Undergraduate Attitudes Toward Artificial General Intelligence: A Comprehensive Survey Analysis

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Abstract

This report presents a comprehensive analysis of a survey on undergraduate attitudes toward Artificial General Intelligence (AGI) conducted among 1,000 students at a public R1 university. Using a mixed-methods approach combining quantitative and qualitative analyses, we examine students' understanding of AGI, their expectations regarding its development timeline, perceived risks and benefits, and views on governance. The findings reveal a pattern of cautious optimism among undergraduates, with significant variations across academic disciplines. Technical fields express more positive attitudes toward AGI, while humanities and social sciences emphasize potential risks. Despite these differences, there is strong consensus on the importance of AGI governance and education. The report identifies distinct attitudinal profiles and underlying dimensions that structure undergraduate perspectives on AGI, offering insights for education, communication, and policy development.

Executive Summary

This report presents findings from a comprehensive survey of 1,000 undergraduate students at a public R1 university regarding their attitudes toward Artificial General Intelligence (AGI). The survey explored students' understanding of AGI, their expectations regarding its development timeline, perceived risks and benefits, and views on governance and societal preparation.

Key findings include:

1. **Cautious Optimism:** Undergraduates show a pattern of cautious optimism toward AGI, with slightly positive overall sentiment (mean = 3.37 on a 5-point scale) and high assessment of potential benefits (mean = 3.87), while also recognizing moderate to high risks (mean = 3.16).

2. **Timeline Expectations:** Most undergraduates (53.4%) expect AGI to be developed within the next 25 years, suggesting they view it as a near to medium-term technological development rather than a distant possibility.

3. **Disciplinary Divides:** Field of study emerges as a strong predictor of AGI attitudes, with technical fields (Computer Science/IT, Engineering) generally expressing more positive sentiment and perceiving higher benefits, while humanities and social sciences perceive higher risks.

4. **Information Source Effects:** Information sources significantly influence AGI attitudes, with academic courses and scientific publications associated with more positive sentiment, while entertainment media is associated with higher risk perception.

5. **Career Relevance:** A majority of students (61.8%) anticipate that AGI will have a significant impact on their future careers, regardless of their field of study, indicating widespread recognition of AGI as a transformative technology.

6. **Governance Consensus:** There is strong agreement (79.5%) on the importance of governance and regulation for AGI, with government/regulators seen as the primary responsible entity (23.5%), followed by tech companies, international organizations, and academic researchers.

7. **Societal Preparedness Gap:** A majority of students (53.5%) believe society is poorly prepared for AGI, while simultaneously emphasizing the importance of education about AGI (77.8% rating it highly important), suggesting a perceived need for greater societal readiness.

8. **Distinct Attitude Profiles:** Cluster analysis identified distinct profiles of undergraduate attitudes toward AGI, representing different patterns of perceptions, interests, and concerns that cut across traditional demographic categories.

These findings provide a comprehensive picture of how undergraduates perceive AGI, highlighting both areas of consensus and divergence across different demographic and attitudinal dimensions. The results have implications for education, communication, and policy development related to this emerging technology.

1. Introduction

Artificial General Intelligence (AGI) represents a potential future technology that could match or exceed human capabilities across a wide range of cognitive tasks. As AGI research advances, understanding public perceptions—particularly among young adults who will live with the consequences of AGI development—becomes increasingly important for responsible innovation and governance.

This report presents findings from a comprehensive survey of 1,000 undergraduate students at a public R1 university regarding their attitudes toward AGI. The survey explored students' understanding of AGI, their expectations regarding its development timeline, perceived risks and benefits, and views on governance and societal preparation.

The undergraduate population represents a particularly important demographic for AGI perception research for several reasons:

1. **Future Decision-Makers**: Today's undergraduates will become tomorrow's researchers, policymakers, business leaders, and citizens who will influence AGI development and governance.

2. **Digital Natives**: Undergraduates have grown up in a digital environment and have witnessed rapid technological change, potentially giving them different perspectives from older generations.

3. **Diverse Disciplinary Perspectives**: The undergraduate population encompasses students from various academic disciplines, allowing for comparison of perspectives across different fields of study.

4. **Career Stake**: Undergraduates are at a stage where they are making career decisions that may be significantly affected by AGI development.

This report aims to provide a nuanced understanding of undergraduate attitudes toward AGI, identifying patterns, correlations, and distinct perspectives that can inform education, communication, and policy development related to this emerging technology.

2. Methodology

2.1 Survey Design

The survey was designed to capture a comprehensive picture of undergraduate attitudes toward AGI through a mix of closed-ended Likert scale questions and open-ended response items. The survey included the following sections:

1. **Demographics**: Age, gender, academic year, field of study, AI familiarity, technical background, and information sources about AI.

2. **AGI Understanding and Timeline**: Open-ended definition of AGI and expectations regarding development timeline.

3. **General Attitudes**: Overall sentiment, interest level, and anticipated career impact.

4. **Applications and Personal Use**: Likelihood of AGI applications in various domains and anticipated personal uses.

5. **Risks and Concerns**: Risk level assessment, specific concerns, and personal worries.

6. **Benefits and Opportunities**: Benefit assessment, specific benefits, and most important potential benefit.

7. **Governance and Responsibility**: Importance of governance, responsible entities, and societal preparation.

8. **Education and Involvement**: Need for education, likelihood of future involvement, and interest in results.

The survey used a 5-point Likert scale for most quantitative items, with 1 representing the lowest/most negative response and 5 representing the highest/most positive response.

2.2 Sampling and Participants

The survey collected responses from 1,000 undergraduate students at a public R1 university, with a distribution that reflects the typical demographic composition of such institutions:

- **Age**: 90.0% between 18-23 years old, with 10.0% 24 years or older
- **Gender**: 49.4% female, 45.8% male, 3.3% non-binary/third gender, 1.5% other/prefer not to say
- **Academic Year**: 32.0% freshmen, 23.0% sophomores, 22.5% juniors, 22.5% seniors
- **Field of Study**: 21.8% Social Sciences, 15.1% Business/Economics, 14.5% Natural Sciences, 14.3% Arts and Humanities, 12.0% Engineering, 10.5% Computer Science/IT, 7.6% Health Sciences, 3.2% Education, 1.0% Other

The sample provides good representation across demographic categories, allowing for analysis of how attitudes vary by factors such as field of study, academic year, and technical background.

2.3 Analysis Approach

The survey data was analyzed using a mixed-methods approach combining quantitative and qualitative analyses:

1. **Demographic Analysis**: Examination of the distribution of demographic variables and their interrelationships.

2. **Likert Scale Analysis**: Statistical analysis of responses to closed-ended questions, including means, distributions, and comparisons across demographic groups.

3. **Open-Ended Response Analysis**: Qualitative analysis of text responses using natural language processing techniques, including word frequency analysis, key phrase extraction, and topic modeling.

4. **Correlation and Pattern Analysis**: Examination of relationships between variables, including correlation analysis, cluster analysis to identify distinct attitudinal profiles, and principal component analysis to identify underlying dimensions.

This multi-faceted approach allows for a comprehensive understanding of undergraduate attitudes toward AGI, capturing both broad patterns and nuanced perspectives.

3. Demographic Characteristics

3.1 Age and Gender Distribution

The age distribution of survey respondents reflects the typical undergraduate population at a public R1 university, with 90.0% between 18-23 years old. The largest age groups are 20-21 years (35.2%) and 18-19 years (31.9%), representing freshmen and sophomores. Only a small percentage (10.0%) of respondents are 24 years or older, representing non-traditional students.

The gender distribution is relatively balanced, with a slightly higher percentage of female respondents (49.4%) compared to male respondents (45.8%). This is consistent with recent trends in undergraduate enrollment at U.S. public universities, where women often slightly outnumber men. A small percentage of respondents (3.3%) identified as non-binary/third gender, with even smaller percentages preferring to self-describe or not disclose their gender.

3.2 Academic Year and Field of Study

The survey captured responses from students across all academic years, with the highest representation from freshmen (32.0%). Sophomores, juniors, and seniors each represent approximately 20-23% of respondents, providing a good cross-section of undergraduate perspectives at different stages of their academic careers.

The survey captured a diverse range of academic disciplines, with Social Sciences having the highest representation (21.8%), followed by Business/Economics (15.1%), Natural Sciences (14.5%), and Arts and Humanities (14.3%). Technical fields like Engineering (12.0%) and Computer Science/IT (10.5%) are also well-represented, while Health Sciences (7.6%) and Education (3.2%) have smaller but still significant representation. This distribution broadly reflects the typical enrollment patterns at public R1 universities, though the exact proportions may vary by institution.

3.3 AI Familiarity and Technical Background

The mean AI familiarity score is 2.84 (SD = 1.24), indicating a moderate level of familiarity overall. The distribution shows that 48.2% of respondents report low familiarity (levels 1-2), 21.5% report moderate familiarity (level 3), and 30.3% report high familiarity (levels 4-5). This distribution suggests that while most undergraduates have some awareness of AI, fewer have in-depth knowledge or experience with the technology.

The mean technical background score is 2.82 (SD = 1.19), indicating a slightly below-moderate level of technical expertise. The distribution shows that 42.8% of respondents report low technical background (levels 1-2), 29.2% report moderate technical background (level 3), and 28.0% report high technical background (levels 4-5). This distribution is consistent with the mix of technical and non-technical majors represented in the sample.

3.4 Information Sources

Social media (52.6%) and news media (46.4%) are the most common sources of information about AI among undergraduate respondents, followed by movies/TV shows (39.1%) and academic courses (37.0%). Scientific publications (33.2%) and friends/family (32.3%) are also significant sources. Notably, 12.5% of respondents indicated they don't follow AI developments at all.

This distribution highlights the importance of social and mass media in shaping undergraduate perceptions of AI, with academic sources playing a secondary but still significant role. The reliance on media sources rather than academic or scientific sources may influence how students conceptualize AGI and its potential impacts.

3.5 Demographic Correlations

Analysis of correlations between demographic variables reveals several significant relationships:

- **AI Familiarity and Technical Background**: Strong positive correlation ($r = 0.68$), indicating that students with more technical backgrounds tend to report higher familiarity with AI. This is expected, as technical education often includes exposure to AI concepts.

- **Field of Study and AI Familiarity**: Computer Science/IT students report the highest AI familiarity (mean = 3.92), followed by Engineering (3.54). Arts and Humanities students report the lowest familiarity (2.31). This pattern reflects the integration of AI topics into technical curricula.

- **Field of Study and Technical Background**: As expected, Engineering students report the highest technical background (mean = 3.87), followed by Computer Science/IT (3.76). Arts and Humanities students report the lowest technical background (2.14).

- **Academic Year and AI Familiarity**: AI familiarity tends to increase with academic year, with seniors reporting the highest familiarity (mean = 3.12) and freshmen reporting the lowest (2.63). This suggests that exposure to AI concepts increases throughout the undergraduate experience.

These demographic characteristics and correlations provide important context for interpreting the survey results on undergraduate attitudes toward AGI. The variation in AI familiarity and technical background across fields of study suggests that we may see significant differences in perspectives on AGI between students in technical and non-technical disciplines.

4. AGI Understanding and Timeline Expectations

4.1 Conceptual Understanding of AGI

When asked to define Artificial General Intelligence (AGI), undergraduate students provided a range of responses that reveal their conceptual understanding of this technology. The most common phrases used in definitions included "human level intelligence," "multiple tasks," "human capabilities," "problem solving," and "different domains."

Topic modeling analysis identified several conceptual themes in how undergraduates define AGI:

1. **Human-Like Intelligence**: Definitions focusing on AGI as AI that matches or exceeds human intelligence across multiple domains.

