

AI Session Summary: Experiments, Concepts, and Tools

The session focused on further experiments in AI, covering key concepts, demonstrating various AI tools, and discussing the **workflow** of interacting with these models.

AI Image Generation and Iterative Development

The speaker demonstrated the use of AI tools for image creation, emphasizing the concept of **iterative development**—the ability of an AI to maintain the context of a previous image and modify it based on new prompts¹¹¹¹¹¹¹¹¹¹¹¹¹¹¹¹.

- **Architectural Drawings:** A prompt was used to generate an isometric view of a historical facade, incorporating specific stylistic and design elements, highlighting the AI's ability to produce complex technical drawings²²²².
- **Mathematical Formula Visualization:** When prompted to generate a photorealistic representation of a math formula, different AIs produced varying results. Meta AI, for instance, produced an image of a woman, while Gemini (Google) created a graphic representation, showing the diversity in AI interpretation³³³³.
- **Personal Photo Restoration & Animation:** A multi-step **workflow** was demonstrated to restore and then animate an old photograph of the speaker's mother using Google AI (Gemini)⁴⁴⁴⁴⁴⁴⁴⁴⁴⁴.
 - The process involved uploading the scanned image, asking the AI to fill in flaws, remove dust, and finally generate a smiling video.
 - An interesting artifact was noted where the AI interpreted flaws in the old photo as **freckles** and incorporated them into the generated video⁵⁵⁵⁵.

AI as a Tool for Synthesis and Analysis

The session showed that AIs can process and analyze large documents, a process that relies on token analysis rather than just reading the entire document traditionally⁶.

- **Document Summarization:** The AI, Claude, was used to create a 10-bullet-point summary of a 409-page document on pediatric gender dysphoria treatment, showcasing its capacity for large-scale document synthesis⁷⁷⁷⁷⁷⁷⁷⁷.
- **Reading Schematics:** The AIs Grok (from XAI/Elon Musk) and Meta AI were shown to be able to read and generate images from uploaded schematic drawings of a proposed park⁸⁸⁸⁸⁸⁸⁸⁸⁸⁸⁸⁸⁸⁸⁸⁸⁸⁸⁸⁸⁸⁸⁸⁸⁸⁸⁸⁸⁸⁸⁸⁸.
- **Notebook LM:** This Google tool was introduced as a valuable feature for users with large volumes of documents. It allows users to upload files into a "notebook," query the entire document set, and have the AI provide answers with citations back to the source documents⁹⁹⁹⁹.

The speaker reviewed several fundamental AI terms from previous sessions, including:

- **Tensors:** Described as **three-dimensional data structures** or multi-dimensional arrays, used by modern AIs, superseding the matrix algebra used by Google's original PageRank algorithm¹⁰¹⁰¹⁰¹⁰.
- **Large Language Modules (LLMs) and Small Language Models (SLMs):** LLMs are used day-in, day-out, while SLMs are being developed for use on smartphones¹¹¹¹¹¹¹¹.
- **Tokens:** The mathematical representation of language or word segments that AIs analyze¹²¹²¹²¹².
- **Retrieval Augmented Generation (RAG):** The process of an AI going out to retrieve information¹³.
- **Reinforcement Learning from Human Feedback (RLHF):** The training process where human feedback is used to refine AI output; an example given was Venezuelans paid to train visual AIs for Tesla's automatic driving¹⁴.
- **Cognitive Load/Overload:** The idea of receiving too much information and overwhelming cognitive functions¹⁵.
- **Enthusiastic Affirmation:** The training technique to encourage users and validate their

mindset, which the speaker suggested can feed into issues like self-harm if the user is already oriented that way¹⁶¹⁶¹⁶¹⁶¹⁶¹⁶¹⁶¹⁶.

AI Tools and User Experience

The presentation also touched on the interface and usage of various tools:

- [illegible]

The discussion also included a brief technical tutorial on how to use Zoom's built-in **avatar** feature²¹²¹²¹²¹²¹²¹²¹²¹²¹.