

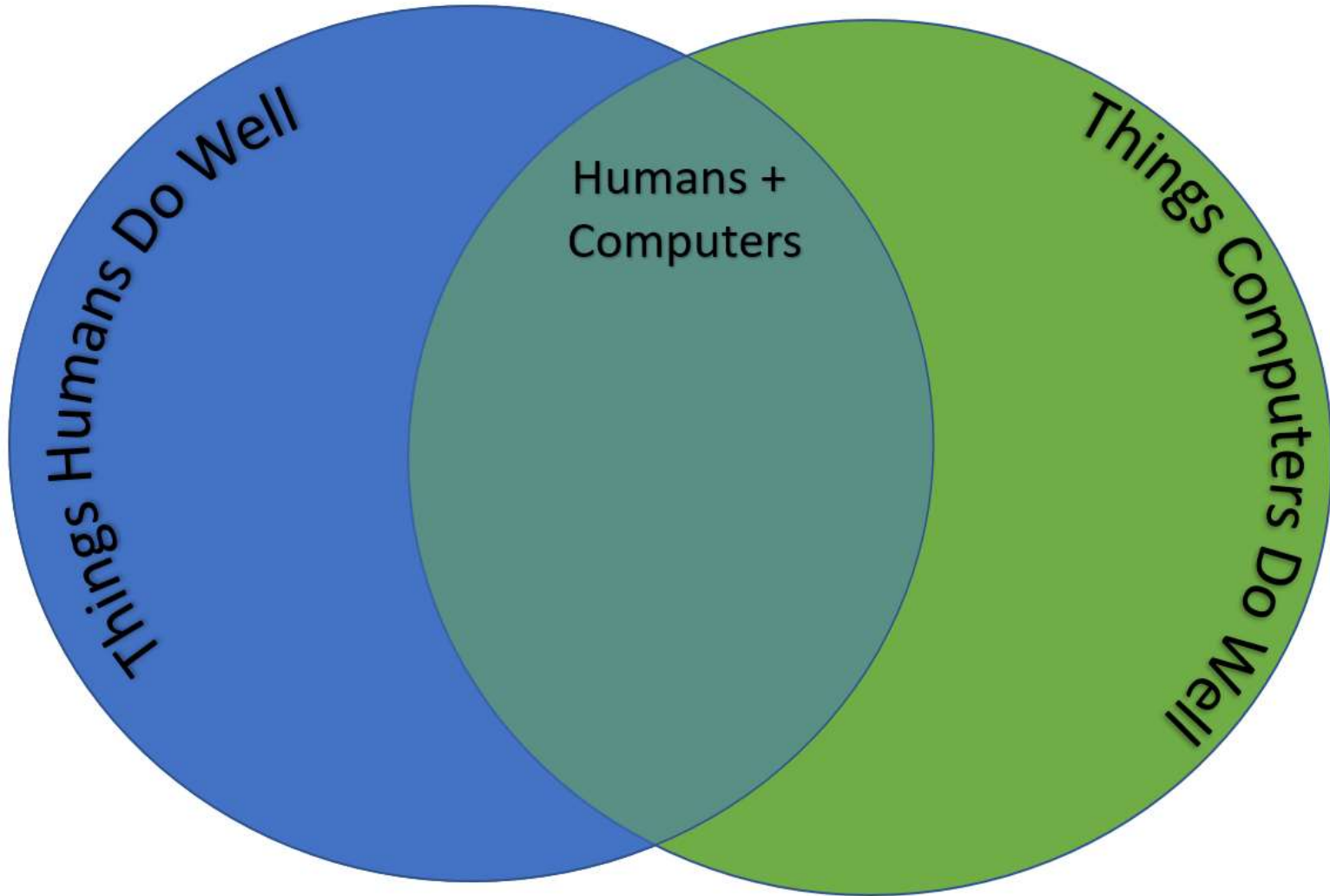


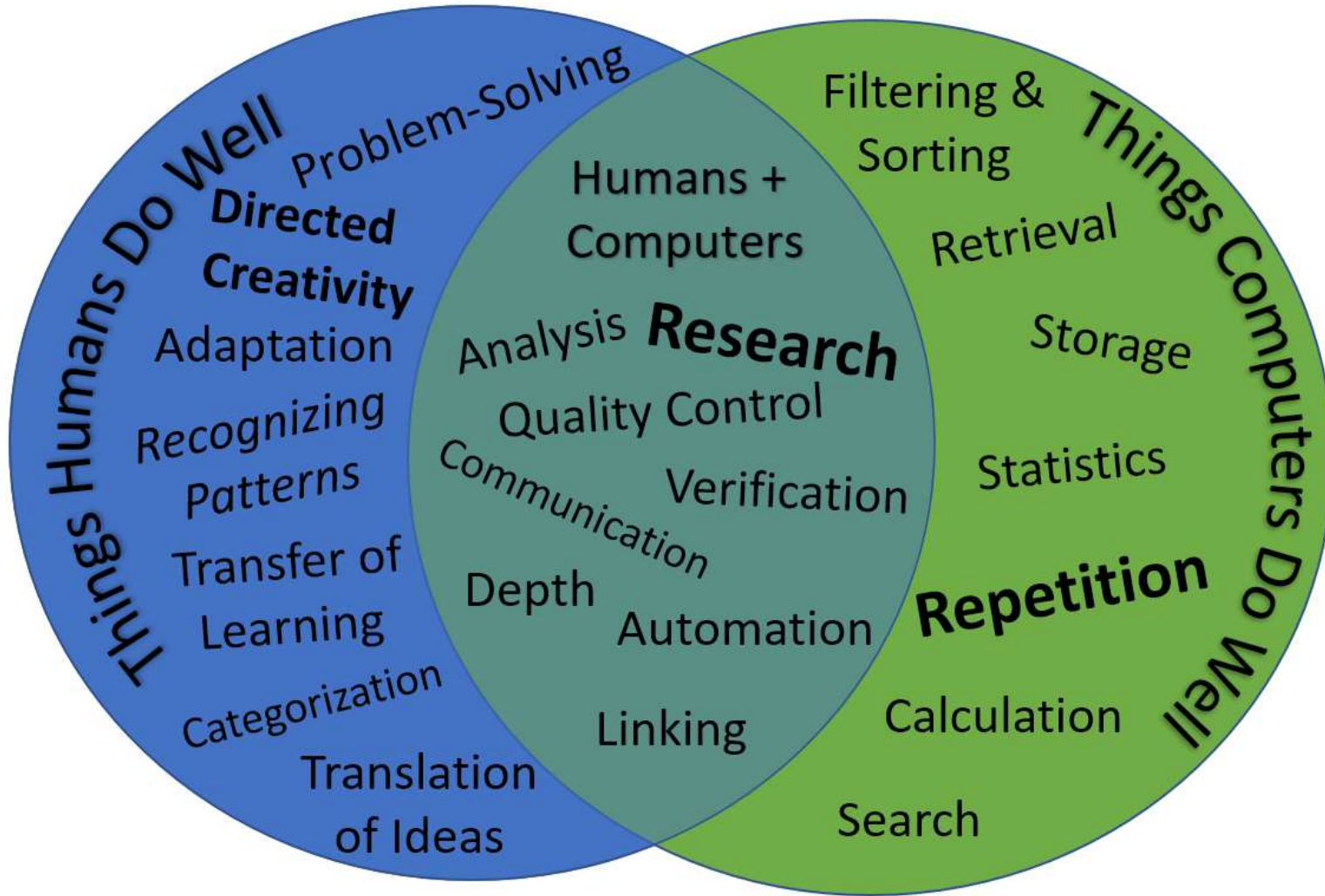
# AI and LangTech

Matthew Lee

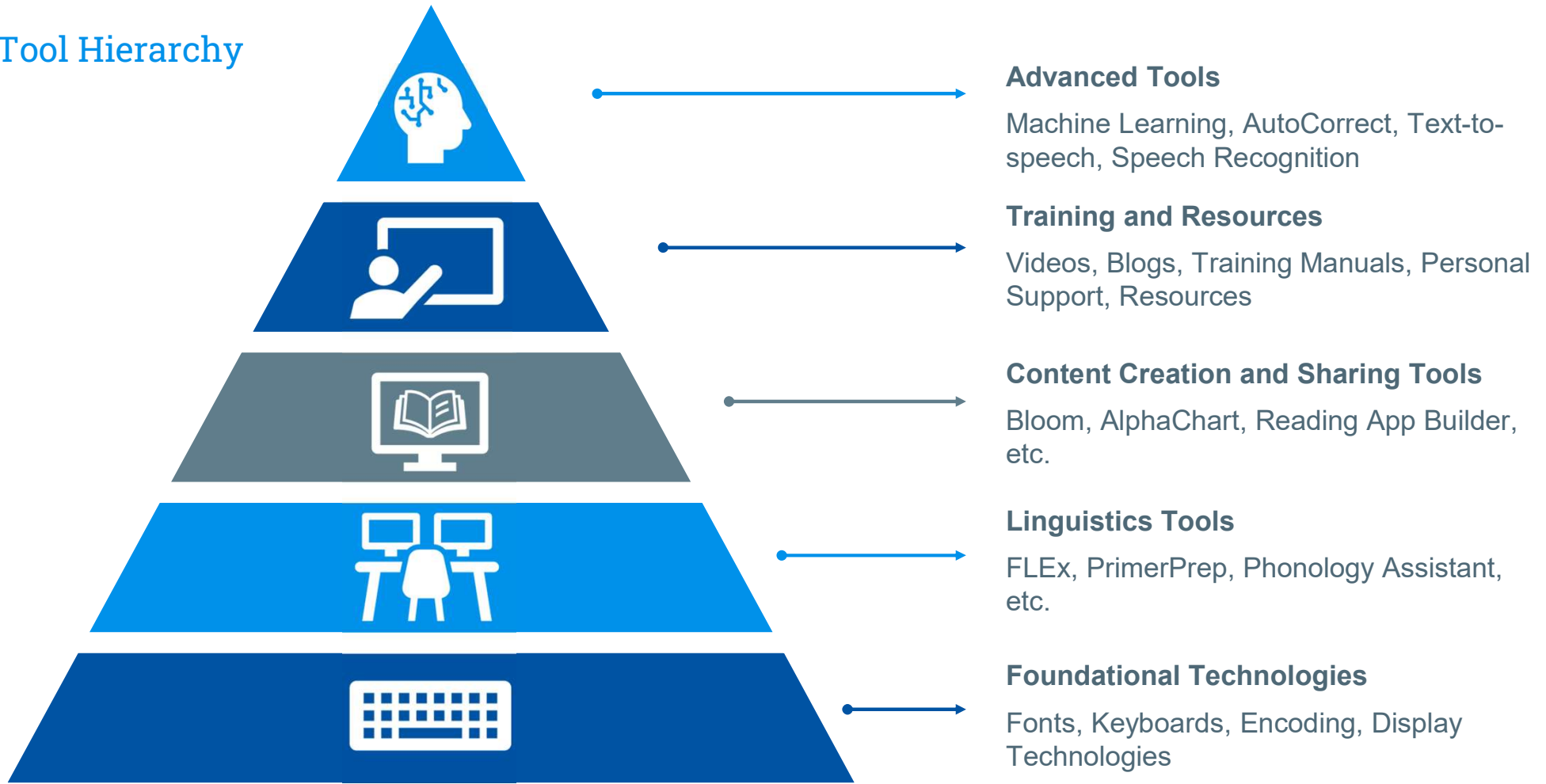


# What can LangTech do for you?





## Tool Hierarchy





# What can Artificial intelligence or Machine Learning do for you?

# Natural Language Processing

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- Automated Parsing
- Natural Searches
- Statistics
- Text-to-speech
- Speech Recognition
- Machine Translation

# ChatGPT

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- Generates responses that are plausible, but not necessarily true.
- Dangerous for academic research.



# How will AI impact minority linguistics in the next 10 years?



The impact of AI on minority linguistics in the next 10 years will depend on several factors such as the development of AI technologies, the availability of data in minority languages, and the efforts of linguists and communities to preserve and promote their languages. Here are some potential ways AI could impact minority linguistics:

1. Preservation of endangered languages: AI could play a significant role in preserving endangered languages by creating tools that can help digitize, document and translate texts in these languages. For example, AI-powered speech recognition and machine translation systems could help to bridge the language gap and make resources available in minority languages.
2. Increased access to minority languages: AI could also help to increase access to minority languages by creating tools that can teach and promote these languages. For example, chatbots and language learning apps powered by AI could provide an immersive learning experience for learners of minority languages.

