

## Consent

The purpose of this survey is to learn more about research scientists who program (write code) as part of their scientific work and their experiences with generative AI code tools.

It should take 10–15 minutes to complete and includes questions about your programming experience and practices, demographics, and usage of AI tools for coding. You may decline to answer any questions. Optionally, you may provide a contact email address to enter a raffle drawing for 1 of 5 \$100 awards at the end of the survey.

This study has been reviewed by the University of Michigan Institutional Review Board and determined to be of minimal risk to participants. You may read the [full informed consent statement here](#). Please contact the principal investigator, Elle O'Brien, at [elleobri@umich.edu](mailto:elleobri@umich.edu) with any questions.

To continue on to the survey, please confirm the following statements.

I am age 18 or older.

- ☐ Yes
- ☐ No

I have read and understood the information above.

- ☐ Yes
- ☐ No

I want to participate in this research and continue with the survey.

- ☐ Yes
- ☐ No

## Demographics

What best describes the type or organization where you work?

- ☐ Higher education
- ☐ National laboratory
- ☐ Private sector
- ☐  Other (self-describe)

In which country do you currently work?

What best describes your current job title?

- ☐ Research staff
- ☐ Faculty
- ☐ Student research assistant
- ☐ Post-doctoral researcher
- ☐ Research software engineer
- ☐  Other (self-describe)

Approximately how many years have you been working in science research? Please enter a number.

What is your gender?

- ☐ Man
- ☐ Woman
- ☐ Non-binary / gender-diverse
- ☐ Prefer not to say

Which of the following best describes your research area?

Does your research group publish peer-reviewed works of research, like journal articles or conference proceedings?

- ☐ Yes
- ☐ No
- ☐ I'm not sure

## Programming background

Approximately how many years of programming experience do you have, in any language? Please enter a number.

Typically, how often do you program as part of your research?

- ☐ Daily
- ☐ Weekly
- ☐ Monthly
- ☐ Less than once a month
- ☐ Never

What programming language(s) do you primarily use in your research? Check all that apply.

- ☐ Python
- ☐ R
- ☐ C
- ☐ C++
- ☐ MATLAB
- ☐ Stata
- ☐ FORTRAN
- ☐ Rust
- ☐ Julia
- ☐ JavaScript
- ☐ Java
- ☐ Bash
- ☐  Other

## Organizational coding practices

For the following questions, think about the research group or team you currently work with.

When you publish scientific research that involved programming to complete, do you share any related code in a public repository?

- ☐ Always
- ☐ Most of the time
- ☐ About half the time
- ☐ Sometimes
- ☐ Never

How often do you write code that is used by at least one other person INSIDE your research group?

- ☐ Always
- ☐ Most of the time
- ☐ About half the time
- ☐ Sometimes
- ☐ Never



How often do you write code that is used by at least one other person OUTSIDE your research group?

- ☐ Always
- ☐ Most of the time
- ☐ About half the time
- ☐ Sometimes
- ☐ Never

Are you familiar with any of the following software development practices? Check all that apply.

- ☐ Version control
- ☐ Code testing
- ☐ Code review
- ☐ Continuous integration
- ☐ I am not familiar with any of these.

In a typical project, how often do you use the following development practices?

	Always	Most of the time	About half the time	Sometimes	Never
Version control	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Code review	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Continuous integration	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Unit testing	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Regression testing	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
System testing	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

You indicated that you use code review at least sometimes. Who typically reviews your code?

- ☐ A supervisor
- ☐ A peer in your research group
- ☐ A collaborator outside the research group
- ☐  Someone else (please write in)

## Experience with GenAI tools

Have you tried any generative AI (genAI) tools for programming support? Check all that apply.

Please ONLY think about programming, not other research activities like literature review or manuscript writing.

- ☐ ChatGPT
- ☐ A custom tool provided by organization
- ☐ GitHub Copilot
- ☐ Google Gemini
- ☐ Cursor
- ☐ TabNine
- ☐ Claude
- ☐ Claude Code
- ☐ Perplexity
- ☐ Microsoft Copilot
- ☐  Other (please write in)

How often do you use a genAI tool in your research-related programming?

- ☐ Always
- ☐ Most of the time
- ☐ About half the time
- ☐ Sometimes
- ☐ Tried but gave up
- ☐ I've never tried

## **Non-adoption**

You indicated that you haven't tried any genAI tools, or don't regularly use them, for your research-related programming. Why do you think this is?

## **Anything else?**

Is there anything else you would like to share about your

experiences or thoughts about AI code tools for science research?

If not, you may leave this blank and continue on to the next page.

## Contact info

Please check all that apply.

- ☐ I would like to sign up for the raffle to win a check.
- ☐ I am willing to be contacted about a follow-up study on this same topic. I understand that if I am contacted, I am under no obligation to participate.

Please enter your email. This will only be used to notify you about future research or raffle winnings based on your previous response. Email will never be published or shared outside the study team.

## Primary tool

You indicated you have tried the following genAI tools for programming support. Which one do you use MOST in your research-related programming?

- ☐ » ChatGPT
- ☐ » A custom tool provided by organization
- ☐ » GitHub Copilot
- ☐ » Google Gemini
- ☐ » Cursor
- ☐ » TabNine
- ☐ » Claude
- ☐ » Claude Code
- ☐ » Perplexity
- ☐ » Microsoft Copilot
- ☐ » Other (please write in)

## How do you typically access this tool?

- ☐ Through a web browser
- ☐ With a mobile app
- ☐ As a plugin for my programming environment (VS Code, RStudio, PyCharm, etc.)
- ☐ With a desktop app
- ☐  Other (please write in)

## How many lines of generated code suggestions do you typically accept at one time when working with this tool?

- ☐ <1 line
- ☐ 1-5 lines
- ☐ 5-10 lines
- ☐ 10-50 lines
- ☐ 50-100 lines
- ☐ >100 lines
- ☐ I don't use genAI to produce code suggestions directly

## Perceived productivity

Think about how you use your primary genAI tool in research-related programming. Rate your agreement with the following statements.

	Strongly disagree	Somewhat disagree	Neither agree nor disagree	Somewhat agree	Strongly agree
The code I write using this tool is better than the code I would have written without it.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I find myself less frustrated during coding sessions when using this tool.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
While working with an unfamiliar language, I make progress faster when using this tool.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I complete programming tasks faster when using this tool.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I produce more lines of code with this tool than I would have without it.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I am more productive when I use this tool.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I learn from the responses this tool	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>



gives me.

I spend less time  
searching for  
information or  
examples when  
using this tool.

☐☐☐☐☐

I am better able to  
understand other  
people's code with  
this tool.

☐☐☐☐☐

## Use case

Think about one specific, real-world example of how you used your primary generative AI tool while doing research-related programming. What were you trying to achieve?

How did you use the tool in this example? If possible, please include any prompts, either from your chat history or what you remember.

How did you determine if the output of the generative AI tool was acceptable?

How confident are you in your ability to do this task without generative AI? Please rate your confidence from 1 (not at all confident) to 5 (extremely confident).

1	2	3	4	5
(not at all confident)				(extremely confident)
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

How confident are you in the ability of generative AI to do this task?

1	2	3	4	5
(not at all confident)				(extremely confident)
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

How confident are you, in the course of your normal work (e.g., accounting for time and resource demands of your task), in evaluating the output that AI produces for this task?

1	2	3	4	5
(not at all confident)				(extremely confident)
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

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