



Learning with Artificial Intelligence

Rootstech 2025

Mark D Thompson

Mark@MakingFamilyHistory.com

March 6, 2025

Speaker

Mark Thompson is a professional genealogist who specializes in digitizing and archiving family memorabilia, and genetic genealogy.

Prior to becoming a genealogist, Mark served in leadership roles in information technology. He worked in several industries to introduce technologies that improved the way those companies worked.

Mark leverages his combined expertise in genealogy and technology to help guide genealogists through the rapidly changing field of artificial intelligence.

Mark is the President of the Victoria Genealogical Society (VGS) in Victoria, BC and is the chair of their DNA Special Interest Group. He is also a member of the Association of Professional Genealogists. Mark has decades of teaching and public speaking experience.

Workshop Overview:

Mark will show you how to use artificial intelligence to learn genealogy faster and easier.

Mark will begin with a discussion of how to approach learning based upon how much you already know about the topic.

Then, he will help you understand what topics are best suited for learning with AI. Relevant genealogy examples will be used with the leading Large Language Model (LLM) tools, including ChatGPT, Gemini and Claude.

Please feel free to reach out to Mark@MakingFamilyHistory.com if you have any questions or comments about this workshop.

Table of Contents

Basics of Learning Genealogy with AI	3
Selecting Topics for AI-Based Learning.....	4
How to Learn with AI	5
Additional Learning Resources:	6
Other Rootstech 2025 Events.....	6
Please Stay in Touch.....	7
Example 1: Relationship Estimates.....	8
Example 2: Locality Research	11
Example 3: Learn Old English Hand Writing.....	13

Basics of Learning Genealogy with AI

As AI tools will occasionally provide false information, everything that an AI tells you must be verified. This verification is generally easier to do with topics that you are already familiar with.

The stages below are adapted from the popular Four Stages of Competence.¹ Use these stages to help decide how to approach learning with your AI. It will also help you decide how much additional effort you should put in to confirming what you learn from your AI at each stage.

Stage 1: You don't know what you don't know.

Learning about a new topic at this stage is risky without significant follow-up research using other sources, courses, or consultations with people who have experience in the topic. At this stage it is essential to confirm what an AI tells you to avoid being misled by false information or hallucinations.

Stage 2: You know what you don't know.

At this stage, you're aware of the gaps in your knowledge and can ask specific questions to fill them. Using AI in this stage can help direct your learning efforts by targeting your research to fill known gaps. Consider asking your AI to quiz you on general knowledge in your topic to help improve your understanding. However, it's still important to verify the information AI provides with trusted sources.

Stage 3: You know what you know.

With a solid understanding of a topic, you can judge the accuracy of the information you receive yourself. Your AI can serve as a study partner to deepen your knowledge and simulate discussions to expand your understanding. You can ask your AI to quiz you on challenging points in your topic to help you improve. The reliability of AI as a learning tool increases because you can verify many claims yourself. Regardless, always verify specific facts before relying on them in your research.

Stage 4: You just know.

At this stage, you are an expert in the topic. You are well-equipped to assess the accuracy and relevance of what an AI tells you. Your AI can become a learning collaborator or even a debating partner. It can help you brainstorm new approaches to a problem. Remember that LLMs take a long time to train, so they can be a bit behind on the latest information in a topic. So, it is wise to stay up to date on the latest news, publications and discussions in your topic. Use traditional search and research techniques, or AI-Enhanced search tools like Perplexity or SearchGPT to research current information.

¹ De Phillips, Frank Anthony, et al. "Meaning of Learning and Knowledge." *Management of Training Programs*, Richard D. Irwin, 1960, p. 69.

