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IMPACT OF ARTIFICIAL GENERAL INTELLIGENCE AND EMERGING ADVANCED AI SYSTEMS ON SOCIETY. A STUDY OF AI ADOPTION AND PERCEPTIONS AMONG STUDENTS, EMPLOYEES, PROFESSIONALS, AND GOVERNMENT EMPLOYEES WRT MUMBAI AND NAVI MUMBAI.

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Abstract - *Artificial intelligence (AI), particularly generative AI and AI assistant systems, is increasingly influencing education, organisational work, professional practice, and public administration. This study examined AI adoption, awareness, attitudes, and perceived risks among students, private/non-government employees, professionals, and government employees in Mumbai and Navi Mumbai. The study analysed 200 questionnaire responses, comprising 50 respondents from each occupational group. Of the respondents, 55.5% were from Mumbai and 44.5% from Navi Mumbai. The analysis indicated that 62.5% of respondents described themselves as somewhat or very familiar with AI, while 67% reported using AI tools sometimes, often, or daily. ChatGPT was the most frequently identified AI tool, recognised or used by 75% of respondents. Respondents generally perceived AI as beneficial for improving efficiency and the quality of work, although trust in AI-generated information was comparatively moderate. Verification of AI-generated information received a mean rating of 4.03 on a five-point scale, highlighting the importance of checking AI outputs. Concerns regarding privacy, bias, accuracy, and employment impacts remained relevant. Furthermore, 75% of respondents had heard of Artificial General Intelligence (AGI), although their reported understanding varied. Approximately 68.5% agreed or strongly agreed that AI use should be supported by appropriate guidelines and safeguards. Practical AI training, improved understanding of AI accuracy and limitations, and stronger privacy protections emerged as prominent areas of support. Overall, the response patterns suggest a combination of perceived benefits, cautious trust, and demand for responsible AI adoption. The study highlights the importance of AI literacy, verification practices, data protection, and appropriate institutional safeguards across educational, professional, organisational, and governmental settings. Perceptions of current AI systems and expectations regarding AGI were considered distinct aspects of AI awareness.*

Keywords: Artificial **Intelligence; Generative AI; AI Adoption; Public Perception; AI Literacy; Artificial General Intelligence (AGI); Mumbai; Navi Mumbai.**

INTRODUCTION

Artificial intelligence (AI) has become an increasingly prominent part of contemporary digital life, influencing education, organisational activities, professional practice, and public administration. AI systems are capable of performing tasks such as recognising patterns, generating content, making predictions, supporting decisions, and interacting through natural language. The growing availability of generative AI has made these capabilities more accessible through conversational assistants, writing and coding applications, information-search tools, summarisation systems, image generators, and workplace software. Consequently, individuals encounter AI in different ways, whether through personal use, educational activities, organisational requirements, or digital public services.

The impact of AI depends not only on its technical capabilities but also on how people understand, use, and evaluate it. Awareness, accessibility, perceived usefulness, trust, digital skills, and knowledge of potential limitations can influence the extent to which individuals adopt AI tools. Students may use AI to understand concepts and prepare study materials, employees may use it to summarise documents or improve productivity, professionals may employ it for research and analysis, and government employees may encounter it in administrative processes and public-service delivery. These applications involve different levels of responsibility, confidentiality, and accountability, making it important to examine AI adoption across occupational and educational groups.

The survey responses analysed in this study provide insight into AI awareness and usage among four respondent groups: students, private and other organisational employees, professionals, and government employees in Mumbai and Navi

Mumbai. The dataset comprises 200 responses, with 50 respondents in each group. The analysis considers familiarity with AI, frequency and purposes of use, perceptions of usefulness, trust in AI-generated information, awareness of risks, employment-related concerns, and interest in AI training. It also examines attitudes towards responsible AI adoption, including the importance of verifying AI-generated content and protecting personal information.

An additional dimension of the study is awareness of Artificial General Intelligence (AGI). AGI is commonly used to describe a prospective form of AI capable of performing a broad range of intellectual tasks across different domains at a level comparable to or beyond human capability. It is important to distinguish this concept from currently available generative AI systems, whose capabilities and limitations vary across tasks. Accordingly, the study treats respondents' familiarity with AGI as a measure of awareness and perception rather than evidence that AGI has been achieved.

