

ARA: Artificial Intelligence-Powered Research Assistant Dr. Devchand Chaudhari¹ , Devansh Parapalli² , Kaustubh Warade³ , Yashasvi Thool⁴ and Aditya Deshmukh⁵ Department of Computer Science and Engineering Government College of Engineering Nagpur, India Email: { 1djchaudhari,2dsparapalli,3kdwarade,4ybthool, 5 asdeshmukh}@gcoen.ac.in Abstract—The exponential growth of research data and information sources has posed significant challenges for researchers, leading to information overload, disconnected insights, missed opportunities, and inefficiencies in organizing and synthesizing knowledge. To address these issues, we have developed ARA, an innovative application leveraging advanced AI technologies to revolutionize the research process by enhancing... (only first 800 chars shown)



Analysis complete. Our feedback is listed below in printable form. Some of the items have been truncated or removed to provide better print compatibility.

Alerts

Research Paper With No Works Cited List?

You marked this as a 'Research Paper' but no Works Cited, Bibliography, or similar list of sources could be found. If this actually is a research paper be sure to include a list of sources for the paper in your final draft.

Plagiarism Detection

Original Work

Originality: 100%



Excellent job! There are no signs of plagiarism throughout your work.

More info on our originality scoring process (<http://www.PaperRater.com/page/plagiarism-detection>) .

Upgrade to premium (<http://www.PaperRater.com/pricing>) to see which phrases were found to be un-original

Spelling

Spelling Suggestions

| Error | Suggestion |
|----------|----------------------|
| Devchand | Deckhand |
| Devansh | Evans, Deans, Divans |

| | |
|----------------|--|
| Kaustubh | Possible spelling mistake found |
| Yashasvi | Possible spelling mistake found |
| cuttingedge | cutting edge |
| Lex | Led, Let, Ex, Leg, Lee, Alex, LED, Rex, Flex, Lea, Len, Lew, TeX, Hex, Lax, Mex, LyX, Lox, Vex, Leo, Le, Les, Tex, Lei, Lix, Sex, L ex, Le x |
| evidencebased | evidence based |
| summarizations | Possible spelling mistake found |
| Zotero | Voters, Zero, Voter, Romero, Zorro, Bolero, Hetero, Doter, Doters, Zoster |
| Mendeley | Mandela |
| LLMs | Alms, Elms, Lams, LL Ms |
| summarization | Possible spelling mistake found |
| LLMs | Alms, Elms, Lams, LL Ms |
| LLMs | Alms, Elms, Lams, LL Ms |
| Summarization | Possible spelling mistake found |
| LLMs | Alms, Elms, Lams, LL Ms |
| LLMs | Alms, Elms, Lams, LL Ms |
| LLMs | Alms, Elms, Lams, LL Ms |

| | |
|------------------|---|
| summarization | Possible spelling mistake found |
| Workspace | Workplace |
| workspace | work space, works pace |
| workspace | work space, works pace |
| workspace | work space, works pace |
| scape | scale, escape, shape, scope, cape, scare, scrape, s cape |
| datasets | data sets |
| workspace | work space, works pace |
| APIs | Axis, Apes, Apia, Avis, Apps, Apish, Als, API, Pis, API s |
| microservices | micro services |
| modularity | popularity, jocularly |
| scalability | capability |
| summarization | Possible spelling mistake found |
| Kubernetes | Possible spelling mistake found |
| scalability | capability |
| onpremises | on premises |
| knowledgesharing | knowledge sharing |
| datasets | data sets |
| preprocessing | reprocessing, p reprocessing |
| debiasing | debasing |
| ELNs | Elms, Eons, Ells, Elks, Ens |

| | |
|------------------|--------------------------------------|
| customizations | customization, customization s |
| interpretability | interpret ability |
| explainability | explain ability |
| transformative | trans formative |
| interpretability | interpret ability |
| metaanalysis | meta analysis |
| transformative | trans formative |
| transformative | trans formative |

Grammar

Grammar Suggestions

No grammar errors detected.

Word Choice

Word Choice Suggestions

Suggestions for improving word choice appear in the text underlined in blue. Select this text to view the tips.

Word Choice

Usage of Bad Phrases

Bad Phrase Score: 0.46 (lower is better)

The Bad Phrase Score is based on the quality and quantity of trite or inappropriate words, phrases, egregious misspellings, and cliches found in your paper. You did equal or better than **99%** of the people in your education level.



Terrific work! Based on your phrases, you scored much higher than average.

Style

Usage of Transitional Phrases

Transitional Words Score: 78

This score is based on quality of transitional phrases used within your paper. You did equal or better than **73%** of the people in your education level.



Good job! Your usage of transitional phrases is above average. Nevertheless, you may still benefit from reading the info below.

One sign of an excellent writer is the use of transitional phrases (e.g. therefore, consequently, furthermore). Transitional words and phrases contribute to the **cohesiveness** (http://www.PaperRater.com/vocab_builder/show/cohesiveness) of a text and allow the sentences to flow smoothly. Without transitional phrases, a text will often seem disorganized and will most likely be difficult to understand. When these special words are used, they provide organization within a text and lead to greater understanding and enjoyment on the part of the reader.

The following transitional phrases were found in your document:
and, however, rather, furthermore, as a result

Consider using additional transitions where appropriate:

- consequently (http://paperrater.com/vocab_builder/show/consequently)
- moreover (http://paperrater.com/vocab_builder/show/moreover)
- nevertheless (http://paperrater.com/vocab_builder/show/nevertheless)
- notwithstanding (http://paperrater.com/vocab_builder/show/notwithstanding)
- accordingly (http://paperrater.com/vocab_builder/show/accordingly)
- conversely (http://paperrater.com/vocab_builder/show/conversely)
- ordinarily (http://paperrater.com/vocab_builder/show/ordinarily)

These words and phrases fall under a few grammatical categories:

- Conjunctions: *but, provided, and, although*
- Prepositional phrases: *in addition to, in conclusion*
- Adverbs: *also, however, nevertheless*

Consider this example:

I lost my money; **therefore**, I could not buy a ticket.

