Like it or not, Generative (Gen) AI is being used quite extensively, impacting our lives in many visible and invisible good and not so good ways. Gen AI is based on deep learning using the current dataset for training. Unfortunately, lots of the input data has built-in bias either due to the nature of data collection or due to how the dataset is processed and labeled. A common example I often use in my Data Science classroom (MSDS program in City College of NY) is - “What is a professional hairstyle”? Lots of hairstyles that were considered unprofessional in yester years are now considered highly acceptable in professional meetings and offices. Perceptions in the world has changed in recent years. However, that does not necessarily reflect in the existing search results. A Google image search today for “unprofessional hair” the top result set shows hair styles sported by women of “Colored” ethnicities. Search for “professional hair” results in images of individuals of mainly “White” ethnicities. This raises obvious ethical concerns. Note that the outcome of similar Google search used to be even more biased in the past. Unfortunately, even today, bias persists.

There are many documents available to list the ethical and societal concerns of AI. Since I teach ethical concerns in data science to my graduate students in CCNY, I decided to compile a list of ethical concerns of AI. However, given that AI is extraordinarily rich in data content, what is better than asking an AI engine itself to list out the ethical concerns of AI. After all, common AI chatbots or similar engines have access to practically everything that I can possibly find by manual Google, other internet search or search of published literature and books. With that in mind I used following five AI search models originating from Meta, Google, Chat GPT and IBM as follows.

1. Meta-llama/llama-3-2-1b-instruct – produced an exhaustive list minus a few items.
2. IBM/granite-3-2-instruct – produced an exhaustive list minus a few items.
3. gpt-3.5-turbo – produced merely an insignificantly brief summary.
4. Google/flan-ul2– produced merely an insignificantly brief summary.
5. Meta-llama/llama-3-405b-instruct – produced an exhaustive list minus a few items.

All these AI models were asked the exact same question – “what are the ethical concerns about using Generative AI?.” I collected the output and summarized. For summarization, I used yet another Gen AI engine- Microsoft Copilot. The Copilot output was then manually edited for missing items and is listed below. The bullet points are in no specific order.

1. **Job displacement**: Generative AI could automate many jobs, potentially leading to significant unemployment and social unrest. This impact is expected to be uneven and will exacerbate the rich-poor divide.
2. **Bias, fairness and discrimination**: Generative AI systems can perpetuate and amplify existing biases present in the data used to train them, leading to unfair outcomes, and further enhancing discrimination against certain groups of people.
3. **Deepfakes and misinformation**: Generative AI can be used to create realistic but fake content, such as videos, images, and audio recordings, which can be used to spread misinformation and propaganda.
4. **Misuse and malicious use**: Generative AI can be used for malicious purposes, such as creating fake identities, phishing attacks, or generating malware. Regular software can do much of the same, except that AI make these highly realistic making identification of fakes extremely difficult.
5. **Privacy concerns**: Generative AI can be used to generate realistic synthetic data that can be used to identify individuals or compromise their privacy.
6. **Intellectual property and copyright**: Generative AI can create new content that is similar to existing works, raising questions about ownership and copyright.
7. **Lack of transparency**: Generative AI models can be opaque, making it difficult to understand how they arrive at their decisions, which can lead to mistrust and lack of accountability.
8. **Autonomous decision-making**: Generative AI systems can make decisions without human oversight, which raises concerns about accountability and the potential for harm.
9. **Data quality and impact on outcome**: Generative AI requires large amounts of high-quality data to train and fine-tune, which can be difficult to obtain, especially for certain types of data. Alternatively, bad actors/entities can deliberately train their AI systems with biased, limited dataset to create misleading outcome to align with their intended political or other propagandas.
10. **Security risks**: Generative AI systems can be vulnerable to cyber-attacks, which could lead to data breaches and other security risks including the GenAI system being trained with malicious contents.
11. **Value alignment**: Generative AI systems may not share human values, which could lead to unintended consequences if they are used in applications that prioritize efficiency or profit over human well-being.
12. **Lack of human oversight and review**: Generative AI systems may not be able to review and correct their own decisions, which can lead to errors and harm. Creation of fictitious data by Gen AI has already been recently reported in a high profile law suit.
13. **Dependence on data quality**: Generative AI systems are only as good as the data they are trained on, which can lead to biased or inaccurate results if the data is poor.
14. **Unintended consequences**: Generative AI systems may have unintended consequences, such as creating new social problems or exacerbating existing ones.