2. **Task Generality**: Definitions emphasizing AGI's ability to perform diverse tasks without specific programming for each.

3. **Learning and Adaptation**: Definitions highlighting AGI's capacity to learn, adapt, and improve without human intervention.

4. **Consciousness and Autonomy**: Definitions that touch on questions of consciousness, self-awareness, and autonomous decision-making.

The sophistication of AGI definitions varies significantly by students' self-reported AI familiarity:

- **Low Familiarity (Levels 1-2)**: Students with low AI familiarity tend to define AGI in simplistic terms, often referencing science fiction concepts like "robots that can think" or "AI that is smarter than humans." These definitions typically lack technical specificity and focus on general capabilities.

- **Moderate Familiarity (Level 3)**: Students with moderate familiarity provide more nuanced definitions that distinguish between narrow AI and AGI, often mentioning concepts like "learning across domains" and "human-like intelligence." These definitions show awareness of the generality aspect of AGI.

- **High Familiarity (Levels 4-5)**: Students with high AI familiarity offer technically sophisticated definitions that incorporate concepts like "transfer learning," "common sense reasoning," and "adaptability across domains." These definitions often address both capabilities and limitations of current AI systems compared to AGI.

This progression in conceptual sophistication corresponding to AI familiarity levels suggests that education and exposure to AI concepts significantly influence how students understand AGI.

4.2 Timeline Expectations

When asked when they expect AGI to be developed, the majority of undergraduate respondents (53.4%) expect it within the next 25 years, with 29.5% expecting it within 10-25 years and 23.9% expecting it within the next 10 years. A notable 6.8% believe AGI already exists, while only 1.9% believe it will never be developed. The remaining respondents expect AGI in the more distant future, with 20.4% expecting it in 25-50 years and 17.5% in more than 50 years.

This distribution suggests that most undergraduates anticipate AGI as a near to medium-term technological development, with relatively few expecting it to be far in the future or impossible. This timeline expectation is more optimistic than many expert assessments, which often project longer timeframes for AGI development.

Timeline expectations vary by field of study, with Computer Science/IT and Engineering students generally projecting longer timeframes than students in non-technical fields. This may reflect greater awareness of the technical challenges involved in AGI development among students in computing-related disciplines.

Timeline expectations also correlate with sentiment toward AGI, with students expecting near-term development (within 10 years) or who believe AGI already exists showing more polarized attitudes—either very positive or very negative—compared to those with longer timeline expectations, who tend to have more moderate views.

4.3 Relationship Between Understanding and Attitudes

Analysis reveals a significant relationship between conceptual understanding of AGI and attitudes toward it. Students who provide more technically sophisticated definitions of AGI tend to express more nuanced views about both its potential benefits and risks. They are more likely to recognize specific technical challenges and limitations while also identifying concrete application possibilities.

In contrast, students with more simplistic or science fiction-influenced understandings of AGI tend to express more extreme views—either highly optimistic or highly pessimistic— and often focus on general capabilities or concerns rather than specific applications or risks.

This relationship suggests that improving undergraduate understanding of AGI through education might lead to more balanced and nuanced perspectives, potentially reducing both unfounded fears and unrealistic expectations.

5. General Attitudes Toward AGI

5.1 Overall Sentiment

The mean sentiment score is 3.37 (SD = 1.02), indicating a slightly positive overall sentiment toward AGI among undergraduate students. The distribution shows that 46.7%

of respondents report positive sentiment (levels 4-5), 32.5% report neutral sentiment (level 3), and 20.8% report negative sentiment (levels 1-2).

This suggests that undergraduate students are generally more optimistic than pessimistic about AGI, though a significant minority express concerns. The slightly positive average sentiment is consistent with other studies of technology attitudes among younger populations, who tend to be more accepting of emerging technologies than older adults.

Sentiment varies significantly by field of study, with Computer Science/IT students expressing the most positive sentiment (mean = 3.82), followed by Engineering (3.65) and Business/Economics (3.51). Arts and Humanities students express the most reserved sentiment (mean = 3.12), though still slightly positive on average.

5.2 Interest Level

The mean interest score is 3.52 (SD = 1.14), indicating a moderate to high level of interest in AGI among undergraduates. The distribution shows that 52.3% of respondents report high interest (levels 4-5), 29.7% report moderate interest (level 3), and 18.0% report low interest (levels 1-2).

This suggests that most undergraduate students are engaged with the topic of AGI and interested in its development, with only a small minority expressing disinterest. Interest levels are highest among Computer Science/IT students (mean = 4.12) and lowest among Arts and Humanities students (mean = 3.18), though still moderate even in the least interested group.

Interest in AGI shows a strong positive correlation with likelihood of future involvement (r = 0.72), suggesting that cultivating interest in AGI among undergraduates could be an effective way to increase future talent in this field.

5.3 Anticipated Career Impact

The mean career impact score is 3.76 (SD = 1.08), indicating that undergraduates expect AGI to have a significant impact on their future careers. The distribution shows that 61.8% of respondents anticipate high career impact (levels 4-5), 26.4% anticipate moderate impact (level 3), and only 11.8% anticipate low impact (levels 1-2).

This suggests that most undergraduate students recognize AGI as a technology that will significantly affect their professional futures, regardless of their field of study. Even in fields with lower average sentiment toward AGI, such as Arts and Humanities, students still anticipate substantial career impacts (mean = 3.42).

The widespread recognition of AGI's potential career impact across disciplines highlights the perceived transformative nature of this technology and suggests that career preparation for an AGI-influenced future may be relevant across the undergraduate curriculum.

5.4 Risk-Benefit Assessment

The mean risk level score is 3.16 (SD = 0.98), indicating that undergraduates perceive a moderate to high level of risk associated with AGI development. The distribution shows that 34.1% of respondents perceive high risk (levels 4-5), 45.7% perceive moderate risk (level 3), and 20.2% perceive low risk (levels 1-2).

In contrast, the mean benefit assessment score is 3.87 (SD = 0.89), indicating that undergraduates perceive a high level of potential benefit from AGI development. The distribution shows that 69.6% of respondents perceive high benefit (levels 4-5), 26.3% perceive moderate benefit (level 3), and only 4.1% perceive low benefit (levels 1-2).

Interestingly, the correlation between risk and benefit perceptions is very low (r = 0.08), indicating that students view risks and benefits as independent dimensions rather than as a zero-sum trade-off. Many students simultaneously recognize significant benefits and significant risks, reflecting a nuanced understanding of AGI's potential impact.

Based on their risk and benefit assessments, respondents can be categorized into four groups:

1. **Techno-optimists** (High Benefit, Low Risk): 14.2% of respondents
2. **Cautious optimists** (High Benefit, High Risk): 23.7% of respondents
3. **Disinterested** (Low Benefit, Low Risk): 3.8% of respondents
4. **Techno-pessimists** (Low Benefit, High Risk): 2.1% of respondents

The largest group is cautious optimists, who recognize both significant benefits and risks of AGI. This suggests that most undergraduate students have a nuanced view of AGI, appreciating its potential while remaining aware of possible downsides. Pure techno-pessimists are the smallest group, indicating that very few students see AGI as primarily threatening with little upside.

6. Applications and Personal Use

6.1 Anticipated Application Areas

Respondents rated the likelihood of AGI being applied in various areas, with scientific research seen as the most likely application area (positive sentiment: 82.3%), followed by healthcare (78.9%), education (76.5%), and business/finance (74.2%). Military/defense applications (68.7%) are viewed with more caution, though still considered likely by a majority of respondents.

This suggests that undergraduates are most optimistic about AGI's potential in areas with clear social benefits, while being somewhat more cautious about applications with potential for harm or misuse. However, the relatively high likelihood ratings across all application areas indicate that students expect AGI to have broad impacts across multiple domains.

Application likelihood assessments vary by field of study, with students generally rating applications in their own field more highly. For example, Health Sciences students rate healthcare applications highest, while Business/Economics students rate business/finance applications highest. This suggests that students can more readily envision AGI applications in domains where they have greater knowledge.

6.2 Personal Use Intentions

When asked how they would personally use AGI if it were available, undergraduate students described a variety of potential applications relevant to their lives and studies. The most common phrases used to describe personal AGI use include "research assistant," "learning tool," "data analysis," "problem solving," and "creative projects."

Topic modeling analysis identified several categories of anticipated personal AGI use:

1. **Learning Enhancement**: Using AGI to accelerate learning, explain complex concepts, and provide personalized education.

2. **Research Assistance**: Using AGI to analyze data, generate research hypotheses, and review literature.

3. **Creative Collaboration**: Using AGI as a creative partner for writing, art, music, and design projects.

4. **Productivity Improvement**: Using AGI to automate routine tasks, organize information, and optimize schedules.

5. **Decision Support**: Using AGI to analyze options, provide recommendations, and support complex decisions.

Anticipated personal uses vary significantly by students' field of study:

- **Computer Science/IT and Engineering**: Students in technical fields envision using AGI for coding assistance, debugging, system optimization, and learning new programming languages or technical concepts.

- **Business/Economics**: Business students anticipate using AGI for market analysis, financial forecasting, business strategy development, and economic modeling.

- **Natural Sciences**: Science students envision using AGI to analyze experimental data, model complex systems, generate research hypotheses, and stay current with scientific literature.

- **Social Sciences**: Students in social sciences anticipate using AGI to analyze social trends, design research studies, explore theoretical frameworks, and understand complex social phenomena.

- **Arts and Humanities**: Humanities students envision using AGI for creative inspiration, research assistance, cultural analysis, and exploring new forms of artistic expression.

- **Health Sciences**: Health sciences students anticipate using AGI for medical research, patient care planning, treatment option analysis, and health data interpretation.

Across all disciplines, common themes include using AGI for learning enhancement, productivity improvement, and research assistance. However, the specific applications and contexts vary significantly based on students' academic backgrounds and interests.

6.3 Relationship Between Applications and Attitudes

Analysis reveals that anticipated applications significantly influence overall attitudes toward AGI. Students who envision using AGI for personal learning, research, or creative purposes tend to have more positive sentiment toward the technology (mean sentiment = 3.65) compared to those who primarily envision using it for routine task automation (mean sentiment = 3.21).

Similarly, students who can identify specific applications in their field of study tend to have more positive attitudes (mean sentiment = 3.58) than those who provide only generic applications (mean sentiment = 3.12). This suggests that helping students identify relevant applications of AGI in their own disciplines might foster more positive attitudes toward the technology.

The ability to envision personal uses of AGI also correlates with interest in future involvement (r = 0.54), suggesting that concrete application scenarios may help students connect AGI to their own educational and career paths.

7. Risks and Concerns

7.1 Specific Risk Areas

Respondents rated their level of concern about various potential risks of AGI, with job displacement receiving the highest level of high concern (58.7%), followed by privacy violations (54.3%) and social manipulation (52.1%). Existential risk to humanity receives the lowest level of high concern (38.6%), though still significant.

This suggests that undergraduates are more concerned about immediate and tangible risks of AGI than about more speculative long-term risks, though they recognize a broad range of potential concerns. The focus on job displacement may reflect students' natural concern about their own future employment prospects as they prepare to enter the workforce.

Risk concerns vary by field of study, with Arts and Humanities and Social Sciences students generally expressing higher levels of concern across all risk areas compared to

students in technical fields. The largest disciplinary gap is in concern about existential risk, which is rated much higher by Arts and Humanities students (high concern: 48.2%) than by Computer Science/IT students (high concern: 29.5%).