Mumbai and Navi Mumbai offer a relevant geographical context for examining these issues because the two urban areas include diverse educational institutions, businesses, professional environments, and government organisations. However, living or working within the same metropolitan region does not necessarily imply equal access to AI tools, comparable levels of digital literacy, or similar opportunities for training. Comparing the four respondent groups can therefore help identify differences in reported usage, perceived benefits, concerns, and training needs within the surveyed sample.

Overall, this study examines the relationship between AI awareness, adoption, trust, and perceived risks across different segments of the surveyed population.

LITERATURE REVIEW

The following five recent studies and policy sources provide a foundation for the proposed research. They are summarised critically rather than treated as proof that the same findings will apply to Mumbai and Navi Mumbai.

Bera, Bera, and Rahut (2026): AI adoption among young Indians:

Bera, Bera, and Rahut studied AI adoption among urban Indian respondents, focusing particularly on young adults and including professionals and AI-domain experts. Their study used data from 305 respondents and applied structural equation modelling and a Multiple Indicators Multiple Causes model. The authors reported that behavioural intention, social influence, and digital engagement were positively associated with adoption; performance expectations, ease of use, and self-empowerment were relevant to student adoption. The paper also noted the importance of equitable access and potential gender differences. This is highly relevant because it provides recent Indian evidence and supports measuring perceived usefulness, ease of use, social influence, and digital engagement. Its focus on young urban respondents, however, does not replace a four-group comparison that includes government employees and a specific Mumbai–Navi Mumbai sample.

Savolainen, Ylinen, Grönroos, and Oksanen (2026): AI transformation in working life:

This systematic review synthesised 24 empirical studies published across the 2020–2024 evidence window, examining workers' experiences and attitudes toward AI-related workplace change. It found a mixed picture: AI could be associated with efficiency and decision support, while also creating uncertainty about role changes and job security. The review highlighted the value of transparent and ethical implementation, communication, training, fairness, and human oversight. The present study builds on this by asking employees and professionals directly about their uses, perceived benefits, concerns, and training needs. A limitation in applying the review locally is that the included studies span different countries and sectors, and the evidence was particularly visible in healthcare and education.

Azzahro, Hidayanto, and Shihab (2025): Citizens' perceptions of AI in government:

This systematic literature review used a PRISMA-based process to examine 41 articles about citizens' perceptions of AI in government services. It identified six broad factors: perceived benefits, perceived concerns, service characteristics, trust, individual characteristics, and external factors. Although the review focuses on citizens' perceptions rather than the experiences of government employees specifically, it shows why public-sector AI acceptance cannot be reduced to efficiency alone. For the proposed research, it justifies measuring trust, perceived risk, service context, and organisational or institutional influences among government employees. It also suggests that public-sector questions should address accountability and human review.

Salari and colleagues (2025): Generative AI and the future labour market:

This systematic review examined 14 studies on the potential labour-market effects of generative AI. The review described potential gains in time and efficiency, alongside the possibility that some roles or opportunities may shrink while new roles emerge. Its central implication is that employment effects should be assessed with nuance rather than framed as inevitable universal job replacement. This informs the present study's distinction between perceived job-security concerns, perceived task assistance, and expectations about future skills. Since the review included a relatively small number of studies, and the labour-market impacts vary by task and context, its conclusions should guide questions rather than be assumed as local outcomes.

UNESCO and India's Ministry of Electronics and Information Technology (2026):

India AI Readiness Assessment:

The India AI Readiness Assessment Report, launched by UNESCO and MeitY in February 2026, draws on desk research, focus groups, interviews, and multi-stakeholder consultations. Its public summary highlights ethical governance, workforce readiness, infrastructure, investment, public trust, inclusion, and coordination across levels of government. It is a policy assessment rather than a respondent-level adoption survey, but it gives the proposed study a current Indian governance context. The survey can contribute local evidence about awareness, perceived readiness, training, and trust that may be useful to institutions and public agencies.

Synthesis and research gap:

Across these sources, several recurring themes emerge: usefulness and ease of use can support adoption; social and digital contexts matter; workplace experience combines opportunity and concern; trust and perceived risk influence acceptance in public services; and responsible adoption requires skills, transparency, fairness, and oversight. However, the reviewed evidence does not provide a single directly comparable picture of students, employees, professionals, and government employees within Mumbai and Navi Mumbai. Nor should findings about current generative AI be treated as direct evidence about AGI. The proposed study addresses this contextual and comparative gap by using common measures across the four groups while retaining group-specific questions where appropriate.