# How will AI impact minority linguistics in the next 10 years?

## 3. Recognition of dialects and regional variations: AI can help in recognizing dialects and regional variations of a language, which can be a crucial factor in preserving linguistic diversity. This could involve developing speech recognition models that can recognize different dialects and regional accents, or building machine translation systems that can handle the nuances of different varieties of a language.

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4. Challenges related to data availability: However, the availability of data in minority languages can be a significant challenge in the development of AI systems for these languages. It is crucial to collect and curate data in minority languages to train AI models effectively. Efforts to collect and preserve data in minority languages must be encouraged and supported.

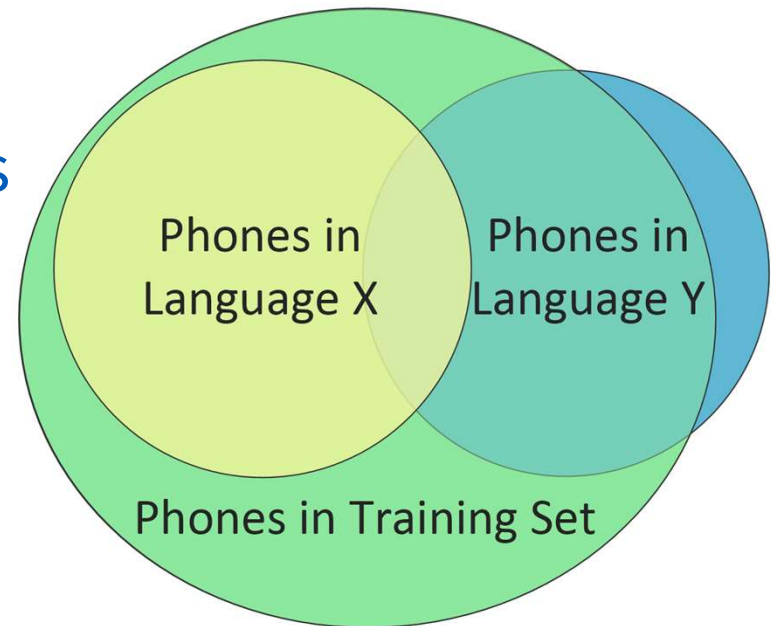
Overall, AI has the potential to impact minority linguistics positively, but its success will depend on the efforts of linguists, communities, and technology developers to work together towards preserving and promoting linguistic diversity.