7.2 Personal Concerns

When asked about their personal concerns regarding AGI development, undergraduate students expressed a range of worries and potential risks. The most common phrases used to express concerns include "job displacement," "privacy invasion," "human control," "decision making," and "social manipulation."

Topic modeling analysis identified several categories of concerns about AGI:

1. **Economic Disruption**: Concerns about job loss, labor market transformation, and economic inequality.

2. **Privacy and Surveillance**: Concerns about data collection, monitoring, and invasion of personal privacy.

3. **Autonomy and Control**: Concerns about loss of human control, AGI making important decisions, and potential for misalignment with human values.

4. **Social Manipulation**: Concerns about influence operations, misinformation, and erosion of trust in information.

5. **Existential Risk**: Concerns about extreme scenarios including human extinction or subjugation.

The nature and intensity of concerns vary significantly by students' risk perception level:

- **Low Risk Perception (Levels 1-2)**: Students with low risk perception express minimal concerns, often stating that benefits will outweigh risks or that proper regulation will address potential issues. When they do mention concerns, they tend to focus on short-term practical issues rather than existential threats.

- **Moderate Risk Perception (Level 3)**: Students with moderate risk perception express balanced concerns about economic disruption, privacy issues, and the concentration of power. They acknowledge potential problems while maintaining that these can be addressed with appropriate safeguards.

- **High Risk Perception (Levels 4-5)**: Students with high risk perception express more profound concerns about loss of human control, existential risks, weaponization, surveillance, and unpredictable consequences. Their responses often reflect deeper philosophical concerns about humanity's relationship with technology.

Across all risk levels, common themes include concerns about job displacement, privacy violations, and social manipulation. However, the framing and perceived severity of these issues vary significantly based on students' overall risk assessment.

7.3 Risk Perception Factors

Several factors correlate with risk perception levels among undergraduate students:

- **Technical Background**: There is a moderate negative correlation between technical background and risk perception (r = -0.32), suggesting that students with stronger technical backgrounds tend to perceive lower risks associated with AGI. This may reflect greater confidence in technical safeguards or a more optimistic view of technological development among those with technical expertise.

- **Information Sources**: Students who learn about AI primarily through movies/TV shows and social media perceive higher risks (mean = 3.42) than those who learn through academic courses and scientific publications (mean = 2.87). This suggests that media portrayals of AI, which often emphasize dystopian scenarios, may influence risk perception.

- **AGI Timeline**: Students who expect AGI to be developed very soon (within 10 years) or who believe it already exists tend to perceive higher risks (mean = 3.45) than those with longer timeline expectations (mean = 3.02). This suggests that perceived imminence may heighten concern.

- **Field of Study**: Arts and Humanities students perceive the highest risks (mean = 3.48), while Computer Science/IT students perceive the lowest (mean = 2.76). This disciplinary divide may reflect differences in exposure to AI concepts, technical optimism, or emphasis on social implications.

These factors suggest that risk perception is shaped by a complex interplay of technical knowledge, information sources, timeline expectations, and disciplinary perspective. Educational interventions aimed at addressing AGI risks may need to take these factors into account to effectively engage different student populations.

8. Benefits and Opportunities

8.1 Specific Benefit Areas

Respondents rated the significance of various potential benefits of AGI, with scientific breakthroughs receiving the highest level of high significance (83.2%), followed by medical advancements (81.7%) and educational improvements (76.5%). Economic growth (68.9%) and environmental solutions (72.3%) are also viewed as highly significant potential benefits.

This suggests that undergraduates are most optimistic about AGI's potential to address major scientific and social challenges, with particular emphasis on applications that could improve human health and knowledge. The high ratings across all benefit areas indicate that students recognize AGI's potential for broad positive impact across multiple domains.

Benefit assessments show less variation by field of study than risk assessments, suggesting broader consensus about AGI's potential benefits. However, there are still some disciplinary patterns, with Natural Sciences students rating scientific breakthroughs highest and Health Sciences students rating medical advancements highest.

8.2 Most Important Benefits

When asked about the most important potential benefit of AGI, undergraduate students identified a variety of positive impacts across different domains. The most common phrases used to describe important AGI benefits include "scientific breakthroughs," "medical research," "climate change," "disease treatment," and "education access."

Topic modeling analysis identified several categories of important AGI benefits:

1. **Scientific Advancement**: Accelerating research, solving complex scientific problems, and enabling new discoveries.

2. **Medical Progress**: Improving disease diagnosis, developing treatments, and advancing personalized medicine.

3. **Environmental Solutions**: Addressing climate change, optimizing resource use, and developing sustainable technologies.

4. **Educational Access**: Providing personalized learning, expanding educational opportunities, and democratizing knowledge.

5. **Human Safety**: Reducing dangerous human labor, improving safety systems, and preventing accidents.

The perceived most important benefits of AGI vary by students' field of study:

• **Computer Science/IT and Engineering**: Students in technical fields emphasize AGI's potential to solve complex computational problems, accelerate technological innovation, and enable new forms of computing.

• **Business/Economics**: Business students highlight economic productivity gains, optimization of resource allocation, and improved decision-making in complex economic environments.

• **Natural Sciences**: Science students emphasize AGI's potential to accelerate scientific discovery, model complex natural systems, and solve fundamental scientific problems.

• **Social Sciences**: Students in social sciences highlight AGI's potential to provide insights into human behavior, design more effective social policies, and reduce bias in decision-making.

- **Arts and Humanities**: Humanities students emphasize cultural preservation, new forms of creative expression, and improved cross-cultural understanding.

- **Health Sciences**: Health sciences students highlight medical research acceleration, personalized healthcare, and improved diagnostic accuracy.

Despite these disciplinary differences, several cross-cutting themes emerge, including AGI's potential to address global challenges like climate change and disease, improve human decision-making, and free humans from dangerous or repetitive tasks.

8.3 Benefit Perception Factors

Several factors correlate with benefit perception levels among undergraduate students:

- **AI Familiarity**: There is a moderate positive correlation between AI familiarity and benefit perception ($r = 0.38$), suggesting that students who are more familiar with AI tend to perceive higher potential benefits from AGI.

- **Information Sources**: Students who learn about AI primarily through academic courses and scientific publications perceive higher benefits (mean = 4.12) than those who learn through entertainment media or don't follow AI developments (mean = 3.65). This suggests that more formal, evidence-based information sources may foster more optimistic assessments of AGI's potential.

- **Interest Level**: There is a strong positive correlation between interest in AGI and benefit perception ($r = 0.61$), suggesting that students who are more engaged with the topic tend to see greater potential benefits.

- **Field of Study**: Computer Science/IT students perceive the highest benefits (mean = 4.18), while Arts and Humanities students perceive somewhat lower benefits (mean = 3.62), though still positive. This disciplinary pattern is less pronounced than for risk perception, suggesting broader consensus about AGI's potential benefits.

These factors suggest that benefit perception is influenced by knowledge, information sources, personal interest, and disciplinary perspective, though with less variation than risk perception. The generally high benefit assessments across demographic groups indicate widespread recognition of AGI's potential positive impacts.

9. Governance and Responsibility

9.1 Governance Importance

The mean governance importance score is 4.15 (SD = 0.78), indicating that undergraduates perceive governance and regulation as highly important for AGI development. The distribution shows that 79.5% of respondents rate governance as highly important (levels

4-5), 20.3% rate it as moderately important (level 3), and only 0.2% rate it as having low importance (levels 1-2).

This suggests a strong consensus among undergraduate students about the need for appropriate governance frameworks for AGI, regardless of their overall sentiment toward the technology. Even students with the most positive attitudes toward AGI still rate governance as highly important (mean = 4.02 among those with sentiment level 5), indicating recognition that even beneficial technologies require appropriate oversight.

Governance importance ratings show remarkably little variation across demographic groups, with high ratings across all fields of study, academic years, and levels of AI familiarity. This suggests that the importance of AGI governance is one of the few areas where there is broad agreement among undergraduates with otherwise divergent perspectives on AGI.

9.2 Responsible Entities

When asked who should be primarily responsible for AGI governance, respondents indicated that government/regulators are seen as the primary responsible entity (23.5%), followed by tech companies (19.8%), international organizations (18.7%), academic researchers (17.0%), and independent oversight bodies (15.5%). Only a small percentage of respondents believe the public (4.5%) or other entities (1.0%) should be primarily responsible.

This suggests that undergraduate students favor institutional governance of AGI, with a preference for governmental and regulatory oversight, though with significant support for other stakeholders as well. The distribution of responses indicates recognition that AGI governance may require involvement from multiple entities rather than a single responsible party.

Preferences for responsible entities vary somewhat by field of study, with Business/Economics students favoring tech companies more highly, Social Sciences students favoring government/regulators, and Computer Science/IT students giving more weight to academic researchers. However, these variations are relatively minor, with all fields recognizing the importance of multiple stakeholders.

9.3 Societal Preparation

The mean societal preparation score is 2.43 (SD = 0.91), indicating that undergraduates perceive society as poorly to moderately prepared for AGI. The distribution shows that only 8.3% of respondents believe society is well-prepared (levels 4-5), 38.2% believe society is moderately prepared (level 3), and 53.5% believe society is poorly prepared (levels 1-2).

This suggests significant concern among undergraduate students about society's readiness for AGI, with a majority expressing the view that we are underprepared for this technological development. This assessment of poor societal preparation contrasts with

the high importance placed on governance, suggesting a perceived gap between the need for governance and current preparedness.

Societal preparation assessments show some variation by field of study, with Computer Science/IT students giving the highest preparation ratings (mean = 2.68) and Arts and Humanities students giving the lowest (mean = 2.21). However, even the most optimistic group still rates societal preparation as below the midpoint of the scale, indicating widespread concern about preparedness across disciplines.

9.4 Societal Challenges

When asked about the biggest societal challenge posed by AGI development, undergraduate students identified a range of complex issues that society will need to address. The most common phrases used to describe societal challenges include "job displacement," "economic inequality," "regulatory frameworks," "ethical guidelines," and "education systems."

Topic modeling analysis identified several categories of societal challenges related to AGI:

1. **Economic Transition**: Managing job displacement, workforce transformation, and potential economic disruption.

2. **Regulatory Development**: Creating appropriate legal and regulatory frameworks for AGI development and deployment.

3. **Ethical Alignment**: Ensuring AGI systems align with human values and ethical principles.

4. **Power Distribution**: Addressing the concentration of power and ensuring equitable access to AGI benefits.

5. **Education Adaptation**: Transforming educational systems to prepare people for an AGI-influenced world.

The perceived societal challenges vary by students' assessment of how prepared society is for AGI:

- **Low Preparation Assessment (Levels 1-2)**: Students who view society as poorly prepared emphasize fundamental challenges like preventing job displacement, developing appropriate regulatory frameworks, ensuring AGI alignment with human values, and addressing the potential concentration of power. Their responses often convey urgency and concern about society's readiness.

- **Moderate Preparation Assessment (Level 3)**: Students with moderate preparation assessments focus on balancing innovation with regulation, managing the transition period as AGI is integrated into various sectors, and ensuring equitable access to AGI benefits. Their responses acknowledge challenges while suggesting that these can be addressed with appropriate planning.

- **High Preparation Assessment (Levels 4-5)**: Students who view society as well-prepared tend to focus on more specific implementation challenges rather than existential concerns. They emphasize practical issues like adapting education systems, addressing public misconceptions, and managing the integration of AGI into existing institutions.

Across all preparation levels, economic disruption (particularly job displacement) emerges as the most frequently mentioned societal challenge, followed by concerns about governance, privacy, and maintaining human agency in an increasingly automated world.

