Cathy O’Neil’s “Weapons of Math Destruction” Talk

- Cathy O’Neil talked about the dangers of biased and unregulated algorithms in decision-making.
- She explains how big data models, often perceived as objective, can reinforce systemic inequalities in areas like hiring, education, and criminal justice.
- These models, which she calls Weapons of Math Destruction (WMDs), share three key traits: opacity (lack of transparency), scale (widespread impact), and damage (negative consequences for marginalized groups).
- O’Neil warns that these flawed algorithms often amplify biases, disproportionately affecting low-income and minority communities while lacking accountability.
- She advocates for greater transparency, regulation, and ethical oversight in algorithmic decision-making to prevent unfair and harmful outcomes.

Understanding AI

AGI (Artificial General Intelligence)

AGI refers to an advanced form of AI that possesses human-like cognitive abilities, allowing it to understand, learn, and apply knowledge across different tasks without being explicitly trained for each one. AGI can perform reasoning, problem-solving, and creative thinking similar to humans. AGI remains theoretical and has not yet been achieved.

Foundation Model

A Foundation Model is a large-scale AI model pre-trained on massive datasets to learn general representations, which can then be fine-tuned for specific applications. Examples include GPT (for language tasks) and DALL·E (for image generation). These models serve as a foundation for multiple downstream AI applications, reducing the need for training from scratch.

RAG (Retrieval-Augmented Generation)

RAG is an AI approach that combines generative AI with information retrieval to enhance accuracy and relevance. Instead of relying solely on pre-trained knowledge, RAG retrieves relevant data from external sources before generating responses. This technique is used in chatbots, search engines, and knowledge-based AI systems to provide more up-to-date and contextually relevant answers.