



Navigating Academic Research Projects & AI

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Today's Session

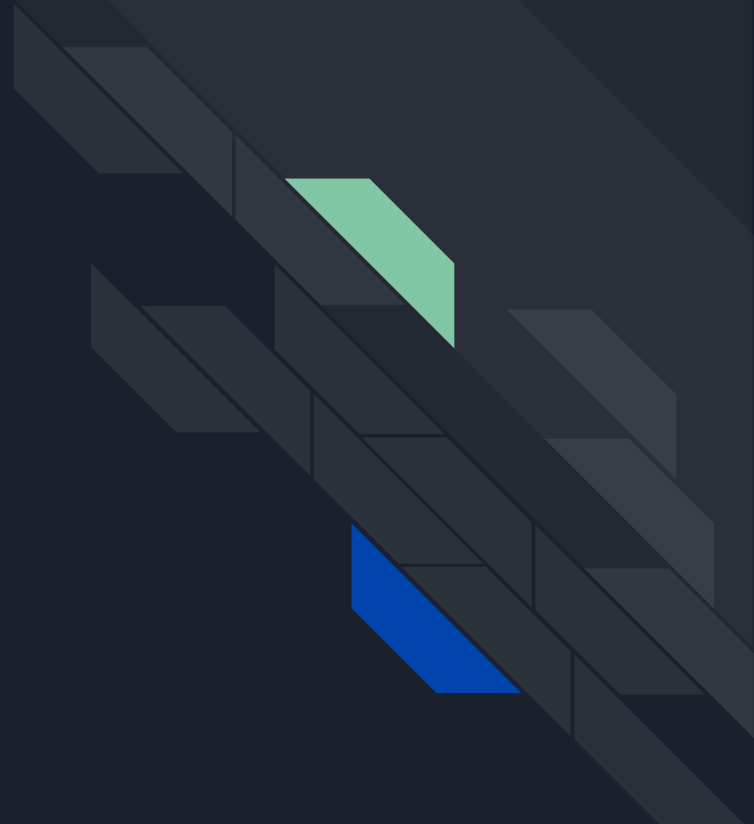
1. Being a researcher

- a. Professional communication
- b. Time management
- c. Logging time

2. Using AI in research

- a. Policy framework
- b. Risks and precautions
- c. AI accuracy and bias
- d. AI in the research process overview

3. What projects are you working on?





PROFESSIONAL COMMUNICATION

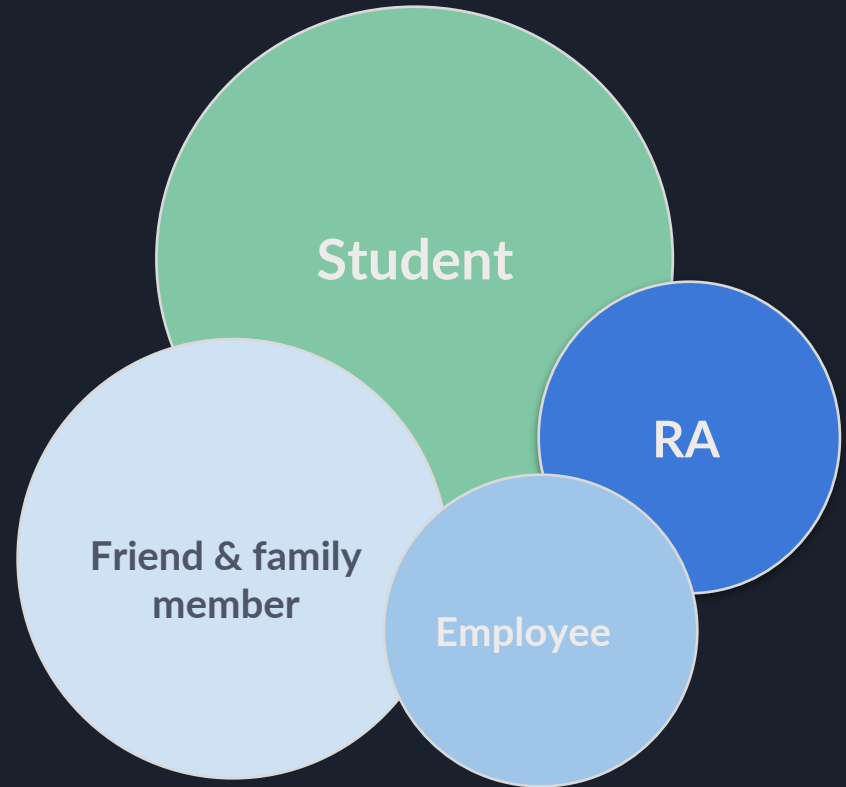
With faculty, primary investigators, research assistants, graduate students, postdocs, teacher's assistants, other undergraduates

