

# AI4DS-Student-Survey

## Survey Flow

Block: Default Question Block (2 Questions)

Branch: New Branch

If

If Consent: I voluntarily consent to participate in this study Is Selected

Standard: Section 1: Demographics (3 Questions)

Standard: Section 2: Background (4 Questions)

Standard: Section 3: Awareness of AI Tools for Data Science (5 Questions)

Standard: Section 4: Attitudes Towards AI in Data Science (3 Questions)

Standard: Section 5: Understanding AI Limitations and Concerns (3 Questions)

Standard: Section 6: Potential to Improve the data science Workflow with AI Tools (4 Questions)

EndSurvey:

Page Break

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## Start of Block: Default Question Block

**Welcome to The Research Study!** **Title of Study:** Usage and Perceptions of Generative AI Technology in Data Science among University Students **Purpose of Study:** This study aims to assess students' awareness, attitudes, and competency regarding the use of AI tools in data science. We will also explore how AI tools can improve data science workflows and what concerns or pitfalls may arise when integrating AI into data science tasks. In order to conduct this research study, we need to collect data from the NCA&T students enrolled in the Statistics & Data Science courses. **Confidentiality:** This study has been approved by the Institutional Review Board at NCA&T. Any information that is obtained in connection with this study and that can be identified with you will remain confidential. Your anonymized data will be used only by the study investigators and all results will be reported in aggregate form so that no individual student can be identified. Your decision whether or not to participate will not affect your performance in the course or your relationship with NCA&T in any way. If you decide to participate, you are free to withdraw your consent and to discontinue participation at any time without prejudice. If you have any questions about this study, you may contact the Principal Investigator Dr. Abeer Hasan via email at [amhasan1@ncat.edu](mailto:amhasan1@ncat.edu) or by calling (336) 285-3752. If you have any study-related concerns or any questions about your rights as a participant in the study, you may call the Office of Research Compliance and Ethics at North Carolina A&T State University at (336) 285-3179 or email [rescomp@ncat.edu](mailto:rescomp@ncat.edu). The survey should take you about 10 minutes to complete. By clicking the button below to start the survey, you acknowledge that Your participation in the study is voluntary, You are 18 years of age or older, and You are aware that you may choose to terminate your participation at any time for any reason.

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Q2 Consent:

- ☐ I voluntarily consent to participate in this study (1)
- ☐ I don't consent to participate in this study (2)

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## End of Block: Default Question Block

## Start of Block: Section 1: Demographics

Q3 I am

- ☐ Male (1)
  - ☐ Female (2)
  - ☐ Non-binary / third gender (3)
  - ☐ Trans man (4)
  - ☐ Trans woman (5)
  - ☐ Prefer not to say (6)
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Q4 What is your major?

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Q5 What is your classification?

- ☐ Freshman (1)
- ☐ Sophomore (2)
- ☐ Junior (3)
- ☐ Senior (4)

End of Block: Section 1: Demographics

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Start of Block: Section 2: Background

Q6 Have you ever used AI technologies (e.g., MS Copilot, Google Colab, etc.) in your data science work?

- ☐ Never (1)
- ☐ Rarely (2)
- ☐ Sometimes (3)
- ☐ Often (4)
- ☐ Very Often (5)

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Page Break

Q7 What did you use AI technology for? (select all that applies)

☐

Proof reading (1)

☐

Getting initial draft (2)

☐

Help with coding (3)

☐

Mathematical Proofs (4)

☐

Literature Review (5)

☐

Other, please specify (6)

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Q8 Are you interested in pursuing a degree in data science in the future?

☐ Yes (1)

☐ Not sure (2)

☐ No (3)

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Page Break

Q9 Are you interested in getting a job in data science in the future?

- ☐ Yes (1)
- ☐ Not sure (2)
- ☐ No (3)

End of Block: Section 2: Background

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Start of Block: Section 3: Awareness of AI Tools for Data Science

Q10 How familiar are you with the following AI technologies in data science? (Rate on a scale: Very Familiar, Somewhat Familiar, Neutral, Not Very Familiar, Not at All Familiar)

	Not at All Familiar (1)	Not Very Familiar (2)	Neutral (3)	Somewhat Familiar (4)	Very Familiar (5)
ChatGPT (1)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Gemini (2)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Google Colab (3)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
AI-powered data visualization tools (e.g., Tableau, Power BI with AI) (4)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
AI-driven analytics platforms (e.g., DataRobot) (5)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

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Page Break

Q11 Which AI tools have you used in your data science tasks? (Select all that apply)

- ☐ ChatGPT (1)
  - ☐ AI-powered visualization tools (2)
  - ☐ Predictive analytics tools (e.g., DataRobot) (3)
  - ☐ Grammarly (4)
  - ☐ Canva or AI assisted presentation tools (5)
  - ☐ Others, please specify (6)
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☐ ☒ None (7)

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Page Break



Q12 To what extent do you agree with the following statements regarding AI tools in data science? (Strongly Disagree, Disagree, Neutral, Agree, Strongly Agree)

	Strongly Disagree (1)	Disagree (2)	Neutral (3)	Agree (4)	Strongly Agree (5)
AI tools can enhance the accuracy of data science models. (1)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
AI tools can automate tedious data processing tasks. (2)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
AI tools can provide new insights or perspectives I wouldn't have discovered otherwise. (3)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
AI tools lack emotional intelligence, which may limit their utility in complex tasks. (5)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Page Break

Q13 How often do you use AI tools for the following data science tasks? (Never, Rarely, Sometimes, Often, Always)

	Never (1)	Rarely (2)	Sometimes (3)	Often (4)	Always (5)
Exploratory data analysis (1)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Predictive modeling (2)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Data visualization (3)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Automating data cleaning tasks (4)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Presenting findings and reports (5)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

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Page Break

Q14 How confident are you in explaining AI-generated outputs for data analysis tasks to peers or supervisors?