The word '**therefore**' contributes to greater unity or cohesion between sentences and allows the text to flow more smoothly.

Style

Sentence Length Info

Total Sentences: 115

Avg. Length: 23.7 words

Short Sentences (< 17 words): 15 (13%)

Long Sentences (> 35 words): 7 (6%)

Sentence Variation: 7.2 words (std deviation)



You seem to have a good mixture of short and long sentences throughout your paper.

Line chart of the length of each sentence (first 50 sentences). A jagged chart indicates variation.



Helpful Resources:

- Effective Use of Sentence Length (<http://blog.paperrater.com/2015/05/effective-use-of-sentence-length.html>)

Style

Readability Indices

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Style

Passive Voice

Passive Voice Sentences: 13.9%

Many writers feel that passive voice represents poor writing form, as it allows the object of an action to be the subject of a sentence. The following sentences were detected as having passive voice:

- ... of research information that can **be understood** and processed by AI models.
- ... of research information that can **be understood** and processed by AI models.
- ... projects often had limited scope or **were discontinued**, leaving a gap for a comprehensive ...
- These models **are trained** on extensive text corpora, allowing ...
- ... Web Ontology Language (OWL) [16] **are utilized** to create structured knowledge ...
- ... and hypotheses that may not **be explicitly stated** in the original research literature.
- ... or confidential information **is protected**.
- ... and collaboration module in ARA **is designed** to create a seamless and productive ...
- ... architecture and detailed designs **were meticulously planned** based on the requirements.
- ARA's front-end user interface **was carefully designed** using SvelteKit, a component ...
- ... system, and user acceptance tests, **was conducted** using automated frameworks to ...
- Upon successful testing, ARA **was deployed** into production, with comprehensive ...
- Robust security measures **were incorporated**, including user authentication, ...
- Continuous efforts **are required** to identify and mitigate such ...
- ... research assistant can **be fully realized**, driving innovation, collaboration, ...
- ... the pace of scientific progress **is poised** to accelerate, unlocking new ...

Helpful Resources:





Style

Sentence Beginnings

Simple Sentence Starts: 15%

You did equal or better than **70%** of the people in your education level.



Well done. Your writing is above average in this respect.

Variety is the **hallmark** (http://www.PaperRater.com/vocab_builder/show/hallmark) of a good writer and this is especially true in regards to sentence starts. Creatively arranging sentence beginnings breaks up the **monotony** (http://www.PaperRater.com/vocab_builder/show/monotony) and choppy style associated with a simple noun phrase followed by a verb. This does NOT mean that all sentences should begin with prepositional phrases, transitions, or adverbial phrases, but it does mean that you should be certain to pay attention to sentence starts and deliberately edit for variety if necessary. Here are some simple sentence starts that we found in your text:

- **ARA represents a...**
- **We present the...**
- **ARA represents a...**
- **Several research projects have** explored...
- **ARA aims to...**
- **ARA harnesses the...**
- **ARA employs** semantic...
- **ARA facilitates** several...
- **ARA plays a...**
- **ARA provides a...**
- **ARA provides** secure...
- **Rigorous testing including** unit...
- **Robust security measures were** incorporated...
- **We conducted** rigorous...
- **Its advanced** information...
- **Continuous efforts are** required...
- **ARA represents a...**

Starts by Part of Speech:

Adjective: 4%

Adverb: 5%

Article: 0%

Conjunction: 0%

Noun: 25%

Preposition: 22%

Pronoun: 3%

Verb: 1%

Other: 31%



- Sentence Beginnings - your sentences' first impression
(<http://blog.paperrater.com/2015/06/sentence-beginnings.html>)

Vocabulary Words

Usage of Academic Vocabulary

Vocabulary Score: 568.6

This score is based on the quantity and quality of scholarly vocab words found in the text. You did equal or better than **97%** of the people in your education level.



Vocabulary Word Count: 332

Percentage of Vocab Words: 14.65%

Vocab Words in this Paper (top 20):

nuanced, inefficiencies, leveraging, synthesis, implementation, mechanisms, contextual, frameworks, fragmented, facilitate, paradigm, comprehensive, elicit, consensus, autonomous, integrating, holistic, fostering, interdisciplinary, employs



Your knowledge of refined language is magnificent. Visit our **Vocab Builder** (http://www.PaperRater.com/vocab_builder/index) to expand your internal dictionary even more.

Tips

Whether you are writing for a school assignment or professionally, it is imperative that you have a vocabulary that will provide for clear communication of your ideas and thoughts. You need to know the type and level of your audience and adjust your vocabulary accordingly. It is worthwhile to constantly work at improving your knowledge of words. To help with this task, please consider using our **Vocabulary Builder** (http://www.PaperRater.com/vocab_builder/index) to improve your comprehension and usage of words.

Grade

Auto Grader

Grade: 98 A

The grade above is NOT complete! We do not actually use a crystal ball to generate your grade. Instead, this grade takes into account spelling, grammar, word choice, style, vocabulary, and more; but it does NOT examine the *meaning* of your words, how your ideas are structured, or how well your arguments are supported. We should also mention that our automated grader doesn't **always** get things right. So, please consider this grade to be one facet of your paper's overall grade.

