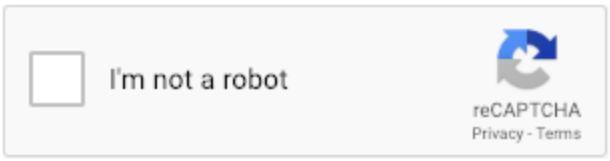
Captcha Verification

Please confirm you are a human before proceeding.



Consent Form

AI Integration and Communication in Software Development Teams

INFORMED CONSENT FORM

RESEARCH PROCEDURES

Welcome to our survey on communication in software development teams, with a focus on the integration and impact of AI technologies. While there is extensive research on AI in various fields, there is limited understanding of how practitioners perceive and utilize AI for communication

within software teams. This survey aims to gather insights from professionals regarding their experiences, challenges, and perceptions of using AI to enhance communication in software development projects. Your responses will remain confidential and anonymous.

If you agree to participate, you will be invited to take a 10-15 minute online survey, asking about your experiences and feedback regarding communication in software development teams and the integration of AI technologies. Survey results will be stored on Mason owned laptops and servers. Only the research team will have access to the results. All study data will be stored for a period of up to 5 years, after which it will all be destroyed by deleting them permanently from the servers and devices on which they live.

RISKS

There are no foreseeable risks for participating in this research.

BENEFITS

There will be no direct benefits for participation. However, insights from this research can indirectly benefit the communication tools and strategies used by software

development teams.

CONFIDENTIALITY

The data in this study will be confidential, shared only amongst the research team. We will only retain email addresses for the purpose of compensation. Email addresses will not be placed on or with the research data and will be destroyed following the compensation, unless respondents opt in for future studies. The de-identified data could be used for future research without additional consent from participants. The de-identified data can be used for future research without additional consent from participants. The Institutional Review Board (IRB) committee that monitors research on human subjects may inspect study records during internal auditing procedures and are required to keep all information confidential. While it is understood that no computer transmission can be perfectly secure, reasonable efforts will be made to protect the confidentiality of your transmission.

PARTICIPATION

To participate in this study, participants must:
- be 18 years of age or older
- Work in a role related to software development (e.g., developer, project manager, operations, QA analyst, UX/UI designer, data scientist)

Your participation is voluntary, and you may withdraw from the study at any time and for any reason. If you decide not to participate or if you withdraw from the study, there is no penalty or loss of benefits to which you are otherwise entitled. There are no costs to you or any other party. Participants will only be compensated if they have completed the entire survey. They will be able to enter themselves in a raffle for one of four $50 Amazon.com gift cards. Under the U.S. federal tax law you may have individual responsibilities for disclosing the dollar value of the incentive received on this study.

CONSENT

I have read this form, all of my questions have been answered by the research staff, and I agree to participate in this study.

- ○ I agree
- ○ No, thanks. I would not like to participate.

Background

Which best describes your current job position? (Select one) *

- ○ Developer
- ○ Project Manager
- ○ Operations
- ○ Researcher
- ○ Data Scientist
- ○ Machine Learning Engineer
- ○ Software Engineer
- ○ Graduate Student
- ○ Postdoctoral Researcher

- ○ Professor/Academic
- ○ [ ] Other (please specify)

How many years of experience do you have in professional software development? (Select one) *

- ○ Less than 1 year
- ○ 1-3 years
- ○ 4-7 years
- ○ 8-10 years
- ○ more than 10 years

How many years have you been in your current job position? (Select one) *

- ○ Less than 1 year
- ○ 1-3 years
- ○ 4-7 years
- ○ 8-10 years
- ○ more than 10 years

Which industry does your company belong to? (Optional)

- ○ Technology (Software, Hardware, IT Services, etc.)
- ○ Finance (Banking, Investment, Insurance, etc.)
- ○ Healthcare (Medical services, Biotechnology, etc.)
- ○ Education (Schools, Universities, Educational Services)
- ○ Manufacturing (Consumer goods, Electronics, Automotive, etc.)
- ○ Retail (Stores, E-commerce, etc.)
- ○ Media (Broadcasting, Publishing, Entertainment)
- ○ Telecommunications
- ○ Public Sector (Government, Defense)
- ○ Non-profit
- ○ [ ] Other (please specify)

What is the size of your company? (Select one) *

- ○ Just me
- ○ 2-9 employees
- ○ 10-19 employees
- ○ 20-99 employees
- ○ 100-499 employees
- ○ 500 or more employees
- ○ I don't know

Communication Challenges

We would like to ask you some questions about the **communication challenges** you may have encountered in your software team(s).