- ☐ Very Confident (1)
- ☐ Confident (2)
- ☐ Neutral (3)
- ☐ Not Very Confident (4)
- ☐ Not at All Confident (5)

End of Block: Section 3: Awareness of AI Tools for Data Science

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Start of Block: Section 4: Attitudes Towards AI in Data Science

Q15 To what extent do you agree with the following statements regarding the future of AI in data science? (Strongly Disagree, Disagree, Neutral, Agree, Strongly Agree)

	Strongly Disagree (1)	Disagree (2)	Neutral (3)	Agree (4)	Strongly Agree (5)
AI tools are essential for future data science workflows. (1)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
AI can improve efficiency in analyzing large datasets. (2)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
AI can make data science more accessible to non-technical professionals. (3)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Overreliance on AI tools could diminish fundamental data science skills. (4)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

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Page Break

Q16 Do you think students should learn how to use AI tools for their data science careers?

- ☐ Yes, it's essential (1)
- ☐ Yes, but not a priority (2)
- ☐ Neutral (3)
- ☐ No, it's not necessary (4)
- ☐ No, it may even be harmful (5)

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Q17 To what extent do you agree with the following statement: I am willing to incorporate AI tools more into my data science projects in the future.

- ☐ Strongly Agree (1)
- ☐ Agree (2)
- ☐ Neutral (3)
- ☐ Disagree (4)
- ☐ Strongly Disagree (5)

End of Block: Section 4: Attitudes Towards AI in Data Science

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Start of Block: Section 5: Understanding AI Limitations and Concerns

Q18 To what extent are you aware of the following limitations of using AI for data science tasks?  
(Very Aware, Somewhat Aware, Neutral, Not Very Aware, Not at All Aware)

	Very Aware (1)	Somewhat Aware (2)	Neutral (3)	Not Very Aware (4)	Not at All Aware (5)
AI tools can produce biased results due to biased training data. (1)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
AI tools may generate factually incorrect outputs (hallucinations). (2)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
AI models lack real-world experience and context understanding. (3)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
AI-generated results often need to be validated by experts. (4)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Using AI tools could pose data privacy risks. (5)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Page Break

Q19 What are your primary concerns about using AI tools in data science?

- ☐ Accuracy and reliability of the outcome of AI tools (1)
- ☐ Lack of transparency in AI decision-making (2)
- ☐ Data privacy and security issues (3)
- ☐ Ethical concerns (e.g., bias in AI models) (4)
- ☐ Over-reliance on AI leading to skill degradation (5)
- ☐ Difficulty in understanding how AI models work (6)
- ☐ Don't know/ none. (7)

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Q20 Have you ever encountered issues such as hallucinations, bias, or inaccuracy while using AI tools for data science tasks?

- ☐ Yes, frequently (1)
- ☐ Yes, occasionally (2)
- ☐ No, never (3)
- ☐ I never used AI tools for data science (4)

End of Block: Section 5: Understanding AI Limitations and Concerns

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Start of Block: Section 6: Potential to Improve the data science Workflow with AI Tools

Q21 Do you think AI tools can significantly enhance the following aspects of your data science workflow? (Strongly Disagree, Disagree, Neutral, Agree, Strongly Agree)

	Strongly Disagree (1)	Disagree (2)	Neutral (3)	Agree (4)	Strongly Agree (5)
Automating repetitive data processing tasks (1)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Enhancing predictive modeling accuracy (2)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Visualizing complex datasets more effectively (3)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Supporting faster decision-making (4)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Helping communicate findings to non-technical stakeholders (5)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

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Page Break

Q22 What concerns or challenges do you face when integrating AI tools into your data science workflow?

- ☐ Complexity in setting up and using AI tools (1)
- ☐ Accuracy and reliability of AI predictions (2)
- ☐ Understanding how AI models generate outputs (3)
- ☐ Data security and privacy risks (4)
- ☐ AI's impact on data science job roles (5)

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Page Break

Q23 What concerns do you have about integrating AI tools into education in general?

- ☐ Using generative AI technologies such as ChatGPT to complete assignments undermines the value of university education. (1)
- ☐ Generative AI technologies such as ChatGPT will limit my opportunities to interact with others and socialize while completing coursework. (2)
- ☐ Generative AI technologies such as ChatGPT will hinder my development of generic or transferable skills such as teamwork, problem-solving and leadership skills. (3)
- ☐ I can become over-reliant on generative AI technologies (4)

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Q24 Do you believe that AI tools should complement traditional methods in data science, or replace them?

- ☐ AI tools do not complement traditional data science tools (1)
- ☐ AI tools complement traditional methods (2)
- ☐ Balance between AI tools and traditional methods (3)
- ☐ AI tools mostly replace traditional methods (4)
- ☐ Rely entirely on AI tools (5)

End of Block: Section 6: Potential to Improve the data science Workflow with AI Tools

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