RESEARCH OBJECTIVES

1. To assess awareness, frequency, purposes, and patterns of AI use among students, employees, professionals, and government employees in Mumbai and Navi Mumbai.
2. To examine respondents' perceived benefits, risks, trust, AI literacy, and concerns about employment and skills.
3. To compare AI adoption and perceptions across the four respondent groups and identify relevant demographic or contextual differences.
4. To assess how perceived usefulness, trust, perceived risk, and AI literacy are associated with willingness to adopt AI and expectations about future AGI.

RESEARCH METHODOLOGY

Research design

A cross-sectional, descriptive and comparative survey design is proposed. It captures respondents' experiences and perceptions at one point in time. A small number of optional open-ended questions may be added to collect examples of benefits, concerns, and training needs. This mixed-format approach can add context but does not make the study a causal or longitudinal investigation.

Population and unit of analysis

The target population comprises adults or eligible participants from four groups living, studying, or working in Mumbai or Navi Mumbai: students; employees in organisations; professionals; and government employees. Define eligibility clearly in the final protocol. If minors are included among students, additional ethics approval, parental consent, and age-appropriate safeguards may be required; an adult-only sample is simpler for an initial study.

Sampling approach and sample size

A stratified approach is recommended, with the four respondent groups treated as strata. Recruitment may use educational institutions, workplaces, professional networks, and government offices, subject to permission. Where probability sampling is not feasible, use transparent quota-based or purposive recruitment and clearly acknowledge limits to generalisation. The final sample size should be determined through a power analysis based on the primary outcome, planned test, expected effect size, significance level, and desired power. Avoid choosing a sample size solely because it is convenient.

Type and approach of research

The proposed study is descriptive and comparative. It is descriptive because it summarises respondents' reported awareness, frequency of AI use, perceived usefulness, trust, concerns, and training needs. It is comparative because it examines whether reported AI-use patterns vary across students, private/non-government employees, professionals, and government employees. The planned approach is primarily quantitative, using closed-ended questionnaire items and statistical analysis. One optional open-ended question may provide qualitative context through thematic coding.

Research design

A cross-sectional survey design is proposed, meaning responses are collected at one point in time rather than tracking the same participants over time. Google Forms is the proposed collection instrument. This design can describe distributions and associations, but it cannot establish that AI use causes changes in productivity, employment, or attitudes.

Population, location, sample size and sampling

The intended population comprises eligible students, employees, professionals, and government employees who live, study, or work in Mumbai or Navi Mumbai. The working target is 200 valid responses, ideally with 50 respondents in each of the four groups. A quota-based convenience sampling approach may be practical where access to a full sampling frame is unavailable. Recruitment channels and eligibility criteria should be documented. Such a non-probability sample should not be described as random or automatically representative.

Dataset used for this demonstration: 200 rows, with 50 records assigned to each respondent group. The CSV includes generated Indian-style names and gender labels for practice only. These are not actual participants or verified demographic facts. The 55% male / 45% female split was imposed during generation and therefore cannot be interpreted as a survey finding.

Data collection tool and variables

The questionnaire contains consent and eligibility items, respondent category and age group, AI awareness and use, perceived usefulness, ease of use, trust, verification behaviour, perceived risks, employment concerns, AGI awareness and expectations, and training or policy needs. Multi-select questions are analysed by counting each selected option; percentages can exceed 100% because participants can select more than one option. **8.5 Statistical techniques**

The primary analysis should be pre-specified. Statistical assumptions and expected cell counts must be checked. Report p-values with effect sizes and interpret practical significance, not just whether a threshold is crossed. For an ordinal individual item, median and response distributions are useful; if regression is required for an ordinal outcome, ordinal logistic regression may be more appropriate than ordinary least squares.

Data cleaning and preparation

- Check the row count, column names, missing values, duplicate records and allowed response values.
- Verify that only eligible, consented, genuine submissions are retained in the final real dataset.
- Keep the original export unchanged and conduct cleaning on a copy; document all exclusions and recoding decisions.
- Convert Likert answers to numeric values only after verifying that the coding direction is consistent.
- For checkbox questions, split the semicolon-separated choices and count each selection separately.

