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Generative AI and ChatGPT

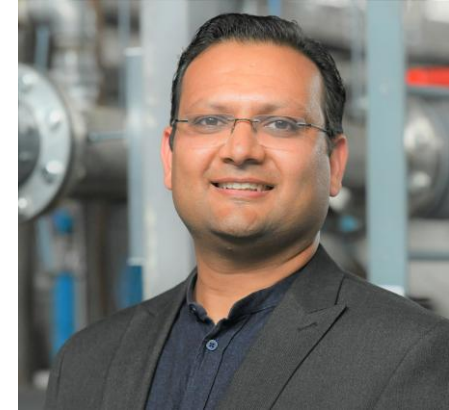
What is in it for Corrosion Engineers?

Dr Prafull Sharma
Chief Technology Officer, CorrosionRADAR

Supported by



- **What is this ‘discussion’ about and not about**
- **Generative AI and LLM – Overview**
- **What is ChatGPT, CoPilot and Gemini**
- **Some practical uses for work productivity**
- **Some limitations and careful considerations**
- **Q&A**



Dr Prafull Sharma

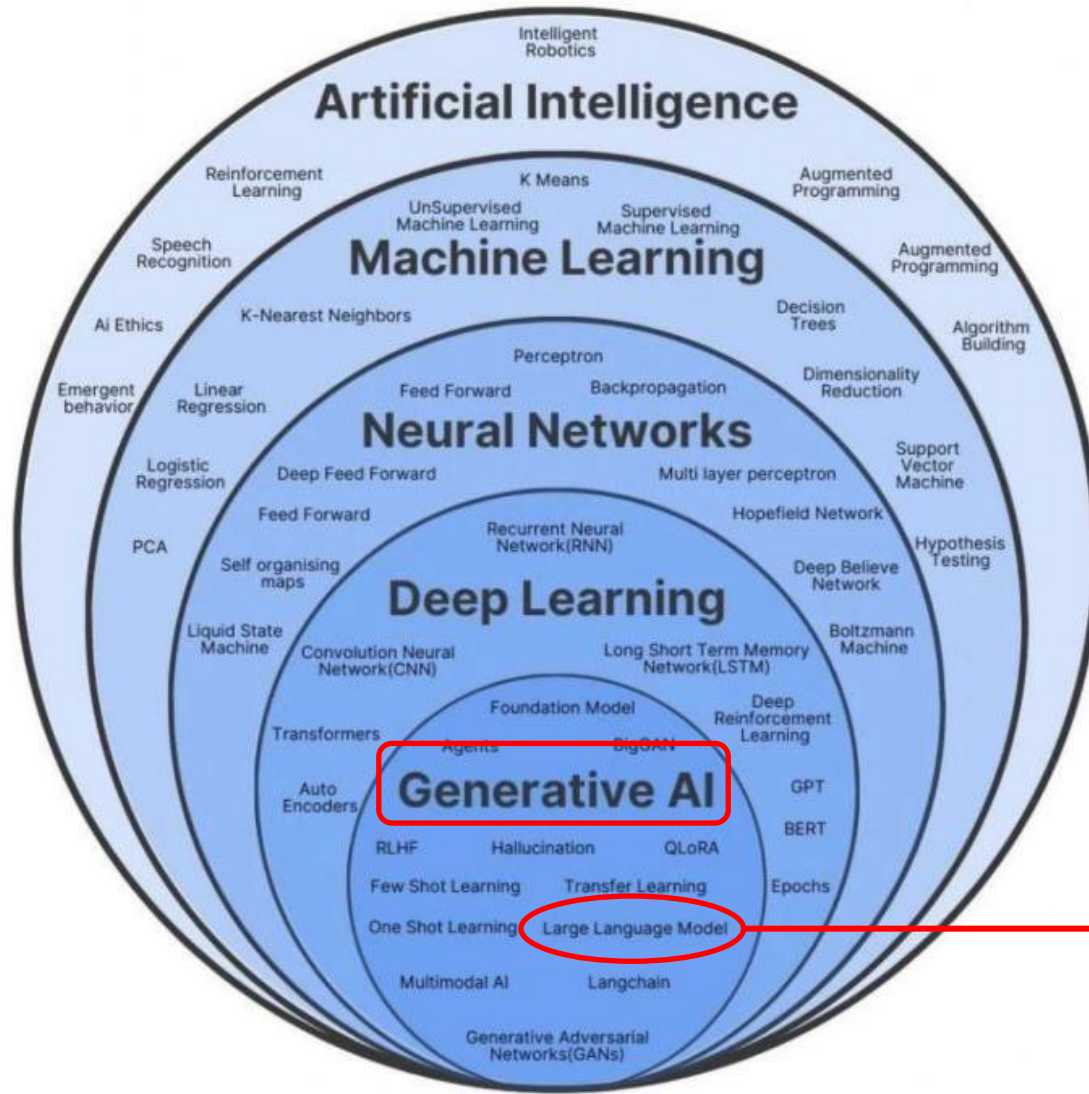
About Me

Based in Cambridge UK

Inventor of CUI monitoring

Chief Technology Officer, CorrosionRADAR

Chairman, ICORR Midlands

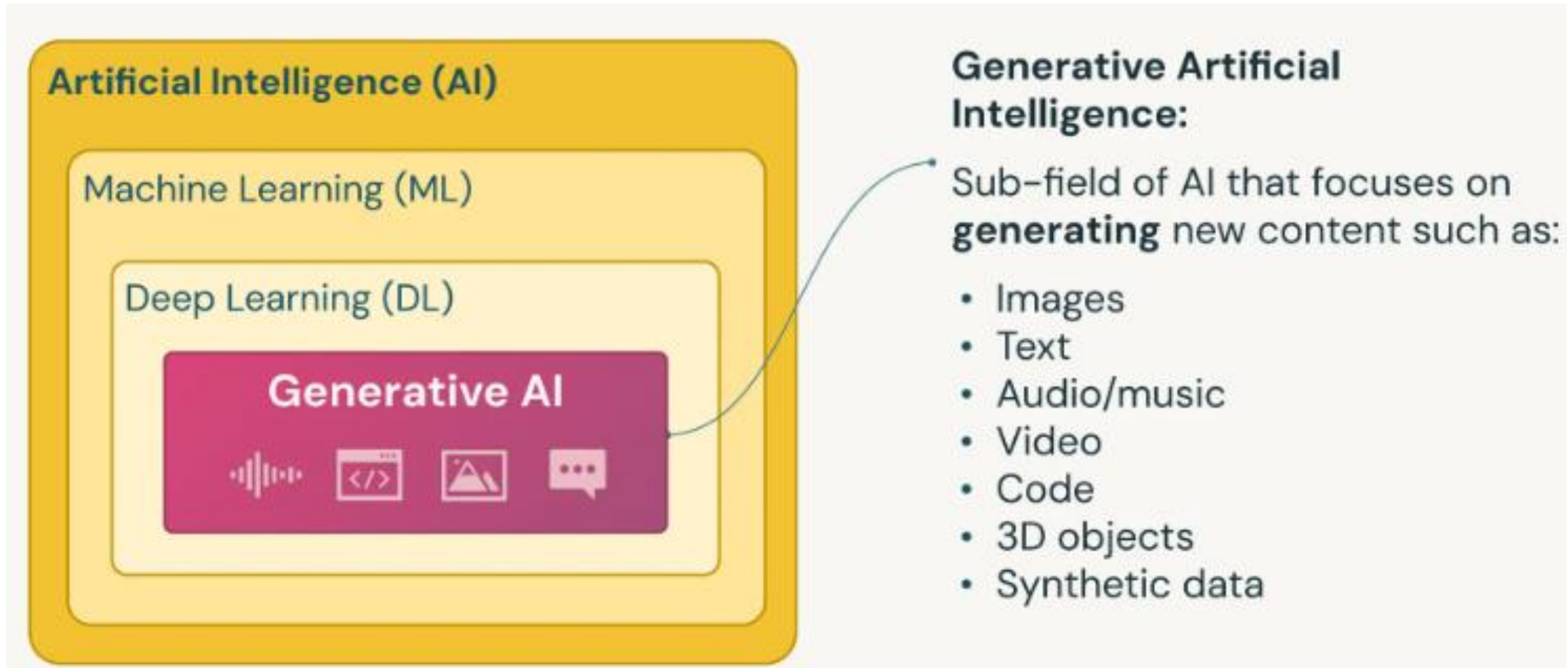


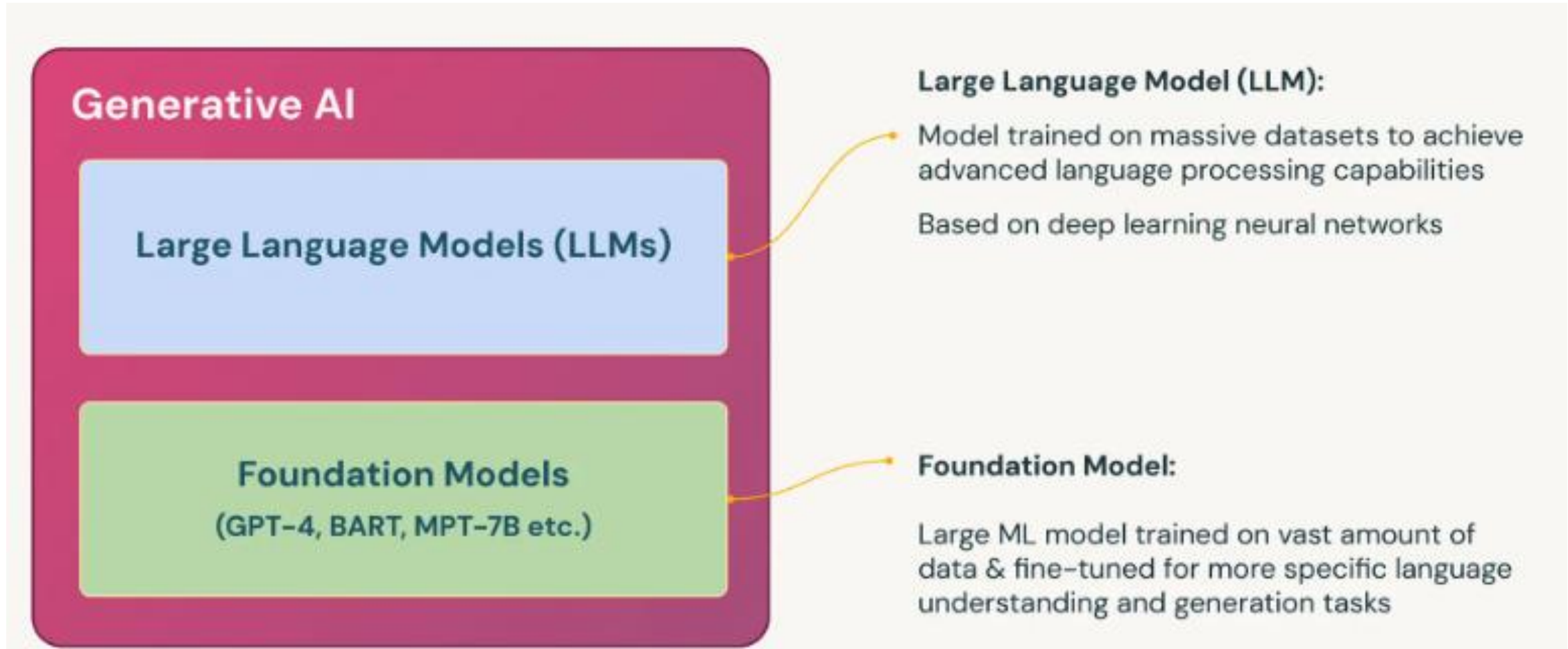
AI and ML are vast topics

Corrosion rate predictive modeling is **not** the discussion point

Focus of this discussion is LLM and Generative AI

And day to day uses for corrosion engineers





Intelligent conversations, creative text creation, code generation