What is professional communication?

- Responsiveness
- Proactivity
- Asking for clarification of their expectations*
- Collegiality
- Confidentiality - research ethics
- Appropriateness in tone
- Discussion of your boundaries and expectations

TIME MANAGEMENT

- Acknowledge your multiple roles
- Primary role : student
- Time management supports self-care!
- Learn to say no :)

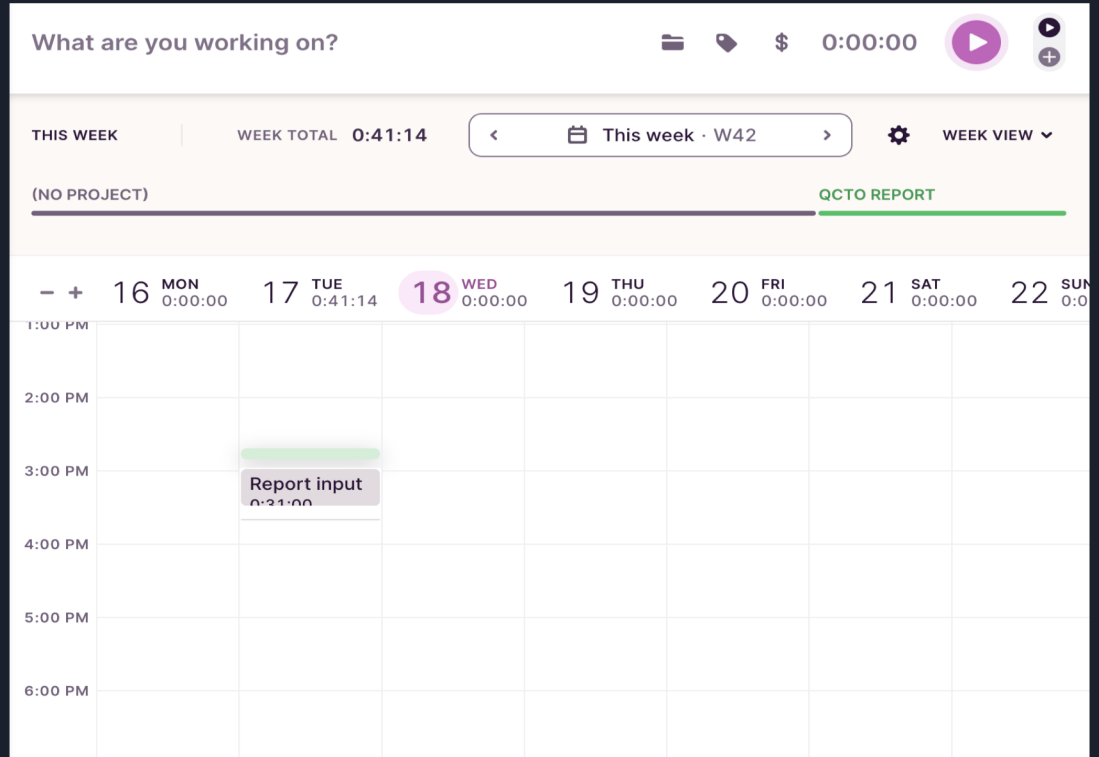


LOGGING TIME

	Lit Review	Analysis	Meetings	Cleaning data	TOTAL
01/05/23	1			1	2
01/06/23			.5		.5
01/07/23			.5	1	1.5
01/08/23		1			1
01/09/23					0
01/10/23					0
TOTAL					5