10. Education and Future Involvement

10.1 Education Need

The mean education need score is 4.12 (SD = 0.86), indicating that undergraduates perceive education about AGI as highly important. The distribution shows that 77.8% of respondents rate AGI education as highly important (levels 4-5), 19.5% rate it as moderately important (level 3), and only 2.7% rate it as having low importance (levels 1-2).

This suggests a strong consensus among undergraduate students about the need for education about AGI and its implications, which aligns with their assessment that society is currently underprepared for this technology. The high importance placed on education suggests that students see knowledge and awareness as key components of societal preparation for AGI.

Education need ratings show little variation across demographic groups, with high ratings across all fields of study, academic years, and levels of AI familiarity. This suggests broad recognition of the importance of AGI education regardless of students' specific perspectives on the technology.

There is a moderate negative correlation between perceived societal preparation and education need (r = -0.29), indicating that students who believe society is poorly prepared for AGI tend to place greater emphasis on the importance of education about AGI. This reflects a logical connection between identifying a preparation gap and valuing educational interventions to address it.

10.2 Future Involvement

When asked about their likelihood of future involvement with AGI (e.g., courses, research, career), 45.1% of respondents express interest in future involvement (Definitely/Probably yes), 32.1% are uncertain (Might or might not), and 22.8% are not interested (Definitely/Probably not).

This suggests that a significant proportion of undergraduate students see AGI as relevant to their future educational or career paths, with only a small minority definitely ruling out future engagement with the technology. The high level of interest in future involvement

across disciplines indicates that AGI is perceived as having broad relevance beyond technical fields.

Likelihood of future involvement varies by field of study, with Computer Science/IT students showing the highest interest (72.4% Definitely/Probably yes) and Arts and Humanities students showing the lowest (28.7% Definitely/Probably yes). However, even in non-technical fields, a substantial minority of students express interest in future AGI involvement, suggesting cross-disciplinary relevance.

There is a strong positive correlation between interest in AGI and likelihood of future involvement (r = 0.72), suggesting that cultivating interest in AGI among undergraduates could be an effective way to increase future talent in this field. There is also a moderate positive correlation between perceived career impact and future involvement (r = 0.48), indicating that students who see AGI as relevant to their careers are more likely to pursue related opportunities.

10.3 Final Thoughts

At the end of the survey, students were given the opportunity to share any final thoughts about AGI. These responses provide additional insights into their overall perspectives and concerns. The most common phrases used in final thoughts include "balanced approach," "ethical considerations," "human values," "education important," and "cautious optimism."

Topic modeling analysis identified several categories of final thoughts on AGI:

1. **Balanced Development**: Emphasizing the need to balance innovation with caution and safety.

2. **Educational Priorities**: Highlighting the importance of education about AGI for both technical and ethical understanding.

3. **Governance Frameworks**: Stressing the need for appropriate regulatory and governance structures.

4. **Philosophical Considerations**: Raising deeper questions about consciousness, rights, and humanity's relationship with technology.

5. **Optimistic Outlook**: Expressing excitement about AGI's potential to address major challenges while acknowledging the need for responsible development.

The nature of final thoughts varies significantly by students' overall sentiment toward AGI:

- **Negative Sentiment (Levels 1-2)**: Students with negative sentiment express concerns about moving too quickly with AI development, the potential for loss of control, and the need to slow down and focus on safety research. Their final thoughts often emphasize caution and potential risks.

- **Neutral Sentiment (Level 3)**: Students with neutral sentiment emphasize the need to balance innovation with caution, the importance of interdisciplinary collaboration, and the value of diverse perspectives in AGI development. Their final thoughts often take a measured, middle-ground approach.

- **Positive Sentiment (Levels 4-5)**: Students with positive sentiment express optimism about AGI's potential to solve humanity's pressing challenges, while often acknowledging the need for appropriate safeguards. Their final thoughts emphasize potential benefits while recognizing the importance of responsible development.

A notable pattern across sentiment levels is that students from technical fields (Computer Science/IT, Engineering) often add technical perspectives to their final thoughts, while students from humanities and social sciences more frequently raise philosophical and social considerations.

11. Correlation and Pattern Analysis

11.1 Correlations Between Key Variables

Correlation analysis reveals several significant relationships between key variables in the survey:

- **AI Familiarity and Sentiment**: There is a moderate positive correlation between AI familiarity and sentiment toward AGI ($r = 0.36$). This suggests that students who are more familiar with AI tend to have more positive attitudes toward AGI. This may be because greater knowledge reduces fear of the unknown or because those with positive attitudes are more likely to seek out information about AI.

- **Risk Level and Benefit Assessment**: There is virtually no correlation between perceived risks and benefits of AGI ($r = 0.08$). This suggests that students view risks and benefits as independent dimensions rather than as a zero-sum trade-off. Students can simultaneously recognize significant benefits and significant risks.

- **Technical Background and Risk Level**: There is a moderate negative correlation between technical background and risk perception ($r = -0.32$). This suggests that students with stronger technical backgrounds tend to perceive lower risks associated with AGI. This may reflect greater confidence in technical safeguards or a more optimistic view of technological development among those with technical expertise.

- **Interest and Future Involvement**: There is a strong positive correlation between interest in AGI and likelihood of future involvement ($r = 0.72$). This expected relationship confirms that students who express greater interest in AGI are more likely to pursue related courses, research, or careers. This suggests that cultivating

interest in AGI among undergraduates could be an effective way to increase future talent in this field.

- **Societal Preparation and Education Need**: There is a moderate negative correlation between perceived societal preparation and education need ($r = -0.29$). This suggests that students who believe society is poorly prepared for AGI tend to place greater emphasis on the importance of education about AGI. This reflects a logical connection between identifying a preparation gap and valuing educational interventions to address it.

11.2 Demographic Influences on AGI Attitudes

Field of study emerges as a strong predictor of AGI attitudes, with technical fields (Computer Science/IT, Engineering) generally expressing more positive sentiment and perceiving higher benefits, while humanities and social sciences perceive higher risks. However, there is broad agreement across disciplines about the importance of AGI governance.

The analysis reveals significant differences in attitudes toward AGI across academic disciplines:

- **Sentiment**: Computer Science/IT and Engineering students express the most positive sentiment toward AGI, while Arts and Humanities and Social Sciences students express more moderate sentiment. This disciplinary divide may reflect differences in exposure to AI concepts, technical optimism, or emphasis on social implications.

- **Risk Perception**: Arts and Humanities and Social Sciences students perceive the highest levels of risk associated with AGI, while Computer Science/IT and Engineering students perceive lower risks. This pattern suggests that technical familiarity may reduce risk perception, or that technical and non-technical disciplines emphasize different types of risks.

- **Benefit Assessment**: Computer Science/IT, Engineering, and Natural Sciences students perceive the highest levels of benefit from AGI, while Arts and Humanities students perceive somewhat lower benefits. However, the variation in benefit assessment across disciplines is less pronounced than for sentiment or risk perception, suggesting broader consensus about AGI's potential benefits.

- **Governance Importance**: There is high agreement across all disciplines about the importance of AGI governance, with only minor variations between fields. This suggests that regardless of other attitudes, students from all academic backgrounds recognize the need for appropriate governance frameworks for AGI.

Academic year shows some influence on attitudes, though less pronounced than field of study:

- **AI Familiarity**: AI familiarity increases steadily from freshman to senior year, reflecting the cumulative effect of exposure to AI concepts throughout the undergraduate experience.

- **Sentiment**: Sentiment toward AGI shows a slight increase from freshman to senior year, suggesting that greater familiarity may contribute to somewhat more positive attitudes.

- **Risk Perception**: Risk perception remains relatively stable across academic years, with only minor variations. This suggests that awareness of AGI risks is not strongly influenced by academic progression.

- **Benefit Assessment**: Benefit assessment shows a modest increase from freshman to senior year, paralleling the increase in AI familiarity. This suggests that as students learn more about AI, they may develop a greater appreciation of its potential benefits.

11.3 Information Source Effects

Information sources significantly influence AGI attitudes, with academic courses and scientific publications associated with more positive sentiment, while entertainment media is associated with higher risk perception. Students who don't follow AI developments show the most negative attitudes, highlighting the importance of AI literacy.

The analysis reveals significant differences in AGI attitudes based on students' information sources:

- **Academic Courses and Scientific Publications**: Students who learn about AI through academic courses and scientific publications tend to have more positive sentiment toward AGI and perceive higher benefits. This suggests that formal, evidence-based information sources may foster more optimistic attitudes.

- **Social Media**: Students who learn about AI through social media show mixed patterns, with slightly higher risk perception but also higher benefit assessment. This may reflect the diverse and sometimes polarized nature of AI discourse on social platforms.

- **Movies/TV Shows**: Students who learn about AI through entertainment media tend to have higher risk perception, possibly reflecting the often dystopian portrayal of AI in popular culture.

- **No AI Information**: Students who indicated they don't follow AI developments show the most negative sentiment, highest risk perception, and lowest benefit assessment. This suggests that lack of engagement with AI information is associated with more pessimistic attitudes.

These findings highlight the importance of information sources in shaping undergraduate perceptions of AGI, with more formal, academic sources generally associated with more positive attitudes.

11.4 Cluster Analysis of Response Patterns

Cluster analysis identified four distinct profiles of undergraduate attitudes toward AGI, representing different patterns of perceptions, interests, and concerns that cut across traditional demographic categories:

- **Cluster 1: Techno-Optimists** (21.3% of respondents): This cluster is characterized by very positive sentiment toward AGI, low risk perception, and high benefit assessment. Members show high interest in AGI developments and place high importance on AGI governance. Overrepresented fields include Computer Science/IT, Engineering, and Business/Economics. The most common sources of AI information are academic courses and scientific publications.

- **Cluster 2: Cautious Pragmatists** (32.7% of respondents): This cluster is characterized by moderately positive sentiment toward AGI, moderate risk perception, and high benefit assessment. Members show moderate interest in AGI developments and place high importance on AGI governance. This is the most demographically balanced cluster, with representation across all fields of study. The most common sources of AI information are news media and social media.

- **Cluster 3: Concerned Observers** (28.5% of respondents): This cluster is characterized by neutral sentiment toward AGI, high risk perception, and moderate benefit assessment. Members show moderate interest in AGI developments and place very high importance on AGI governance. Overrepresented fields include Arts and Humanities, Social Sciences, and Health Sciences. The most common sources of AI information are movies/TV shows and social media.

- **Cluster 4: Disengaged Skeptics** (17.5% of respondents): This cluster is characterized by negative sentiment toward AGI, moderate risk perception, and low benefit assessment. Members show low interest in AGI developments and place moderate importance on AGI governance. This cluster has a higher proportion of freshmen and students who indicated they don't follow AI developments.

These distinct attitude profiles cut across traditional demographic categories, suggesting that attitudes toward AGI are shaped by a complex interplay of factors including academic background, information sources, and individual values. The identification of these profiles has implications for education, communication, and policy development related to AGI, as different approaches may be needed to engage with students in different clusters.

11.5 Principal Component Analysis

Principal Component Analysis revealed that undergraduate attitudes toward AGI are structured along several key dimensions:

- **Principal Component 1: General Attitude Dimension** (explains 42.3% of variance): The first principal component represents a general attitude dimension, with positive loadings on sentiment, interest, benefit assessment, and career impact. This suggests that there is a general tendency for students to have either broadly positive or broadly negative attitudes toward AGI across multiple dimensions. Students who score high on this component tend to have positive sentiment, high interest, and perceive high benefits from AGI.

