Lab 1

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Part 1

Healthcare: Insilico Medicine implemented Gen AI to expedite drug discovery. The AI platform designs new drug candidates, predicts the interaction with the target, simulates and forecasts trial outcomes, and streamlines the preclinical phase.

Entertainment: Netflix, in collaboration with Japanese studios WIT Studio and Rinna Inc., made a short film which implemented AI to assist in generating background art. This use of AI is creating controversy in the industry, while Netflix is claiming a labour shortage.

E-Commerce: Amazon is using Gen AI to assist sellers in creating product titles, descriptions, and bullet points to create more engaging product listings.

Education: Khan Academy developed an AI Tool named 'Khanmigo,' an AI-powered tutor that uses ChatGPT 4 under the hood with tailored safeguards and tools developed by Khan Academy, which personalizes learning experiences and guides students without directly giving the answers.

Part 2

Case 4: AI-generated music for video game soundtracks.

What problem is Generative AI solving in this case?
Producing high-quality music for games can be time-consuming and expensive, which can be a big problem for indie developers who may not have the time or experience in creating game soundtracks or have access to professional composers. Generative AI can solve this by making it faster and more affordable to create an original soundtrack tailored for different moods, scenes, or player actions. Personally, in Gamejams (many of which ban Gen AI uses), I had to search for free-to-use music on specialized websites or YouTube, which in itself can be time-consuming to find something that is free while fitting the moment.

How does Generative AI work in this context?
Now, there are tools like AIVA, Beatoven, and MusicLM that are trained on large amounts of music datasets. These models learn patterns in melody, rhythm, and harmony, allowing them to generate music based on the user's inputs on genre, mood, and length.

What are the benefits of using AI here?
The benefits are:
1. Cutting down on costs and turnaround time
2. Makes soundtrack creation more accessible to solo and small-team indie devs
3. Helps with prototyping by generating temporary music instantly
4. Quick iteration to match changing creative directions

What challenges or ethical considerations might arise?
1. Potential job displacement for musicians
2. Risk of copying or mimicking copyrighted music from the training data
3. Less emotional depth or thematic nuance compared to human composers

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