Descriptive results from the supplied synthetic dataset

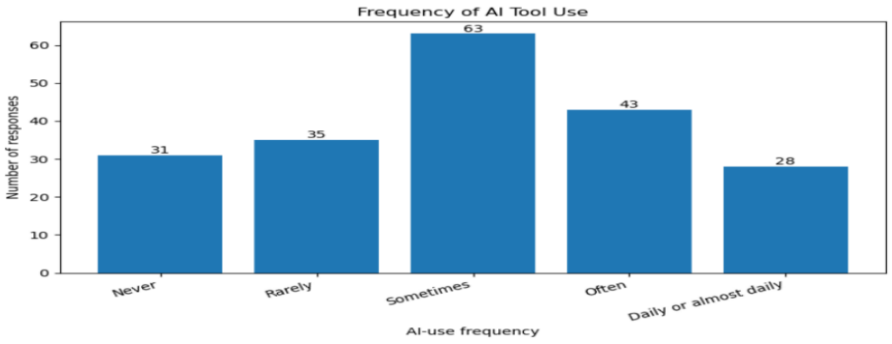
Interpretation template: "In the analysed sample, [x%] reported using AI [frequency category]". In the final project, fill this sentence with the corresponding values from the genuine survey dataset and avoid generalising beyond the sampling design.

RESEARCH OBJECTIVES & HYPOTHESES

RESEARCH OBJECTIVES	NULL HYPOTHESES (H■)	ALTERNATIVE HYPOTHESES (H■)
1. To assess awareness, frequency, purposes, and patterns of AI use among students, employees, professionals, and government employees in Mumbai and Navi Mumbai.	H■■: There is no significant difference in AI awareness and usage patterns among respondents.	H■■: There is a significant difference in AI awareness and usage patterns among respondents.
2. To examine respondents' perceived benefits, risks, trust, AI literacy, and concerns about employment and skills.	H■■: Respondents do not differ significantly in their perceptions of AI benefits, risks, trust, and AI literacy.	H■■: Respondents differ significantly in their perceptions of AI benefits, risks, trust, and AI literacy.
3. To compare AI adoption and perceptions across the four respondent groups and identify relevant demographic or contextual differences.	H■■: There is no significant difference in AI adoption and perceptions across the four respondent groups.	H■■: There is a significant difference in AI adoption and perceptions across the four respondent groups.
4. To assess how perceived usefulness, trust, perceived risk, and AI literacy are associated with willingness to adopt AI and expectations about future AGI.	H■■: Perceived usefulness, trust, perceived risk, and AI literacy are not significantly associated with willingness to adopt AI or expectations about future AGI.	H■■: Perceived usefulness, trust, perceived risk, and AI literacy are significantly associated with willingness to adopt AI or expectations about future AGI.