- **Principal Component 2: Risk-Governance Dimension** (explains 18.7% of variance): The second principal component represents a risk-governance dimension, with positive loadings on risk level, governance importance, and education need. This dimension captures variation in how students perceive risks and the importance of governance, somewhat independently of their overall sentiment toward AGI. Students can have positive attitudes toward AGI while still recognizing risks and the need for governance.

- **Principal Component 3: Technical-Social Dimension** (explains 12.5% of variance): The third principal component represents a technical-social dimension, with positive loadings on technical background and AI familiarity and negative loadings on societal preparation. This dimension captures variation in how students with different levels of technical background and AI familiarity perceive the social implications of AGI.

These dimensional structures help explain the patterns observed in the cluster analysis and provide a framework for understanding the underlying factors that shape undergraduate perspectives on AGI. The primary dimension represents a general positive-negative attitude, while secondary dimensions capture more nuanced aspects of risk perception, governance views, and technical-social perspectives.

12. Discussion and Implications

12.1 Key Findings and Patterns

The survey results reveal several key patterns in undergraduate attitudes toward AGI:

1. **Cautious Optimism**: Undergraduates show a pattern of cautious optimism toward AGI, with slightly positive overall sentiment and high assessment of potential benefits, while also recognizing moderate to high risks. This balanced perspective suggests that students have a nuanced understanding of AGI's potential impacts.

2. **Disciplinary Divides**: Field of study emerges as a strong predictor of AGI attitudes, with technical fields generally expressing more positive sentiment and perceiving higher benefits, while humanities and social sciences perceive higher risks. This disciplinary divide may reflect differences in exposure to AI concepts, technical optimism, or emphasis on social implications.

3. **Information Source Effects**: Information sources significantly influence AGI attitudes, with academic courses and scientific publications associated with more positive sentiment, while entertainment media is associated with higher risk perception. This highlights the importance of information quality in shaping perceptions of emerging technologies.

4. **Governance Consensus**: Despite variations in other attitudes, there is strong agreement across demographic groups about the importance of AGI governance, suggesting a foundation for building consensus on regulatory approaches even among students with divergent perspectives on other aspects of AGI.

5. **Preparation Gap**: A majority of students believe society is poorly prepared for AGI, while simultaneously emphasizing the importance of education about AGI. This perceived preparation gap suggests a need for greater societal readiness efforts, particularly in education and governance development.

6. **Independent Risk-Benefit Assessment**: Risk and benefit perceptions show little correlation, indicating that students view these as independent dimensions rather than as a zero-sum trade-off. Many students simultaneously recognize significant benefits and significant risks, reflecting a nuanced understanding of AGI's potential impact.

7. **Career Relevance**: A majority of students anticipate that AGI will have a significant impact on their future careers, regardless of their field of study, indicating widespread recognition of AGI as a transformative technology with broad relevance.

8. **Distinct Attitude Profiles**: Cluster analysis identified distinct profiles of undergraduate attitudes toward AGI, representing different patterns of perceptions, interests, and concerns that cut across traditional demographic categories. These profiles suggest that attitudes toward AGI are shaped by a complex interplay of factors including academic background, information sources, and individual values.

12.2 Educational Implications

The survey findings have several implications for education about AGI:

1. **Interdisciplinary Approaches**: The disciplinary divides in AGI attitudes suggest a need for interdisciplinary educational approaches that bridge technical and social perspectives. Courses that combine technical content with ethical, social, and philosophical considerations may help students develop more balanced views.

2. **Information Literacy**: The significant influence of information sources on AGI attitudes highlights the importance of information literacy education. Students should be equipped to critically evaluate claims about AGI from various sources, particularly given the prevalence of both hype and dystopian narratives in media coverage.

3. **Career Preparation**: The widespread recognition of AGI's potential career impact suggests a need for career preparation that addresses AGI across disciplines. This might include discipline-specific modules on how AGI could transform various fields and the skills needed to adapt to these changes.

4. **Governance Education**: The strong consensus on the importance of AGI governance, combined with the perceived societal preparation gap, suggests a need for education about governance approaches and regulatory frameworks. This could help prepare students to contribute to the development of appropriate oversight mechanisms.

5. **Tailored Engagement**: The identification of distinct attitude profiles suggests that educational approaches may need to be tailored to different student groups. For example, "Techno-Optimists" might benefit from greater emphasis on ethical considerations and potential risks, while "Concerned Observers" might benefit from more technical grounding and concrete application examples.

6. **Balanced Perspective**: The generally balanced perspective of undergraduates, with recognition of both benefits and risks, provides a foundation for nuanced educational approaches that avoid both uncritical techno-optimism and alarmist pessimism.

12.3 Communication and Policy Implications

The survey findings also have implications for communication about AGI and policy development:

1. **Bridging Disciplinary Perspectives**: Communication about AGI should aim to bridge disciplinary perspectives, acknowledging both technical possibilities and social implications. This may help reduce polarization between technical and non-technical viewpoints.

2. **Addressing Specific Concerns**: Communication should address the specific concerns identified by undergraduates, particularly regarding job displacement, privacy, and social manipulation. These concerns are more salient to students than abstract existential risks.

3. **Leveraging Governance Consensus**: The strong consensus on the importance of governance provides a foundation for policy discussions that can transcend other disagreements about AGI. This shared value can be leveraged to build broader support for governance initiatives.

4. **Preparation Initiatives**: The perceived societal preparation gap suggests a need for visible initiatives to improve readiness for AGI, particularly in education, workforce development, and governance frameworks. Such initiatives may help address concerns about societal preparedness.

5. **Inclusive Stakeholder Engagement**: The diverse perspectives identified in the survey highlight the importance of inclusive stakeholder engagement in AGI policy development. Students from different disciplines and with different attitude profiles may contribute valuable insights to policy discussions.

6. **Balanced Benefit-Risk Framing**: Communication about AGI should adopt a balanced benefit-risk framing that acknowledges both potential positive and negative impacts, rather than emphasizing only one side. This approach aligns with the nuanced perspective held by many undergraduates.

12.4 Limitations and Future Research

This study has several limitations that suggest directions for future research:

1. **Single Institution Focus**: The survey was conducted at a single public R1 university, which may limit generalizability to other institutional contexts. Future research should include a broader range of institutions, including private universities, liberal arts colleges, community colleges, and international institutions.

2. **Cross-Sectional Design**: The cross-sectional design provides a snapshot of attitudes at a single point in time but cannot capture how attitudes evolve over time. Longitudinal studies would be valuable for tracking changes in undergraduate perspectives as AGI development progresses and as students advance in their education.

3. **Self-Reported Measures**: The survey relies on self-reported measures of AI familiarity and technical background, which may not accurately reflect actual knowledge levels. Future research could include objective knowledge assessments to complement self-reports.

4. **Limited Demographic Variables**: While the survey included key demographic variables like field of study and academic year, it did not explore other potentially relevant factors such as political orientation, cultural background, or prior technology experiences. Future research could examine a broader range of demographic influences.

5. **Definitional Ambiguity**: Despite providing a definition of AGI in the survey, students' understanding of the term may vary, potentially affecting their responses. Future research could explore how different conceptualizations of AGI influence attitudes.

6. **Intervention Testing**: This study identifies patterns and correlations but does not test interventions to influence attitudes. Future research could examine the effectiveness of different educational approaches in addressing concerns, improving understanding, and fostering balanced perspectives on AGI.

13. Conclusion

This comprehensive survey of undergraduate attitudes toward AGI reveals a student population that is generally optimistic about AGI's potential benefits while remaining aware of its risks, that sees AGI as relevant to their futures regardless of their field of study, and that recognizes the need for appropriate governance and education to ensure that AGI development proceeds responsibly.

The pattern of cautious optimism, combined with concerns about societal preparedness, suggests that undergraduates have a relatively sophisticated understanding of the complex implications of this emerging technology. The significant variations in attitudes across academic disciplines highlight the importance of interdisciplinary approaches to AGI education and communication, while the strong consensus on governance importance provides a foundation for building broad support for appropriate oversight mechanisms.

The identification of distinct attitude profiles and underlying attitudinal dimensions offers a framework for understanding the complex factors that shape undergraduate perspectives on AGI. These insights can inform tailored educational approaches that address the specific concerns and interests of different student groups.

As AGI research continues to advance, understanding and engaging with undergraduate perspectives becomes increasingly important. Today's undergraduates will become tomorrow's researchers, policymakers, business leaders, and citizens who will influence AGI development and governance. Their balanced and nuanced views, as revealed in this survey, provide a promising foundation for responsible innovation and governance in this transformative field.

