencing	Established product with a steady user base	Improve ease of use for beginners	EndNote	Subscription-based, limited accessibility for those without funding
RefWorks	Reference Management	Manage references, generate bibliographies, and share references	Academic Writing	Creating references, managing bibliography	Subscription	Use for managing references in collaborative projects	Widely used in academic institutions	Improve user interface for more intuitive use	Refworks	Requires institutional subscription; limited for individual users without access
Mendeley	Reference Management & Collaboration	Organize research, discover content, and collaborate	Multidisciplinary	Containing reference management with collaboration features	Freemium	Use to manage references and connect with other researchers	Well-established but facing growing competition	Expand the collaboration features for team-based research	Mendeley	Limited social features compared to other platforms like ResearchGate
Notion	Research Organization & Collaboration	Note-taking, organizing research, and managing tasks	Multidisciplinary	Personal research management, team collaboration	Freemium	Best used for collaborative note-taking and organizing tasks	Increasingly popular as a personal productivity tool	Enhance academic-specific features for better organization	Notion	Lacks reference-specific features of dedicated research tools
Notebook LM (Gemini)	Research Organization & Collaboration		Multidisciplinary	Writing assistance	Free	Upload lecture recordings, textbook chapters, and research papers to help explain concepts and or write summaries.			Notebook LM	
OpenRead	Research Reading	Enhanced reading experience with notes and highlights	Multidisciplinary	Reading papers, Highlighting, Annotation	Freemium	Use for annotating papers systematically	Adoption among early researchers and students	Extend features to integrate with reference managers	OpenRead	Limited free features, premium subscription required for collaboration
VSI HoloMedicine	Virtual Reality Medical Education Immersive Healthcare Training Clinical Simulation Surgical Training Medical Device Education	Revolutionize medical training through VR Enable remote surgical proctoring Facilitate clinical reasoning development Provide medical device training Support medical student education Enable immersive anatomical learning	Multidisciplinary	Medical schools Surgical training programs Healthcare institutions Medical device training Clinical reasoning development Remote proctoring sessions Individual and group learning scenarios	Compatible with Meta Quest 2, 3, and Pro headsets Standalone functionality Wireless operation Multiple storage options Various hardware configurations Different price points for accessibility	Integration of experiential learning Combination of solo and peer learning Use of AI-powered personalized teaching Implementation of interactive annotations Regular assessment through quizzes Structured learning pathways	High-resolution VR displays Advanced hand and eye tracking AI-powered clinical reasoning modules 360-degree immersive videos Integration with DICOM data Real-time surgical streaming Mixed reality capabilities Multiple hardware options	Advanced AI integration Enhanced clinical reasoning modules Improved surgical simulation New teaching methodologies Enhanced haptic feedback Expanded medical scenarios	Appelar	Hardware-dependent features Varying capabilities based on headset model Storage limitations based on device Price variations between models Weight considerations for extended use Feature availability varies by headset model
Midjourney	Visual Art	Produces high-quality artwork for creative projects	Multidisciplinary	Creating visual art	$10/month	Use for generating visuals based on short text prompts			Midjourney	
Grammarly	Writing Assistance	Improve grammar and style of text	All Fields	General writing, Manuscript preparation	Freemium	Use alongside domain-specific proofreading	Mature product, highly adopted	Investigate AI-based context-specific writing improvements for academic writing	Grammarly	Freemium version lacks advanced grammar tools; not optimized for discipline-specific language.
QuillBot	Writing Assistance	Paraphrasing and improving text clarity and flow	Multidisciplinary	Enhancing manuscript clarity	Freemium	Use for paraphrasing and enhancing readability	Commonly used for language enhancement	Add more specific academic language modules	QuillBot	Limited functionality in the freemium version, character limit for non-paid users
Distiller SR	Writing Assistance	Automates literature review process	Multidisciplinary	Writing assistant	Premium paid software license	Automates every satage of literature review to produce EB research faster		Literature review	Distiller SR	
Scrivener	Writing Tool	Organize writing projects, take notes, and compile sections of manuscripts	Humanities, Multidisciplinary	Organizing and managing large writing projects	One-time purchase	Best used for book writing or dissertations	Popular among writers of large projects	Expand collaborative writing features	Literature and latte	Not optimized for collaborative writing, no real-time editing features
Gemini	Conversational AI	Answering questions and assisting in text	Multidisciplinary	Q&A, Generating structured content	Freemium	Best for research assistance and natural language understanding	Google's AI improving factual accuracy	Enhance academic citation capabilities	Google Gemini	Limited accuracy in specialized fields, evolving for research applications
Meta AI	Conversational AI & Research	AI model for research and productivity	Multidisciplinary	Research summarization, Text & Code Assistance	Free	Used for AI-driven insights and exploration	Meta's LLM with increasing capabilities	Expand academic research applications	Meta AI	Early development for academic research, lacks citation capability
Grok	Conversational AI	AI for real-time insights and research analysis	Multidisciplinary	Q&A, Trend Analysis, General Research	Freemium	Best for social media and real-time research insights	Developed by xAI, integrated with X (Twitter)	Improve accuracy and academic dataset accessibility	xAI Grok	Limited dataset availability, currently more focused on real-time trends
DeepSeek	Conversational AI & Research	AI-assisted research insights and structuring	Multidisciplinary	Analyzing datasets, Generating structured content	Freemium	Useful for AI-driven academic research assistance	Emerging tool for structured research	Expand dataset integration and cross-disciplinary insights	DeepSeek	Limited adoption, needs improved academic dataset integration