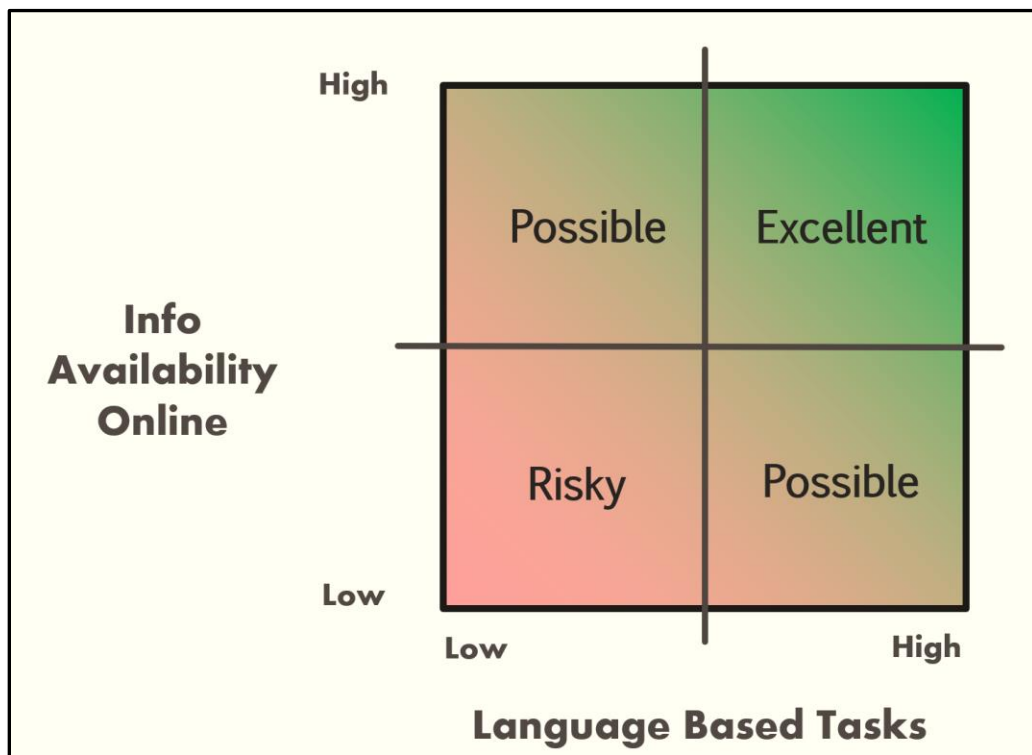
Selecting Topics for AI-Based Learning

The leading LLM models have been trained primarily using information found on the public internet. Because of this, they are particularly good at helping you learn things that are commonly found on the public internet. They are also very good at putting words together in ways that they have seen frequently on the public internet.

As a result, LLMs are excellent at performing language-based tasks. For example: organizing words in a particular way, summarizing provided text, or translating from one language to another.

However, these LLMs are less effective at non-language-based tasks, such as spatial reasoning. It is also difficult for them to find factual information on obscure topics, particularly when there is limited information available about them online. For example: how many people are on a page of a census record, or who is my paternal grandmother?

When deciding whether to use AI to learn more about a particular topic, consider whether it is a language-based task and whether there are reliable internet resources available on that topic. Other types of tasks are possible, but they will take more effort or expertise to get good results. Whether the additional time and effort is worth doing with an LLM is up to you to decide.



How to Learn with AI

Focus on learning how to find the answer, not just on the answer itself

This will help you develop a deeper understanding that you can apply in future genealogy projects.

Assign a role to the AI (the teacher)

Put the AI in a role that is most likely to help you. For example:

- You are an expert genealogist
- You are an expert in genetic genealogy
- You are a professional archivist
- You excel at creating properly formatted citations in the MLA format

Describe yourself (the student)

Make sure that the AI understands your experience level with the topic so that it can explain things to you in a way most likely to be helpful. For example:

- I am completely new to genetic genealogy, so please provide your answer in terms I can understand
- I have intermediate level skills in Excel, so please answer accordingly

Break the question/task into small parts

The accuracy of information you get from your AI will improve by asking simple questions. This is useful in genealogy, where descriptions of problems can include lots of background information.

Be specific

Choose your words carefully as clearer questions will result in clearer answers.

Chat with your chatbot

Don't be afraid to follow up on a response provided by the AI. For example:

- I didn't understand what you said. Please restate and simplify what you said.
- Thank you. That was very helpful. Please expand on point number three for me.

Format responses so they are easy to use

Ask for information to be formatted in a way that is useful to how you are going to use it. For example:

- Format the information in a table with the following column headings...
- Provide your results in a bulleted list
- Write your responses in properly formatted sentences

Verify claims given by the AI

AI will give you false information from time to time. So, always verify claims provided by AI by confirming it against a reliable, defensible source. If your task requires a citation, cite a reliable source, not the AI itself.

AI-Enhanced Search

- All chatbots can look for information found within their training data.
- Training data is rarely refreshed. This information can be 1 to 2 years out of date.
- In addition to generating information found in their training data, ChatGPT, Gemini and Perplexity can search the public internet for current information.
- AI-enhanced search tools provide links to the websites that were used to generate a response

Additional Learning Resources:

[The Family History AI Show](#) podcast, Mark Thompson and Steve Little

[Genealogy and Artificial Intelligence](#) Facebook Group

[Making Family History Blog](#), Mark Thompson

[AI Genealogy Insights Blog](#), Steve Little

Other Rootstech 2025 Events

[Research Documents and Letters With Artificial Intelligence](#), Mar 8, 2025 @ 3 PM MST

[Guidelines for the Responsible Use of Artificial Intelligence \(AI\) in Genealogy](#), Mar 7, 2025 @ 4:30 PM MST

Please Stay in Touch



Mark can be reached at Mark@MakingFamilyHistory.com

Signup for his newsletter at <https://makingfamilyhistory.com>

Reach out:

- to collaborate on projects, or
- to have Mark present at your event.