LOGGING TIME

The logo for Toggl Track, featuring the word "toggl" in a bold, lowercase, purple font and "track" in a lighter, lowercase, purple font.The logo for Clockify, featuring a blue clock icon with a black dot and the word "clockify" in a blue, lowercase, sans-serif font.The logo for TrackingTime, featuring the word "TrackingTime" in a dark blue, sans-serif font and a red play button icon.The logo for TimeCamp, featuring a green circular icon with a white checkmark and the word "TimeCamp" in a black, sans-serif font.

Artificial Intelligence in Research





Policies at UofT

- [Code of Behaviour on Academic Matters](#)
- [Policy on Ethical Conduct in Research](#)
- [Statement on Research Integrity](#)

- [Generative AI Tools and Copyright Considerations](#)
- [ChatGPT and Generative AI in the Classroom](#)
- [UofT Libraries Citation Guide for AI Generated Content](#)



Risks

1. What researchers and policy-makers are thinking about: the legal status of copyright and intellectual property (IP) issues of using generative AI
2. What students and RAs need to think about: academic integrity and research integrity

Precautions

- Talk to your supervisor
- Disclose the use of AI tools
- Attribute your work and the extent to which you have used a technology
 - keep explicit records of your workflow
- Be mindful of not sharing IP that you don't have permission to share



AI Bias & Accuracy

“Student Use Cases for AI” - Harvard Business Publishing

<https://hbsp.harvard.edu/inspiring-minds/student-use-cases-for-ai>

- LLMs don't have real “understanding”, but fill in what they think comes next based on their training (predictive models)
- Can produce plausible sounding info: Don't trust it's output at face value (needs to be verified/ critically evaluated)
- All LLM's have potential for bias via their training and human intervention
- Do not share anything with LLM's you want to keep private



Different AI Tools for different research tasks

The research process:

- Literature review:
 - Searching for sources
 - Collecting and organizing source archive
 - Creating a bibliography
- Working with data:
 - Collecting
 - Analyzing
 - Reporting
- Writing:
 - Reports
 - Academic articles

AI in the research process:

- Literature review tools: ([Research Rabbit](#), [Elicit](#))
 - Geneological search - supplements using research databases & citation managers
- Data management tools:
 - Many proprietary tools available for industry - don't recommend this because of IP issues, licensing
- Writing and revising tools: (ChatGPT)
 - Huge precautions - bias, good prompt writing, academic integrity

Filter Custom

Abstracts Comments

Select All

Gillespie 2016
↳ 26

Governance of and by platforms

Digital Sociology

Gillespie ... Foot 2013
↳ 0

Identifying the Interests of Digital Users as Audiences, Consumers, Workers, and Publics

Digital Sociology

Gillespie ... Mason 2016
↳ 0

Introduction to the Critical and Ethical Studies of Digital and Social Media Minitrack

Digital Sociology

Gray ... Suri 2019
↳ 176

Ghost Work: How to Stop Silicon Valley from Building a New Global Underclass

Digital Sociology

+ Add Papers

EXPLORE PAPERS

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- Earlier Work 10
- Later Work 118