How often do you encounter communication challenges in your software development projects? (Select one) *

- Never
- Rarely
- Sometimes
- Often
- Always

If you have encountered communication challenges, please briefly describe a recent communication challenge you've faced.

Please rate the following communication challenges from 1 to 5 based on how **frequently** they occur or you encounter

them in your teams:

	Never	Rarely	Sometimes	Often	Always
Lack of clear project objectives and goals	○	○	○	○	○
Inadequate or unclear documentation	○	○	○	○	○
Poorly defined roles and responsibilities	○	○	○	○	○
Time zone differences	○	○	○	○	○
Language and cultural barriers	○	○	○	○	○
Other (please specify)	○	○	○	○	○

Please rate the following communication challenges from 1 to 5 based on how much **impact** they have on your team's performance:

	No impact	Minor impact	Moderate impact	High impact	Significant impact
Lack of clear project objectives and goals	○	○	○	○	○
Inadequate or unclear documentation	○	○	○	○	○
Poorly defined roles and responsibilities	○	○	○	○	○
Time zone differences	○	○	○	○	○

	No impact	Minor impact	Moderate impact	High impact	Significant impact
Language and cultural barriers	○	○	○	○	○
Other (please specify)	○	○	○	○	○

Current Communication Practices

Here, we explore the **current methods and tools your team uses to address communication challenges.** We seek to learn which practices are most effective and which could benefit from enhancement or change.

How does your team currently address or mitigate communication challenges? (Select all that apply) *

- ☐ Scheduling Rregular/frequent team meetings (e.g., daily)
- ☐ Regularly create and maintain Clear and detailed documentation
- ☐ Provide T job training or workshops
- ☐ Other (please specify)

Which communication tools do you use regularly in your software development projects? (Select all that apply) *

- [ ] Version Control Systems (e.g., Git, SVN)
- [ ] Instant Messaging (e.g., Slack, Microsoft Teams)
- [ ] Email (including mailing lists)
- [ ] Project Management Tools (e.g., Jira, Trello)
- [ ] Video Conferencing (e.g., Zoom, Microsoft Teams)
- [ ] Other (please specify)

Which team communication strategies do you find most effective? (Select all that apply) *

- [ ] Regular/Frequent team meetings (e.g., daily standups)
- [ ] Written status updates (e.g., via email)
- [ ] Task tracking and assignment (e.g., via project management tools)
- [ ] Other (please specify)

Which team communication strategies do you find least effective? (Select all that apply) *

- [ ] Regular/frequent team meetings (e.g., daily standups)
- [ ] Written status updates (e.g., via email)

- [ ] Task tracking and assignment (e.g., via project management tools)
- [ ] Other (please specify)

AI and Communication

This section focuses on the r**ole of AI in supporting communication within software teams**. We are interested in your experiences and perspectives on integrating AI technologies to improve team interactions and overall project outcomes.

Have you personally used AI-powered tools or technologies to support or enhance communication in your software projects? (Select one) *

- ○ Yes
- ○ No

How aware are you of the ways in which AI is currently used to support communication within software teams? (Select

one) *

- Very aware (I am familiar with specific AI tools and their applications in team communication)
- Somewhat aware (I know that AI is used in team communication but am not familiar with specific tools or applications)
- Not aware at all (I do not know how AI is used in team communication)

How familiar are you with specific AI tools and technologies currently used to support communication within software teams? (Select one) *

- Very aware (I am familiar with specific AI tools and their applications in team communication)
- Somewhat aware (I know that AI is used in team communication but am not familiar with specific tools or applications)
- Not aware at all (I do not know how AI is used in team communication)

What are the primary challenges your team faces when integrating AI into your communication processes? *

- Lack of understanding of AI capabilities
- Integration with existing communication tools
- Data privacy and security concerns
- Resistance to change from team members
- Insufficient training or skillsets

- ○ High cost of AI implementation
- ○ Limited availability of quality data
- ○ Difficulty in maintaining and updating AI systems
- ○ Other (please specify) [ ]

Has your team used AI-powered tools or technologies to support or enhance communication in your software projects? (Select one) *

- ○ Yes
- ○ Maybe
- ○ No

If yes, which AI technologies or tools have you found most beneficial for supporting communication in software teams? (Select all that apply) *