Example 1: Relationship Estimates

Tool: Gemini Advanced

Prompt:

Please assume the role of a genetic genealogy expert.

Assume that I am a beginner genetic genealogist.

I have completed a DNA test and I have found a DNA match with whom I share 100 centimorgans of autosomal DNA.

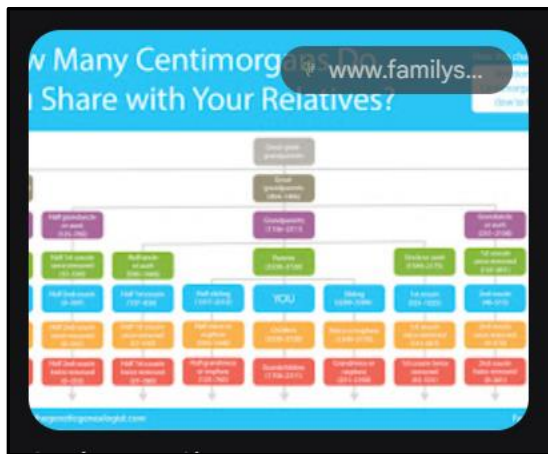
Please describe three different ways for me to estimate the relationship that I share with my match.

Response:

Absolutely! Here are three approaches you can use to estimate the relationship with your 100 cM DNA match:

1. Centimorgan Charts and Calculators:

Centimorgan Charts: These charts provide a range of possible relationships based on the amount of shared DNA. For 100 cM, you might see possibilities like first cousin once removed, half first cousin, great-grandparent, or great-aunt/uncle.



<https://www.familysearch.org/en/blog/centimorgan-chart-understanding-dna>

Shared cM Project Tools: The Shared cM Project is a collaborative effort that has compiled vast amounts of data on DNA matches and their relationships. Their tools allow you to input the shared cM and get a more refined probability for each potential relationship.



<https://familylocket.com/the-shared-cm-project-tool-on-dna-painter/>

2. Analyzing Shared Matches:

Examine your list of DNA matches and see if you and your 100 cM match share any other relatives in common. The closer the relationship to the shared matches, the closer your relationship is likely to be with the 100 cM match. For example, if you share a parent with a shared match, your 100 cM match may be a first cousin.

3. Triangulation:

This method involves identifying shared DNA segments between you, your 100 cM match, and at least one other relative. If you all share a segment inherited from a common ancestor, it can help narrow down the possible relationships.

Important Considerations:

Multiple Possibilities: It's crucial to remember that a single centimorgan value can correspond to several possible relationships. 100 cM is in a range where multiple relationships are equally likely.

DNA Inheritance is Random: While charts and averages are helpful, DNA inheritance is a random process. Siblings won't inherit identical amounts of DNA from their parents, so there can be variation even within close families.

Combine Evidence: Don't rely solely on centimorgans. Utilize genealogical research, shared matches, and triangulation to create a clearer picture of your connection.

Let me know if you'd like more details on any of these methods!


Follow Up Prompt:

I'm having difficulty deciding which one is the right one for my problem. Can you please create a three column table that lists the pros and cons of each. The first column lists the approach. The second contains the pros and the third contains the cons.

Response:

Absolutely! Here's a table outlining the pros and cons of each approach to help you decide which one is best for your situation:

Approach	Pros	Cons
Centimorgan Charts/Calculators	Easy to use, provides a quick initial estimate, accessible to beginners	Can be overwhelming due to multiple possibilities, doesn't account for inheritance variation
Analyzing Shared Matches	Provides concrete genealogical evidence, helps visualize family connections, narrows possibilities	Requires access to family trees of matches, may not be helpful if shared matches are distant
Triangulation	Most precise method, confirms shared ancestry, helps map specific DNA segments	Requires multiple relatives to have tested, can be complex and time-consuming

 Export to Sheets

Recommendations:

Start Simple: Begin with centimorgan charts and calculators for a quick estimate.

Incorporate Shared Matches: If you have access to family trees of your matches, analyzing shared matches can offer valuable clues.

Consider Triangulation: If you have multiple relatives who have tested and you're comfortable with a more involved process, triangulation can provide the most definitive answer.

Let me know if you have any other questions!

Example 2: Locality Research

Tool: ChatGPT4

Prompt:

You are an expert genealogist and researcher.