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- Suggested Authors 314

EXPLORE OTHER CONTENT

- Linked Content 27

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COLLABORATORS **Edit**

These Authors

Filter Relevance Filter these items

Abstracts

Kate Crawford
Microsoft
100 publications 7806 citations

Tarleton Gillespie
Microsoft
65 publications 3323 citations

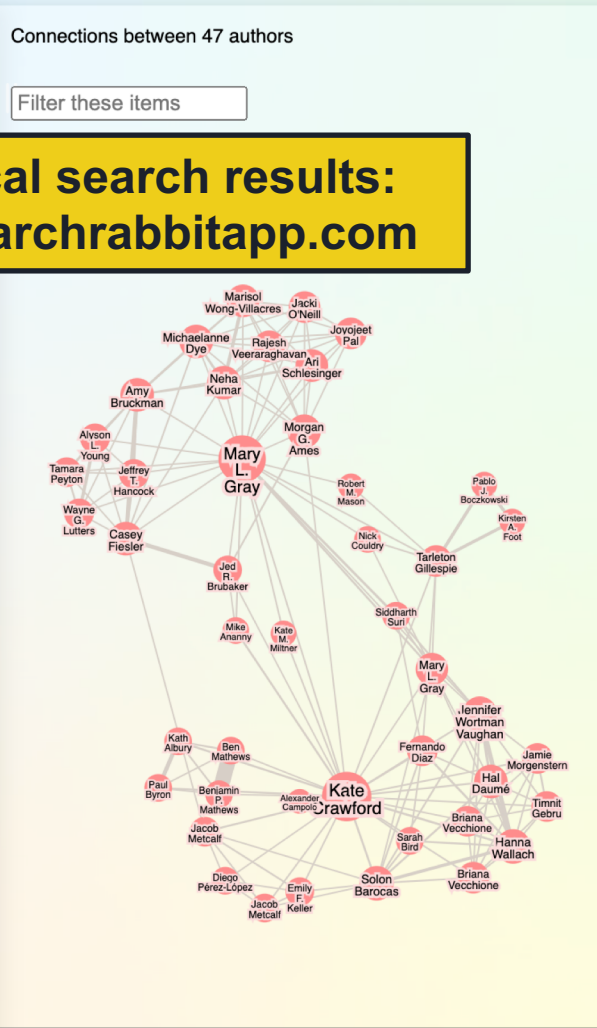
Mary L. Gray
Microsoft
36 publications 792 citations

Hanna Wallach
Microsoft
128 publications 7719 citations

Solon Barocas
Microsoft
64 publications 4193 citations

Sarah Bird
Facebook
25 publications 943 citations

**Geneological search results:
Try it! researchrabbitapp.com**



Elicit recommended

Lit review: Explore research questions

Enter a research question, and get back answers from papers

Brainstorm research questions

Brainstorm more specific and related versions of your question

Created by others

Get Independent (Manipulated) Variable and Dependent Variable from Hypothesis, Question, or Statement

For each Hypothesis, Question, or Statement, GPT-3 will find and list the Independent Variable and the Dependent Variable.

Convert "possible critique" citation into a question

Given a citation statement critiquing the methodology of a paper, generate a question that can be used to check other papers for the same limitation

Suggest search terms

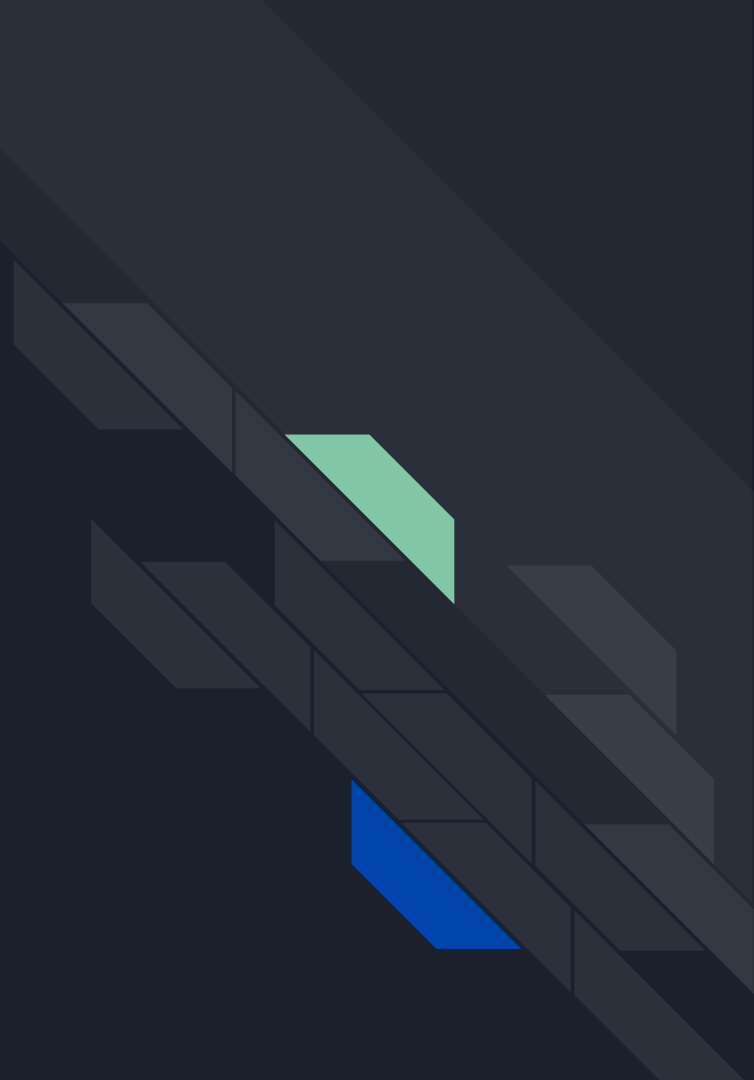
Given a word or phrase, suggest related search terms you might want to use to find papers