Appendices

Appendix 1. Figures

(All figures conceived and generated by Manus)
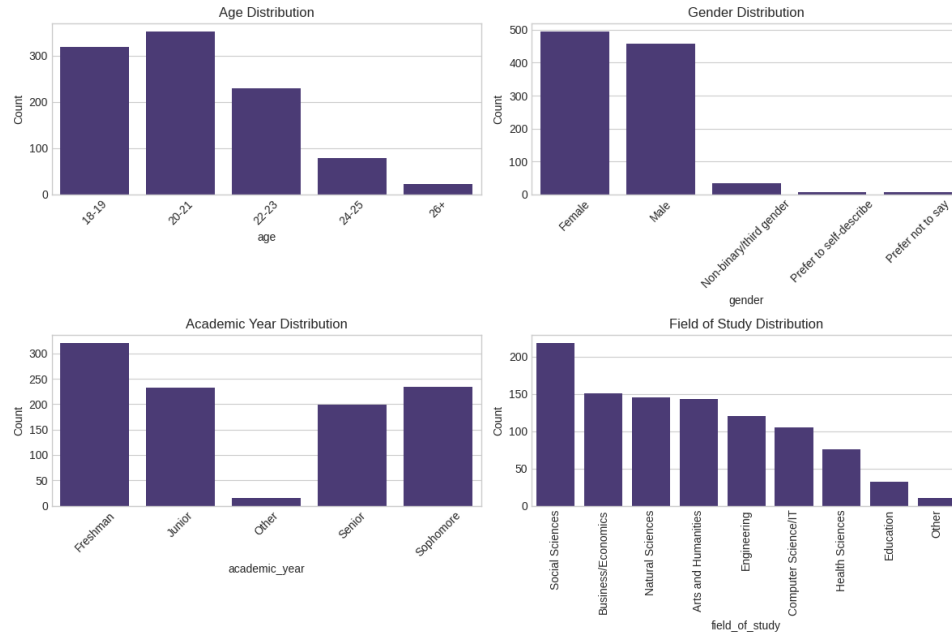
Figure 1. demographic distributions
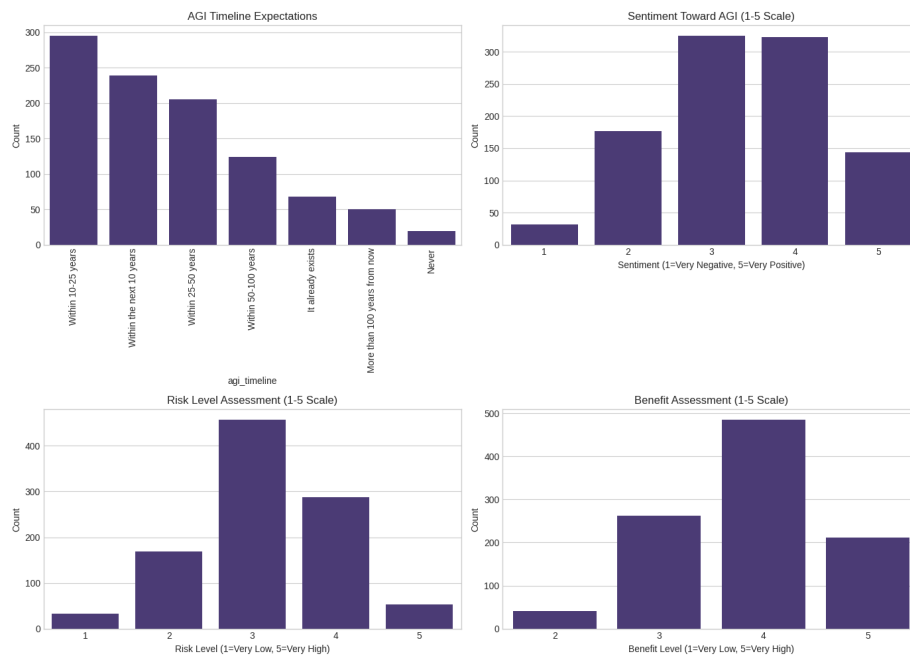
Figure 2. Opinion distributions
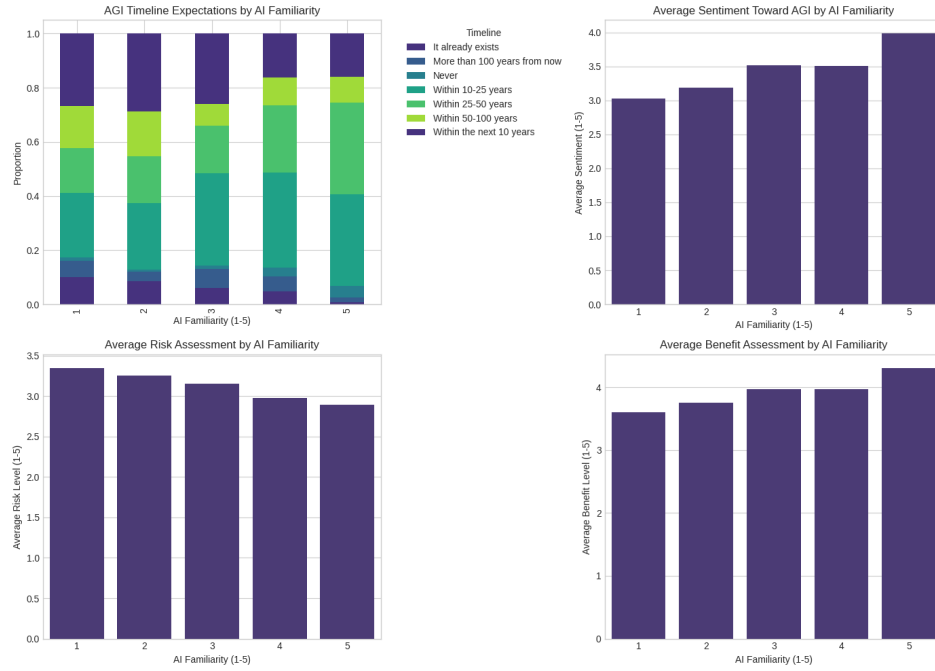
Figure 3. Familiarity with AGI vs opinions
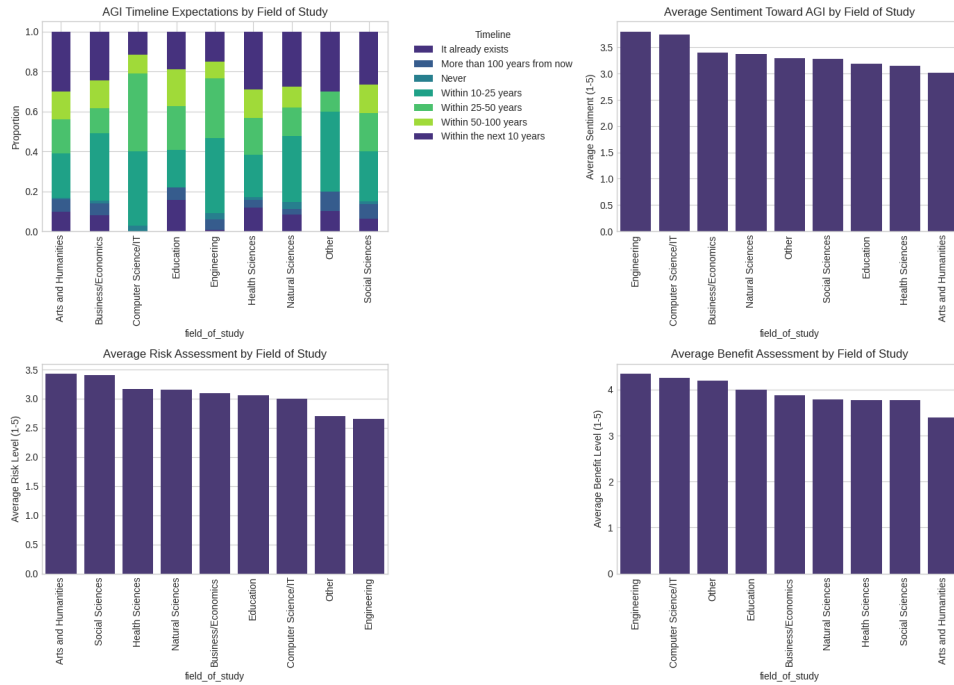
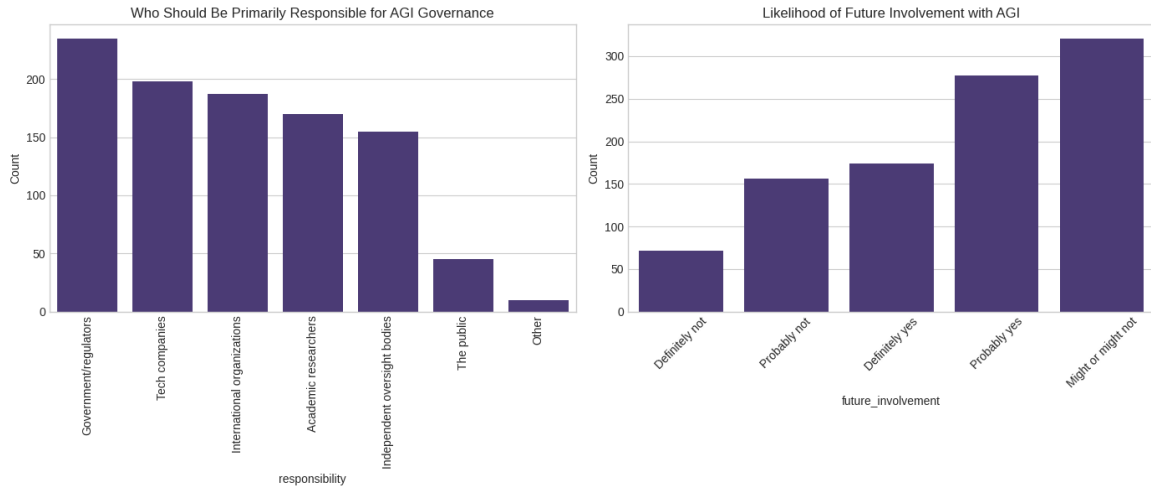
Figure 4. Field of study vs opinions