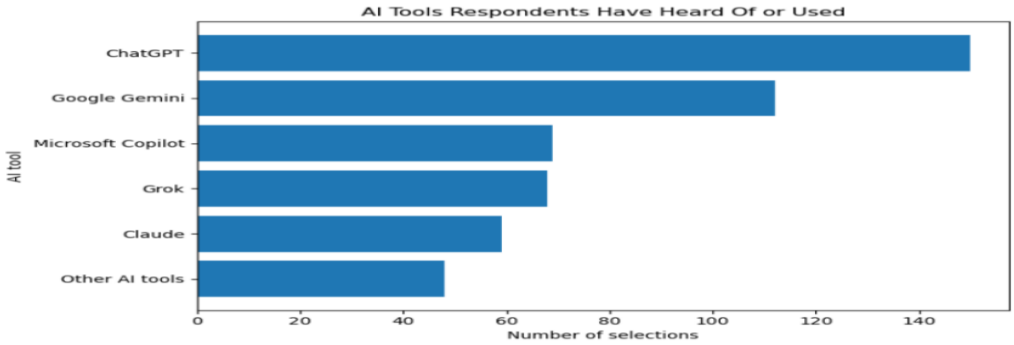
Data Analysis and Interpretation

Q. Frequency of AI Tool Use: How often do respondents use AI tools?



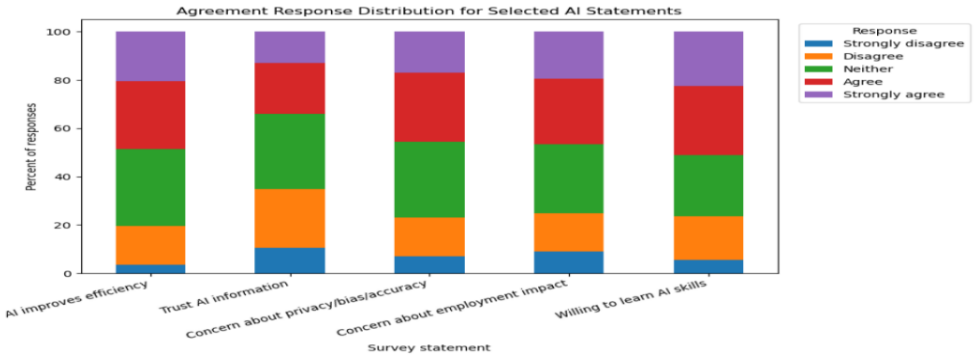
The chart shows how frequently the 200 respondents use AI tools. The largest group, consisting of 63 respondents, uses AI tools sometimes, followed by 43 who use them often. Meanwhile, 35 respondents rarely use AI, 31 never use it, and 28 use it daily or almost daily. Overall, the results indicate that AI tools are used by many respondents, although frequent daily usage is less common.

Q. AI Tools Awareness: Which AI tool is the most popular among respondents?



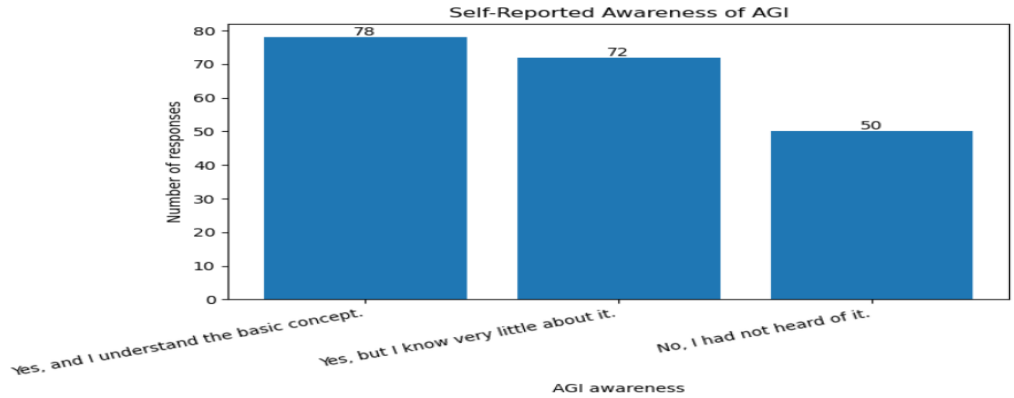
This chart compares the AI tools that respondents have heard of or used. ChatGPT is the most frequently selected tool, with approximately 150 selections, followed by Google Gemini with around 112. Microsoft Copilot and Grok receive approximately 69 and 68 selections, respectively, while Claude receives around 59. Other AI tools receive approximately 48 selections, indicating that ChatGPT has the highest recognition or usage among the tools included in the survey.

Q. Opinions on AI: What are respondents' opinions about the benefits and risks of AI?



This stacked bar chart illustrates the percentage distribution of responses to five statements about AI. Responses concerning improved efficiency show a relatively positive pattern, while trust in AI information attracts more disagreement and neutral responses. Privacy, bias, accuracy, and employment concerns also receive mixed responses, reflecting uncertainty about AI's broader implications. Despite these concerns, many respondents express agreement or strong agreement with the willingness to learn AI skills, suggesting an interest in developing AI-related knowledge.

