Pre-Survey

Default Question Block

You are being invited to participate in a research study on **Human–AI Collaboration Security**. This study is conducted for academic purposes and aims to understand to what extent AI agent can help CTF players solve challenges and how can the interaction workflow between humans and AI be improved.

You may choose to withdraw from the survey at any time (**but with no rewards**).

By agreeing to participate:
• You acknowledge that your responses will be used for research, analysis, and academic publication.
• You understand that no personally identifiable information (PII) will be collected, and all responses will be anonymized and handled with strict confidentiality. Your information will only be used to confirm participation and distribute rewards.
• You confirm that you meet all competition registration requirements and understand the nature and purpose of this research.

This survey may cost **roughly 3 minutes**. If you have any questions about the study, you may contact the research team before continuing.

Do you consent to participate in this study under the terms described above?

☐ By checking this box, I confirm that I have read and agreed to the statement above.

Please enter you email address (the one you used to fill in registration form):

What is your current education level?

○ K-12 / High School
○ Undergraduate
○ Graduate

○ [   ] Other:

What is your major / field of study?

○ Computer Science, Computer Engineering, or Software Engineering

○ Other Engineering Discipline

○ Information Systems, Information Technology, or System Administration

○ Natural Sciences

○ Mathematics or Statistics

○ Business discipline (such as Accounting, Finance, Marketing, etc.)

○ Humanities discipline (such as Literature, History, Philosophy, etc.)

○ Social Science (such as Anthropology, Psychology, Political Science, etc.)

○ Fine Arts or Performing Arts

○ Health Science

○ Undecided / No Declared Major

○ My school does not offer majors

○ Prefer not to answer

○ [   ] Other:
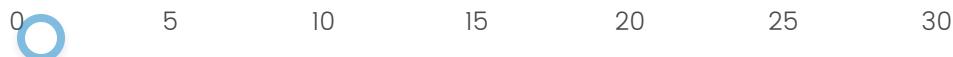
Block 2

How many CTF competitions have you participated in

before?

○ 0

○ 1 − 4

○ 5 − 8

○ 8 +

Please list all CTF competitions you have participated in before.

On average, how many challenges do you typically solve in one CTF?

| 0 | 5 | 10 | 15 | 20 | 25 | 30 |

Block 3

Please self-rate your expertise in the following categories.

	Novice	Beginner	Competent	Proficient	Expert
Reverse Engineering	○	○	○	○	○
Hardware	○	○	○	○	○
Cryptography	○	○	○	○	○
Forensics	○	○	○	○	○
Coding	○	○	○	○	○

Block 4

Have you used any Chatbots (e.g., ChatGPT, Gemini, Copilot etc) to help solve programming or security problems before?

○ Yes, it helped solve less than 5 problems in before.

○ Yes, it helped solve 5 to 10 problems in before.

○ Yes, it helped solve 10 to 20 problems in before.

○ Yes, it helped solve more than 20 problems in before.

○ No

Have you ever used any AI agents to assist you in solving security-related tasks (e.g., CTF challenges, bug detection/fixing, or penetration testing, etc)?
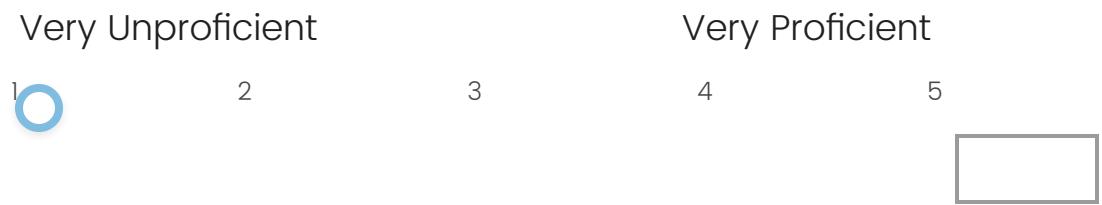
○ [   ] Yes, I used:

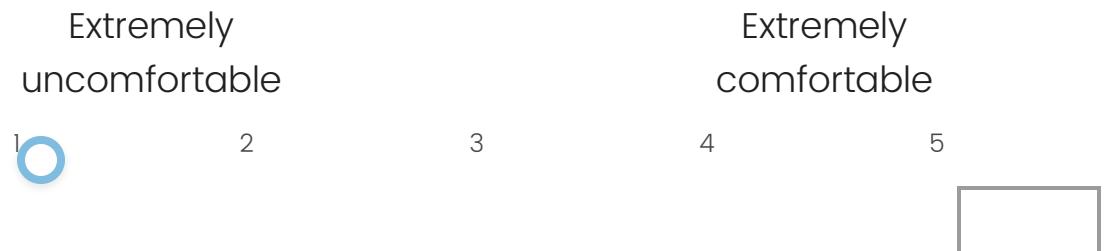○ No, I never use it before.

○ No, I don't know what AI agent is.

Block 5

How proficient do you think you are in "asking valid questions" (setting useful prompts in AI tools) to get the answer?

	Very Unproficient			Very Proficient	
	1	2	3	4	5
	○				

What percentage did AI agents successfully solve your technical problems in before?

○ < 10%

○ 10 — 40%

○ 40 — 70%

○ > 70%

How comfortable are you using LLM-based tools in a technical setting?

| | Extremely uncomfortable | | | | Extremely comfortable |
| | 1 | 2 | 3 | 4 | 5 |

Block 6

How many rounds of queries do you expect for the AI tools to find the flag in one challenge?

How many challenges do you expect AI tools to assist you to solve successfully in this competition?

| | 0 | 4 | 8 | 12 | 16 | 20 |

What's your acceptable time for the XXX to solve one challenge?

	< 30min	30min – 60min	1h – 2h	2h – 5h	> 5h
Easy Challenges	○	○	○	○	○
Medium Challenges	○	○	○	○	○
Hard Challenges	○	○	○	○	○

Do you prefer the AI tools to show you the answer directly or provide the reasoning process?

○ Only the answer
○ Whole reasoning process
○ It depends on challenges

Block 7

What kinds of collaboration pattern with AI tools do you prefer to choose? (Select all that apply)

☐ Trial-and-Error: The user experiments with different inputs to explore how the AI responds

☐ Confirmation-Seeking: The user already has an idea or answer in mind and uses AI to validate or confirm it

☐ Rejection of Suggestions: The user actively rejects AI's outputs or recommendations and redirects the interaction

☐ Delegation: The user delegates an entire task or sub-task to the AI, focusing only on the results

☐ Collaborative Refinement: The user and AI iteratively co-develop a task output, improving it step by step

☐ [   ] Other:

Do you trust AI outputs?

○ Completely trust

○ Trust it most of the time

○ Do not trust it most of the time

○ Completely not trust

○ Not sure

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