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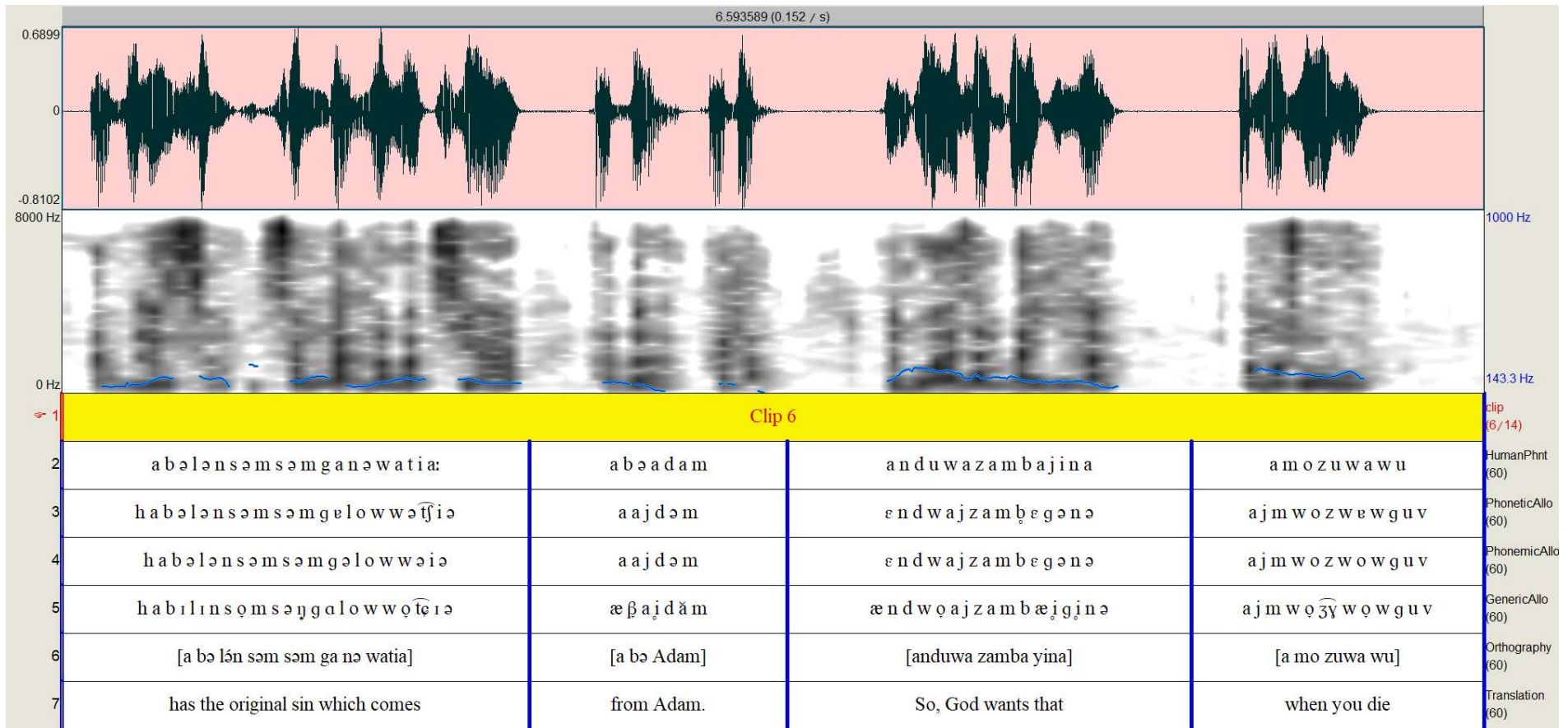
# Allosaurus

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- Creatively uses the intersection of low-resource languages and high-resource languages.
- English, French, Spanish, Arabic, and other high-resource languages cover “most” of the phonetic inventory of many languages.
- If data is not available, can we use other languages to boost transcription?