Your speciality is creating locality guides with the Canadian Province of Ontario. A locality guide is a regional research guide for a particular county.

I am an experienced genealogist. I need to learn more about a particular county for a research project.

Your task is to identify research resources for Hastings County, Ontario. You're tasked with listing both the top online digital collections and physical repositories available.

Present the information as a concise list of sources, organized as a series of topics with sub bullets. The topics should be the category of research information. The bullets within each category should list the research source or recommendation.

Wherever possible, please present the name of the source as a hyperlink so that it is easy for me to investigate it myself.

Response:

Creating a locality guide for Hastings County, Ontario, involves compiling a list of key resources that genealogists like you can use to access historical records and other relevant information. Below, I've organized the resources into categories to make your research more streamlined and effective.

Online Digital Collections

Census Records and Voter Lists

Library and Archives Canada - Offers federal census data for Hastings County which can be particularly useful for tracing changes in family composition.

Ancestry.ca - Provides access to various census records; subscription required.

Vital Records (Births, Marriages, Deaths)

Ontario Ancestors - The Ontario Genealogical Society provides databases for births, marriages, and deaths.

FamilySearch - Free access to a broad collection of vital records.

Land Records and Maps

Ontario Land Registry Access - Offers digital access to property records, which can be searched by location.

Old Maps Online - A portal to historical maps in public archives.

Military Records

Canadian Great War Project - Provides records and personal stories from World War I, including those from Hastings County.

Library and Archives Canada – Military Heritage - Archives for military records which include service files, war diaries, and more.

Physical Repositories

Local Libraries

Hastings County Public Library - Holds local newspapers, microfilms, and historical books about Hastings County and its communities.

Belleville Public Library - A source for regional archives, including genealogical collections, family histories, and local records.

Archives

Community Archives of Belleville and Hastings County - Specializes in the preservation of local historical documents including photographs, newspapers, and personal archives.

Archives of Ontario - While based in Toronto, it holds extensive collections relevant to Hastings County, including government documents and land records.

Museums and Historical Societies

Hastings County Museum of Agricultural Heritage - Provides insights into the rural and agricultural history of the region.

Stirling-Rawdon Historical Society - Focuses on preserving the history of Stirling-Rawdon area within Hastings County and often has archival materials useful for genealogical research.

These resources should provide a solid foundation for your research into Hastings County, Ontario. Each link leads to more detailed information that can help you navigate the specific collections or contact the institution directly for further inquiries.

Example 3: Learn Old English Hand Writing

Tool: Perplexity Pro with Claude Opus

Prompt:

You are an expert in reading old English from ancient texts. I know nothing about this field of study.

Please show me how to build basic skills in reading old english writing found in ancient texts.

Provide me with a three step learning plan where each new step builds on what was learned in the previous step.

Provide the learning plan in a table.

The first column lists the name of step. The second column lists the learning activities to perform. The third column lists the skills I will acquire in that step.

Response:

Learning to read Old English, especially from ancient texts, can be quite fascinating and enriching. Here's a three-step learning plan organized in a table format, designed to progressively build your skills:

Step Name	Learning Activities	Skills Acquired
1. Introduction to Old English	- Study the basic Old English alphabet and pronunciation. - Begin with an introductory textbook or online course on Old English, such as "An Introduction to Old English" by Peter S. Baker. - Practice reading simple Old English texts, which might include glossed texts where modern English translations are provided alongside.	- Basic understanding of Old English grammar and vocabulary. - Ability to pronounce Old English words. - Initial exposure to sentence structure.
2. Intermediate Textual Analysis	- Engage with more complex texts, such as poetry or excerpts from longer works like "Beowulf" or "The Anglo-Saxon Chronicle". - Use resources like the Old English Aerobics website for interactive exercises. - Start translating simple sentences or passages from Old English to modern English.	- Enhanced vocabulary. - Improved understanding of complex sentence structures. - Ability to identify and understand stylistic and poetic elements of Old English.

Step Name	Learning Activities	Skills Acquired
3. Advanced Studies and Practice	<ul style="list-style-type: none"> - Read extensively across a range of Old English literature. - Participate in workshops or classes that focus on advanced linguistic features of Old English. - Begin to write your own simple passages in Old English, focusing on using correct grammar and vocabulary. 	<ul style="list-style-type: none"> - Deep comprehension of Old English literary styles and themes. - Ability to translate and interpret advanced texts. - Skills in composing texts using Old English.

Each step builds on the knowledge and skills acquired in the previous one, gradually leading you from basic understanding to a more comprehensive mastery of Old English. This structured approach should facilitate a solid grounding in reading and interpreting ancient texts.