- ○ Natural Language Processing (NLP) (e.g., GPT-3, BERT, spaCy)
- ○ Sentiment Analysis (e.g., MonkeyLearn, IBM Watson Tone Analyzer)
- ○ Speech Recognition (e.g., Google Speech-to-Text, Microsoft Azure Speech)
- ○ Facial Recognition and Emotion Detection (e.g., Affectiva, Microsoft Azure Face API)
- ○ Code Autocompletion and Assistance (e.g., GitHub Copilot, TabNine)
- ○ Chatbots and Virtual Assistants (e.g., ChatGPT, Microsoft Bot Framework)

- Machine Learning for Predictive Communication Analytics (e.g., Salesforce Einstein, Microsoft Azure Machine Learning)
- Other (please specify)

If yes, which AI technologies or tools have you found most beneficial for supporting communication in software teams? (Select all that apply) *

- Natural Language Processing (NLP) (e.g., GPT-3, BERT, spaCy)
- Sentiment Analysis (e.g., MonkeyLearn, IBM Watson Tone Analyzer)
- Speech Recognition (e.g., Google Speech-to-Text, Microsoft Azure Speech)
- Facial Recognition and Emotion Detection (e.g., Affectiva, Microsoft Azure Face API)
- Code Autocompletion and Assistance (e.g., GitHub Copilot, TabNine)
- Chatbots and Virtual Assistants (e.g., ChatGPT, Microsoft Bot Framework)
- Machine Learning for Predictive Communication Analytics (e.g., Salesforce Einstein, Microsoft Azure Machine Learning)
- Other (please specify)

How do you view the role of AI within your team? (Select one) *

- As an automated tool providing support (e.g., automating tasks, providing suggestions)

- ○ As a collaborative team member (e.g., assisting with decision-making, contributing to discussions)
- ○ Other (please specify) _____

How do you perceive the impact of AI on communication in software teams? (Select one) *

- ○ Very positive impact
- ○ Positive impact
- ○ No significant impact
- ○ Negative impact
- ○ Very negative impact

What specific benefits have you observed from using AI in team communication?

_____

What specific benefits have you observed from using AI in team communication?

Why do you feel that AI has not made a noticeable difference in team communication?

What challenges or issues have you experienced with AI in team communication?

What challenges or issues have you experienced with AI in team communication?

Is there anything else you'd like to share about your experiences with or perceptions of AI-based

communication on software teams?

Demographics

Thank you for sharing your experiences! Please take one more minute to provide your demographic information to help us responsibly and accurately report on our insights.

What is your age? (Select one) *

- Under 20
- 20-29
- 30-39
- 40-49
- 50-59
- 60 and above

What is your gender? (Select one) *

- Male

- ○ Female
- ○ Non-binary, genderqueer, or gender non-conforming
- ○ Prefer not to answer
- ○ Other

Which of the following describes your race or ethnicity? Please check all that apply. *

- ☐ White
- ☐ Black or African American
- ☐ American Indian or Alaska Native
- ☐ Asian
- ☐ Native Hawaiian or Pacific Islander
- ☐ Middle Eastern
- ☐ Indian
- ☐ Prefer not to answer
- ☐ Other

Are you blind, or do you have serious difficulty seeing, even when wearing glasses? *

- ○ Yes
- ○ No

- Maybe
- Prefer not to answer

Because of a physical, mental, or emotional condition, do you have serious difficulty concentrating, remembering, or making decisions? *

- Yes
- No
- Prefer not to answer

Do you have serious difficulty walking or climbing stairs without assistance? *

- Yes
- No
- Prefer not to answer

Which of the following best describes the highest level of formal education that you've completed? (Select one) *

- Primary/elementary school
- Secondary school
- Some college/university study without earning a degree

- ○ Associate degree (A.A., A.S., etc.)
- ○ Bachelor's degree (B.A., B.S., B.Eng., etc.)
- ○ Master's degree (M.A., M.S., M.Eng., MBA, etc.)
- ○ Professional degree (JD, MD, Ph.D., Ed.D., etc.)
- ○ Something else (please specify) [ ]

How do you primarily learn new coding skills? (Select all that apply) *

- ☐ Online courses or certifications
- ☐ Self-taught from online resources (e.g., videos, blogs, forums)
- ☐ Traditional education (e.g., university, college)
- ☐ On-the-job training
- ☐ Bootcamps
- ☐ Other (please specify) [ ]