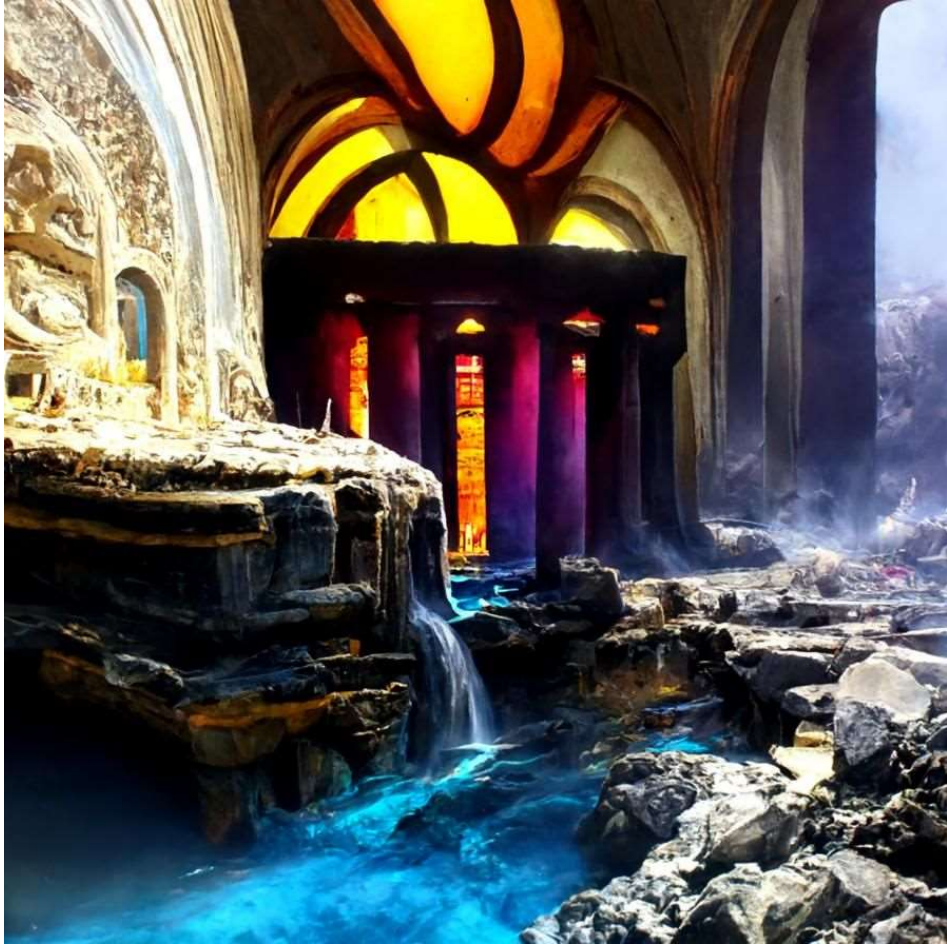
# Allosaurus



# Image Modification or Generation

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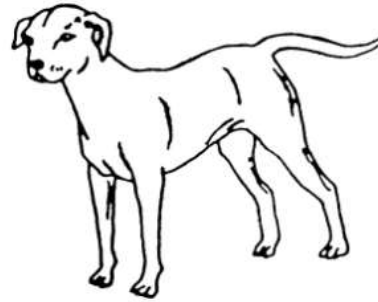
- Dall-E
- Midjourney
- Stable Diffusion