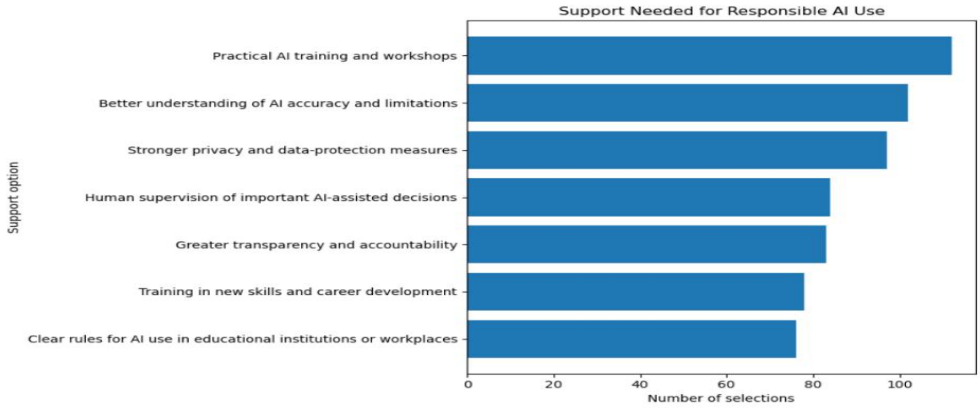
Q. AGI Awareness: How many respondents understand the basic concept of AGI?



This chart presents respondents' self-reported awareness of Artificial General Intelligence (AGI). A total of 78 respondents say they understand the basic concept, while 72 have heard of AGI but know very little about it. The remaining 50

respondents report that they had not heard of AGI. These results suggest that although 150 respondents have at least some awareness of AGI, detailed understanding may be limited among a substantial proportion of the sample.

Q. Support for Responsible AI: What support do respondents think is needed for responsible AI use?



This chart highlights the types of support respondents believe are necessary for responsible AI adoption. Practical AI training and workshops receive the highest number of selections, at approximately 112, followed by better understanding of AI accuracy and limitations, at around 102. Stronger privacy and data-protection measures are also highly valued, with approximately 97 selections. Human supervision, transparency, career-development training, and clear institutional rules receive substantial support as well, indicating that respondents value both practical education and safeguards for responsible AI use.

FINDINGS

1. Frequency of AI Tool Use: Most respondents use AI tools occasionally, with 63 respondents using them sometimes and 43 using them often. Only 28 respondents use AI daily or almost daily.

2. Awareness of AI Tools: ChatGPT is the most widely recognised or used AI tool, with approximately 150 selections. Google Gemini ranks second with around 112 selections, showing strong awareness of these AI applications.

3. Opinions on AI: Respondents generally recognise AI's potential to improve efficiency and productivity. However, concerns about privacy, accuracy, bias, employment impacts, and trust in AI-generated information remain.

4. Awareness of AGI: Out of 200 respondents, 78 understand the basic concept of AGI, while 72 have heard of it but know very little. The remaining 50 respondents have not heard of AGI.

5. Support for Responsible AI Use: Practical AI training and workshops received the highest support, with approximately 112 selections. Respondents also highlighted the need for better understanding of AI limitations and stronger data-protection measures.

CONCLUSION

This research is designed to examine how students, employees, professionals, and government employees in Mumbai and Navi Mumbai understand and use advanced AI systems, what benefits and risks they perceive, and how those perceptions relate to AI adoption and future preparedness. A descriptive and comparative survey is suitable for establishing an initial picture of awareness, use patterns, trust, perceived usefulness, employment concerns, and training needs.

The analysis plan combines descriptive statistics with inferential tests. Frequencies and percentages will describe the sample and AI-use patterns; Likert summaries will describe perceived benefits and concerns; a chi-square test will examine whether AI-use frequency is associated with respondent group; and a rank correlation will explore the relationship between perceived usefulness and willingness to learn AI skills. These techniques provide a structured way to answer the research questions while keeping the interpretation proportionate to the data.

The supplied 200-row dataset is synthetic and was used only to demonstrate the analytical workflow. Its numerical results must not be represented as findings from actual Mumbai or Navi Mumbai participants. Consequently, no conclusion about the real population, and no claim that either hypothesis has been empirically supported by fieldwork, can be made at this stage. A valid final conclusion must be written after the genuine Google Forms data have been collected, cleaned, analysed, and checked.

The expected value of the completed study is practical rather than predictive: it can help educational institutions, employers, professional bodies, and government offices identify relevant AI-literacy needs and responsible-use safeguards. The study should distinguish current AI applications from hypothetical AGI, and recommendations should be grounded in the actual evidence rather than assumptions about the future.

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