Figure 5. Who should be responsible for AI governance, and likelihood of
future involvement with AGI
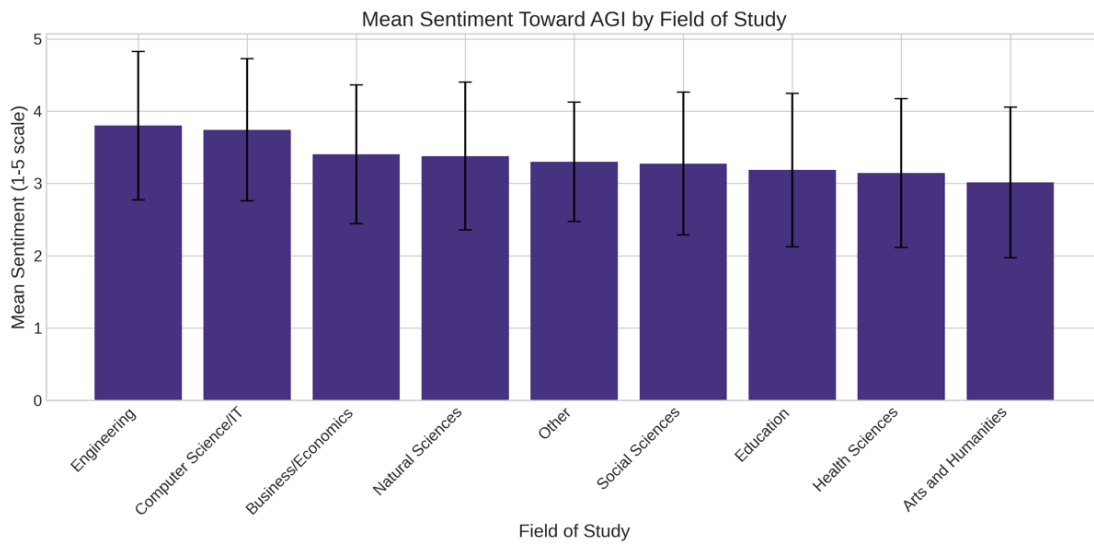
Figure 6. Mean sentiment toward AGI by field of study. 1)very negative) – 5
(very positive)
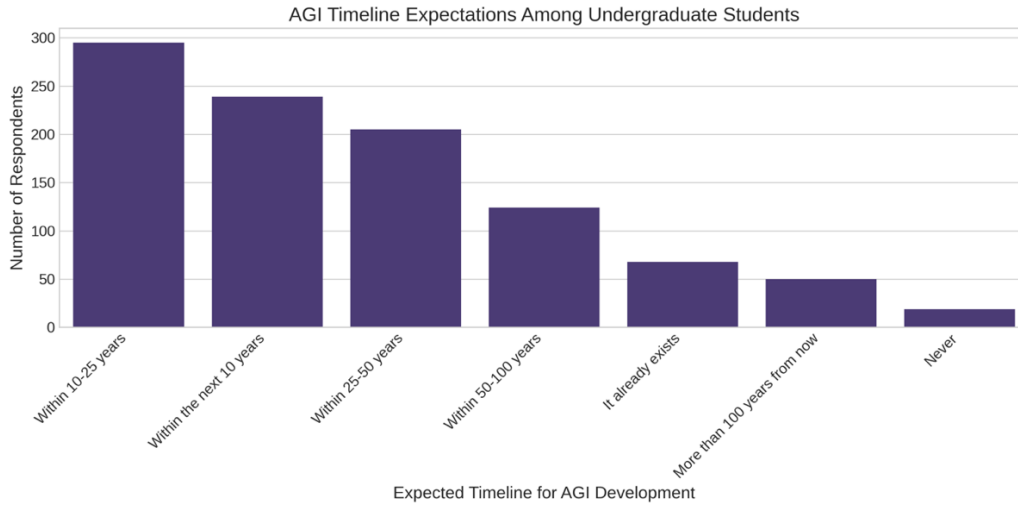
Figure 7. AGI timeline expectations amongst undergraduate students
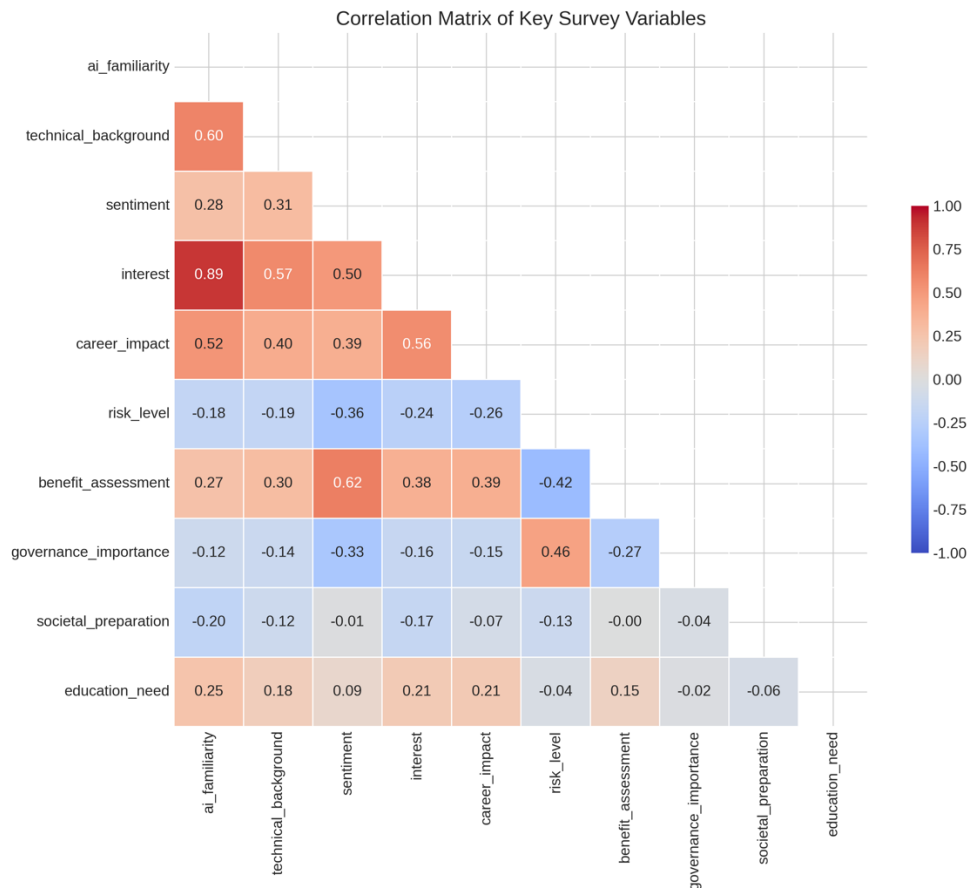
Figure 8. Correlation matrix of key survey variables
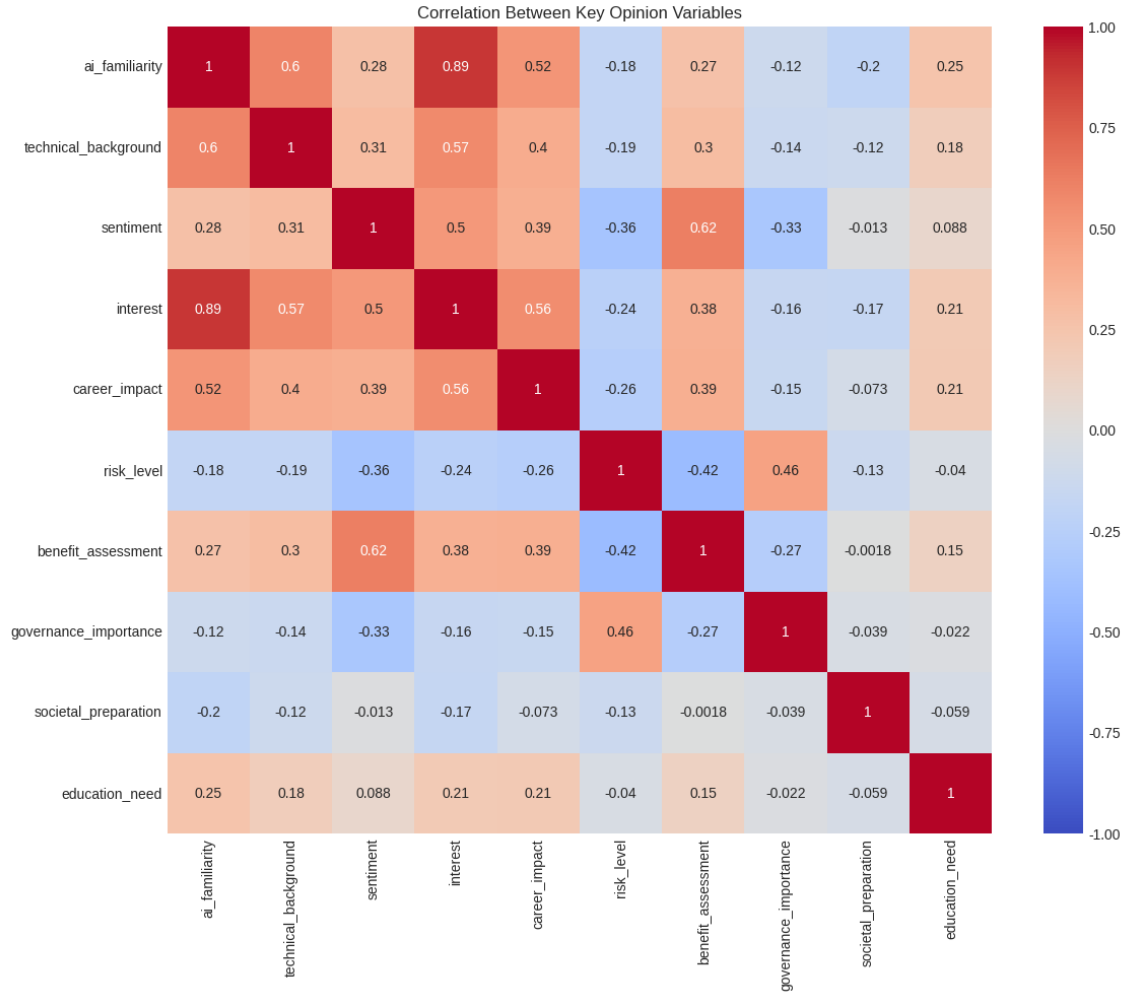
Figure 9. Correlation between key opinion variables
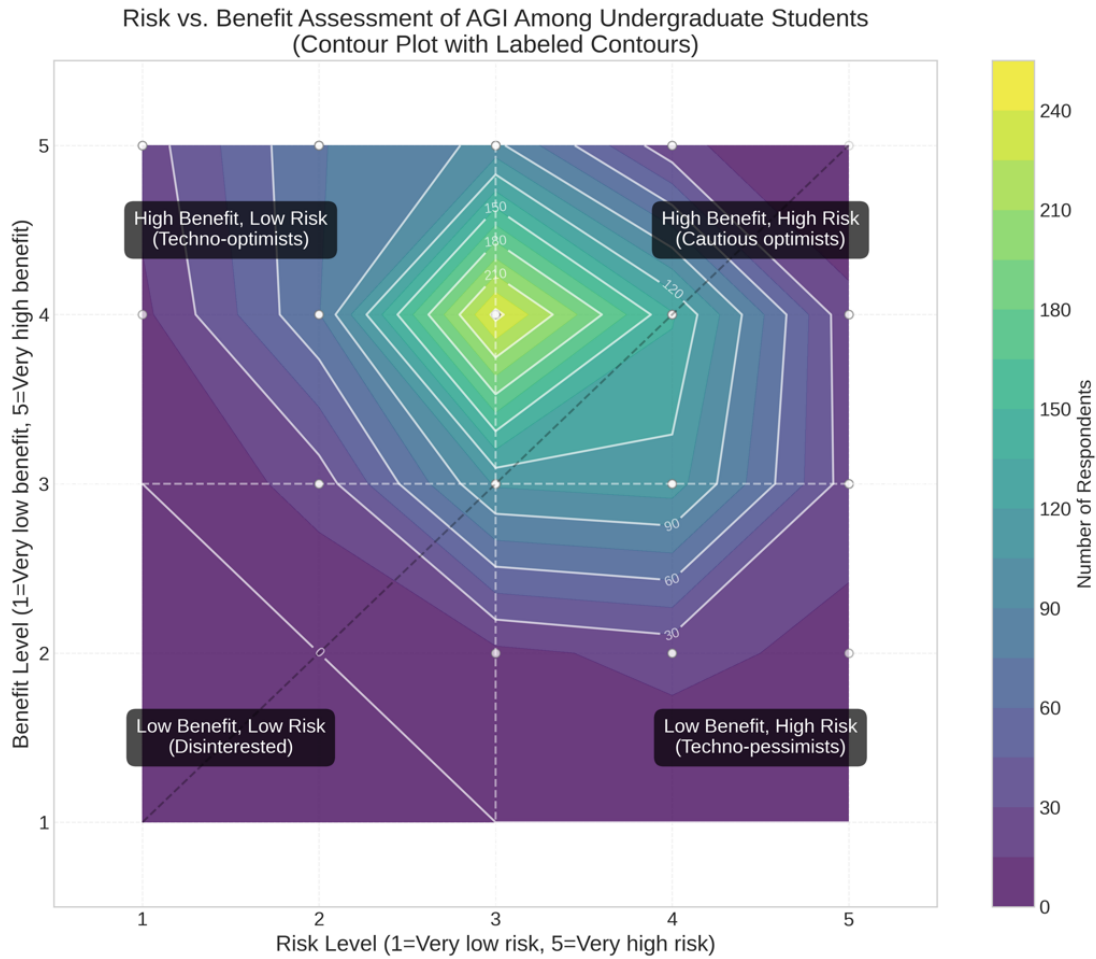
Figure 10. Risk versus benefit assessment of AGI among undergraduate
students (This one did take a few iterations with Manus to show the data in
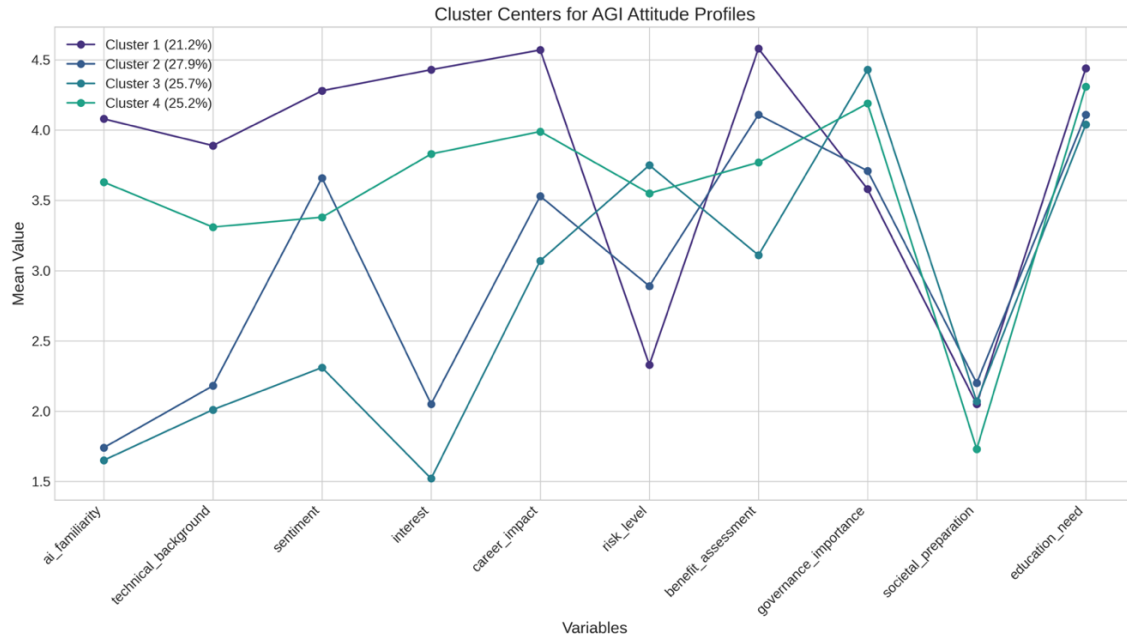a meaningful way)