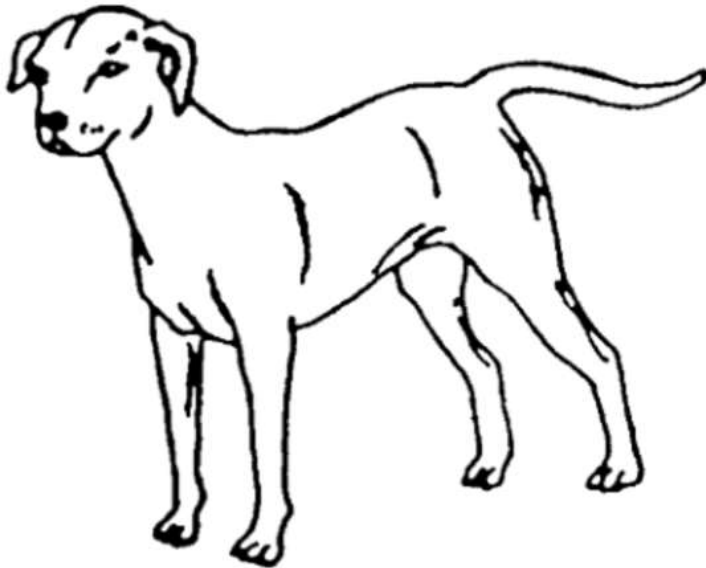
## Examples

Examples generated from <https://replicate.com/jagilley/controlnet-scribble>

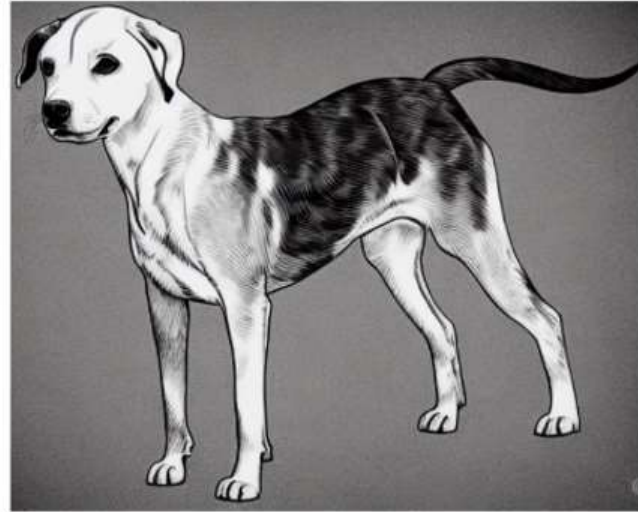
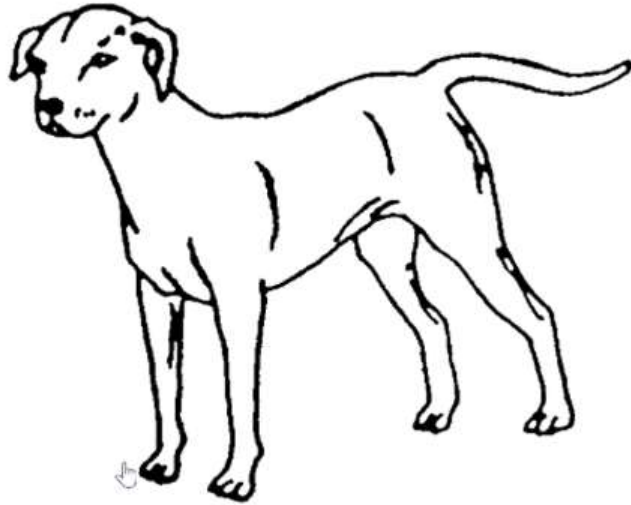
Input file:



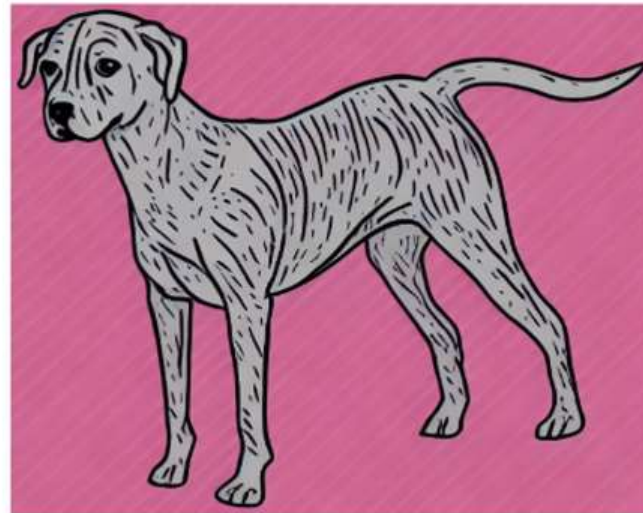
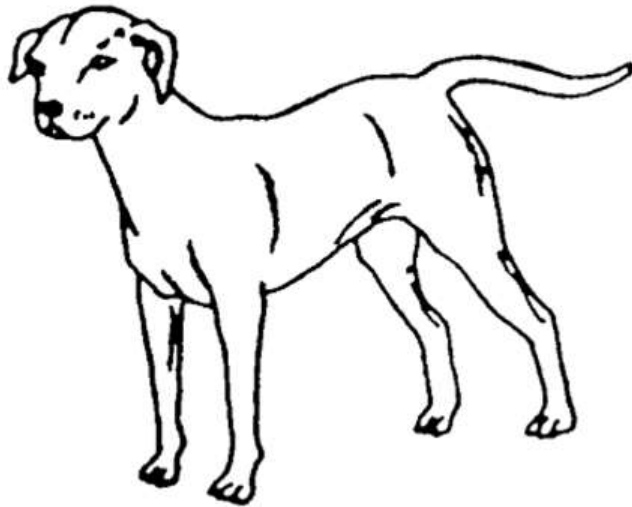
prompt: dog, pink background



prompt: simple line art, dog



prompt: sharpie, dog, flat pink background





<https://arstechnica.com/information-technology/2023/02/us-copyright-office-withdraws-copyright-for-ai-generated-comic-artwork/>

ADVENTURES IN 21ST CENTURY COPYRIGHT —

## AI-generated comic artwork loses US Copyright protection

Zarya images "not protected by copyright." Words and arrangement remain protected.

BENJ EDWARDS - 2/23/2023, 7:19 PM



Enlarge / The cover of "Zarya of the Dawn," a comic book created using Midjourney AI image synthesis in 2022.

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On Tuesday, the US Copyright Office **declared** that images created using the AI-powered **Midjourney** image generator for the comic book *Zarya of the Dawn* should not have been granted copyright protection, and the images' copyright protection will be revoked.