**Search aide:
Try it! elicit.org**

Paper title	Abstract summary	Number of participants	Intervention	Outcomes measured
<p>★ Effects of parent training on infant sleeping patterns, parents' stress, and perceived parental competence.</p> <p>🔍 A. Wolfson, P. Lacks, A. Futterman</p> <p>📖 <i>Journal of Consulting and Clinical Psychology</i> 📈</p> <p>1992 RCT 230 Citations DOI 🔗</p>	<p>Training group parents awakened and responded less often to infant signaling.</p>	60	behavioral strategies to promote healthy, self sufficient sleep patterns in infants	<ul style="list-style-type: none"> • Infant Sleeping Patterns • Parents' Stress • Perceived Parental Competence
<p>★ Behavioral Interventions for Infant Sleep Training: Effective and Not Harmful</p> <p>🔍 J. Cowden</p> <p>2016 RCT 0 Citations DOI 🔗</p>	<p>Graduated extinction and other behavioral interventions have been shown to improve sleep for infants with frequent nighttime waking.</p>	43	graduated extinction and bedtime fading	<ul style="list-style-type: none"> • Improvement In Infant Sleep • Infant And Parent Stress
<p>★ The Ethics of Early Life Care: The Harms of Sleep Training</p> <p>🔍 Darcia Narvaez</p> <p>📖 <i>Clinical Lactation</i> 📈</p> <p>2013 4 Citations DOI 🔗 PDF 🔗</p>	<p>Sleep training is supposed to put babies on a road toward healthy physical outcomes.</p>	-		<ul style="list-style-type: none"> • Health And Well Being • Self Regulatory Skills • Establishment Of Self Reliance • Good Sleep Patterns • Emotional Well Being
<p>★ The Effect of Continuous Stimulation on the Behavioral Sleep of Infants.</p> <p>🔍 K. Schmidt</p> <p>1975 RCT 13 Citations</p>	<p>Sleep does not constitute a period of generalized reduction of neuronal discharge in the brain.</p>	-	-	-
<p>★ Sleep and Infant Learning.</p> <p>🔍 A. Tarullo, P. Balsam, W. Fifer</p> <p>📖 <i>Infant and Child Development</i> 📈</p> <p>Citations DOI 🔗 PDF 🔗</p>	<p>Sleep facilitates neural maturation, thereby preparing infants to process and explore the environment in increasingly sophisticated ways.</p>	-	-	<ul style="list-style-type: none"> • Neural Maturation • Memory Consolidation • Processing Of Sensory Stimuli • Learning About Contingencies In The Environment

Search optimization: Try it! elicitor.org

DHS Undergraduate
Research Projects
2023-2024





FORTHCOMING WORKSHOPS

Nov 6th: 12-1pm - Writing research papers

Nov 15th: 2-3pm - Grad school applications

Nov 20th : 12-1pm - Mentoring

What topics are you interested in?