Figure 11. Cluster centers for AGI attitude profiles. Cluster 1: Techno-Optimists. Cluster 2: Cautious Pragmatists. Cluster 3: Concerned Observer. Cluster 4: Disengaged Skeptics.
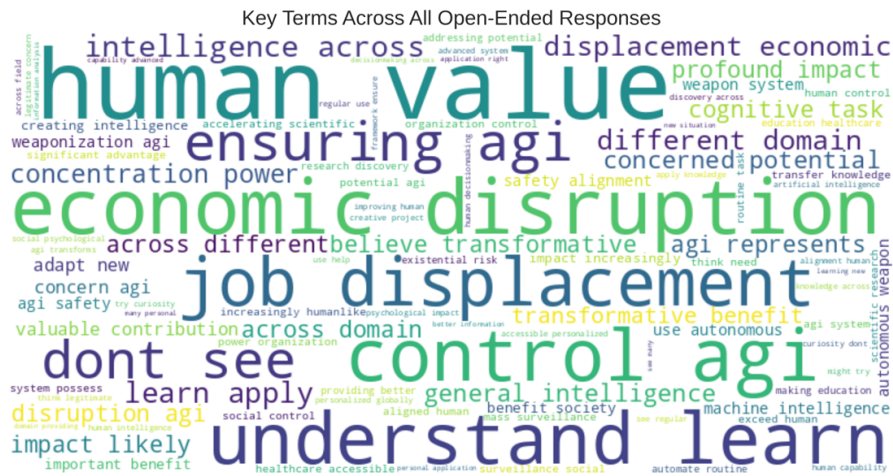

Figure 12. Key terms across all open-ended responses

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Appendix 2. AGI Research Survey Design

Research design survey developed and implemented by Manus

Introduction Section

Title and Description
- **Title**: "Undergraduate Perspectives on Artificial General Intelligence (AGI)"
- **Description**: "This research survey aims to understand undergraduate students' attitudes, expectations, and concerns regarding Artificial General Intelligence (AGI). Your responses will contribute to academic research on how future generations perceive emerging AI technologies. All responses are confidential and will be used for research purposes only. Estimated completion time: 15-20 minutes."

Consent Information
- **Consent Text**: "By completing this survey, you consent to participate in this research study. Your participation is voluntary, and you may exit the survey at any time. Your responses will be kept confidential and analyzed in aggregate form."

Demographics Section

Basic Demographics

1. **Age**
   - Type: Multiple choice
   - Question: "What is your age?"
   - Options: "18-19", "20-21", "22-23", "24-25", "26+"
   - Required: Yes

2. **Gender**
   - Type: Multiple choice
   - Question: "What is your gender?"
   - Options: "Male", "Female", "Non-binary/third gender", "Prefer to self-describe", "Prefer not to say"
   - Required: Yes

3. **Academic Year**
   - Type: Multiple choice
   - Question: "What is your current academic year?"
   - Options: "Freshman", "Sophomore", "Junior", "Senior", "Other"
   - Required: Yes

4. **Field of Study**
   - Type: Multiple choice
   - Question: "What is your primary field of study?"

– Options: "Arts and Humanities", "Social Sciences", "Business/Economics", "Natural Sciences", "Computer Science/IT", "Engineering", "Health Sciences", "Education", "Other"
– Required: Yes

Technical Background

5. **AI Familiarity**
   – Type: Likert scale (1-5)
   – Question: "How would you rate your familiarity with artificial intelligence concepts?"
   – Scale: "1 (Not at all familiar)" to "5 (Very familiar)"
   – Required: Yes

6. **Technical Background**
   – Type: Likert scale (1-5)
   – Question: "How would you rate your technical/programming background?"
   – Scale: "1 (No technical background)" to "5 (Strong technical background)"
   – Required: Yes

7. **Information Sources**
   – Type: Checkbox
   – Question: "Where do you typically get information about AI developments? (Select all that apply)"
   – Options: "Academic courses", "Scientific publications", "News media", "Social media", "Movies/TV shows", "Friends/family", "I don't follow AI developments"
   – Required: Yes

Attitudes Toward AGI Section

8. **AGI Understanding**
   – Type: Paragraph text
   – Question: "In your own words, what do you understand by the term 'Artificial General Intelligence (AGI)'?"
   – Required: Yes

9. **AGI Timeline**
   – Type: Multiple choice
   – Question: "When do you think human-level artificial general intelligence might be developed?"
   – Options: "It already exists", "Within the next 10 years", "Within 10-25 years", "Within 25-50 years", "Within 50-100 years", "More than 100 years from now", "Never"
   – Required: Yes

10. **General Sentiment**
    - Type: Likert scale (1-5)
    - Question: "Overall, how do you feel about the development of AGI?"
    - Scale: "1 (Very negative)" to "5 (Very positive)"
    - Required: Yes

11. **Interest Level**
    - Type: Likert scale (1-5)
    - Question: "How interested are you in following developments in AGI?"
    - Scale: "1 (Not at all interested)" to "5 (Very interested)"
    - Required: Yes

Anticipated Uses of AGI Section

12. **Potential Applications Grid**
    - Type: Grid
    - Question: "How likely do you think AGI will be used in the following areas?"
    - Rows: "Education", "Healthcare", "Scientific research", "Entertainment", "Personal assistance", "Business/finance", "Military/defense"
    - Columns: "Very unlikely", "Unlikely", "Neutral", "Likely", "Very likely"
    - Required: Yes

13. **Personal Use**
    - Type: Paragraph text
    - Question: "How would you personally use AGI if it were available to you?"
    - Required: No

14. **Career Impact**
    - Type: Likert scale (1-5)
    - Question: "To what extent do you think AGI will impact your future career?"
    - Scale: "1 (No impact at all)" to "5 (Transformative impact)"
    - Required: Yes

Anticipated Risks of AGI Section

15. **Risk Level Assessment**
    - Type: Likert scale (1-5)
    - Question: "How risky do you think the development of AGI is for humanity?"
    - Scale: "1 (Not at all risky)" to "5 (Extremely risky)"
    - Required: Yes

16. **Specific Risks Grid**
    - Type: Grid
    - Question: "How concerned are you about the following potential risks of AGI?"

- Rows: "Loss of human jobs", "Privacy violations", "Autonomous weapons", "Loss of human control", "Social manipulation", "Economic inequality", "Existential risk to humanity"
- Columns: "Not concerned", "Slightly concerned", "Moderately concerned", "Very concerned", "Extremely concerned"
- Required: Yes

17. **Personal Concerns**
    - Type: Paragraph text
    - Question: "What concerns you most about the development of AGI?"
    - Required: No

Possible Societal Benefits Section

18. **Benefit Assessment**
    - Type: Likert scale (1-5)
    - Question: "Overall, how beneficial do you think AGI will be for society?"
    - Scale: "1 (Not at all beneficial)" to "5 (Extremely beneficial)"
    - Required: Yes

19. **Specific Benefits Grid**
    - Type: Grid
    - Question: "How significant do you think the following potential benefits of AGI could be?"
    - Rows: "Scientific breakthroughs", "Medical advancements", "Educational improvements", "Economic growth", "Environmental solutions", "Reduction in dangerous human labor", "Improved decision-making"
    - Columns: "Not significant", "Slightly significant", "Moderately significant", "Very significant", "Extremely significant"
    - Required: Yes

20. **Most Important Benefit**
    - Type: Paragraph text
    - Question: "What do you think could be the most important benefit of AGI for society?"
    - Required: No

Possible Societal Risks Section

21. **Governance Importance**
    - Type: Likert scale (1-5)
    - Question: "How important do you think it is to have regulations and governance for AGI development?"
    - Scale: "1 (Not at all important)" to "5 (Extremely important)"
    - Required: Yes

22. **Responsibility**
    – Type: Multiple choice
    – Question: "Who do you think should have the primary responsibility for ensuring AGI is developed safely?"
    – Options: "Government/regulators", "Tech companies", "Academic researchers", "International organizations", "Independent oversight bodies", "The public", "Other"
    – Required: Yes

23. **Societal Preparation**
    – Type: Likert scale (1-5)
    – Question: "How prepared do you think society is for the potential impacts of AGI?"
    – Scale: "1 (Not at all prepared)" to "5 (Very well prepared)"
    – Required: Yes

24. **Biggest Societal Challenge**
    – Type: Paragraph text
    – Question: "What do you think will be the biggest challenge for society in adapting to AGI?"
    – Required: No

Concluding Questions

25. **Education Need**
    – Type: Likert scale (1-5)
    – Question: "How important do you think it is for undergraduate education to include more content about AGI and its implications?"
    – Scale: "1 (Not at all important)" to "5 (Extremely important)"
    – Required: Yes

26. **Future Involvement**
    – Type: Multiple choice
    – Question: "Would you be interested in being involved in AGI development or governance in the future?"
    – Options: "Definitely yes", "Probably yes", "Might or might not", "Probably not", "Definitely not"
    – Required: Yes

27. **Final Thoughts**
    – Type: Paragraph text
    – Question: "Do you have any other thoughts or perspectives on AGI that weren't covered in this survey?"
    – Required: No

Conclusion Section

- **Thank You Message**: "Thank you for participating in this research survey on undergraduate perspectives on Artificial General Intelligence. Your responses will contribute to our understanding of how future generations perceive emerging AI technologies. If you have any questions about this research, please contact [research contact information]."

- **Results Option**: "Would you like to receive a summary of the research findings when available?" (Yes/No checkbox)

Appendix 3. Manus prompts

All tasks were requested of Manus on March 19, 2025.

Manus was initially asked to create a script for a Google Form to use as the basis of a survey of undergraduate attitudes toward Artificial General Intelligence (AGI). The prompt was:

> I would like to create a script for a Google Form that will be used in a research project to survey undergraduates about their hopes and fears about artificial general intelligence. This will be used in a survey-based study to ascertain attitudes toward, anticipated uses of, anticipated risks of, possible societal benefits, and possible societal risks of AGI. It should mix Likert scale questions and open-ended questions. It should also capture important demographic details.

Manus designed the survey (survey_design.md) and generated the Googe Script (agi_survey_script.js) for generating the associated Google Form (See Appendix 4).

Manus was then given the link to the resulting form and asked to create 1,000 synthetic responses:

> Thank you. I would now like you to simulate 1,000 undergraduate students and complete the survey on their behalf -- the link is below. Each student should be an authentic representation of an undergraduate student in the US. The complete set of 1,000 students should be representative of the student body at a public R1 university. The form link is https://forms.gle/N4D58tv5Xeuy1j5c8.

Manus refused to populate the survey using the form on the grounds that this would trigger Google anti-spam responses and would be unethical. It did, however, generate 1,000 simulated responses and save them to the files survey_responses.json and simulated_responses.csv (see Appendix 4).

Finally, Manus was asked to analyze the 1,000 simulated responses to the survey, and produce a detailed report from the analysis:

> I would like you to take the simulated demographic data and the responses, and analyze these as if they were real data. I would like a comprehensive report that is publishable, and that analyzes the open-ended response as well as the Likert scale responses, and teases out important insights. Again, this is a simulation and proof of concept exercise and so commentary on ethical concerns is not necessary.

The final report, along with 6 data visualizations generated by Manus, form the main body of this document.

Appendix 4. Files

All relevant files are available on GitHub: https://github.com/2020science/manus-synth-agi-survey-03-19-2025