- Content generation
- Question/answers
- Virtual assistants
- Content personalization
- Language style transfer
- Story telling, poetry, creative writing
- Translation
- Code generation / auto-completion

Hey! I am giving a presentation about Generative AI in Data + AI Summit. Write a short funny text to convince audiences that Generative AI is the future. Max 100 words.



Step into the future with Generative AI! It's not just about flying cars and robot butlers. This mind-boggling technology can compose symphonies, craft witty jokes, and design cutting-edge fashion trends. It pushes the limits of human creativity, conjuring up entire worlds, unique characters, and mind-bending art. But it doesn't stop there. Generative AI revolutionizes industries too, discovering new drugs and predicting market trends. So, get ready to be amazed. Embrace the future, where imagination knows no bounds, and Generative AI becomes our ultimate creative companion. The future is here, and it's hilariously amazing!

Visual/audio/3D generation: Unlocking creativity

Image generation

- Generate realistic/artistic high-quality images
- Virtual agent generation



Video Synthesis

- Animation
- Scene generation



3D Generation

- Object, character generation
- Animations



Audio Generation

- Narration
- Music composition



AI Generated images With CoPilot



- Creative writing: Short stories, creative narratives, scripts etc.
- Technical writing: Documentation, user manuals, simplifying content etc.
- Translation and localization
- Article writing for blogs/social media

“ChatGPT launches boom in AI-written e-books on Amazon”
REUTERS

“AI is already writing books, websites and online recipes”
The Washington Post

“Will ChatGPT supplant us as writers, thinkers?”
The Harvard Gazette



ChatGPT



Copilot

1. Work - Let us paraphrase an email to make it more professional
2. Image analysis – Rust image and % of damaged coating
2. Summarise a lecture from youtube - <https://www.youtube.com/watch?v=zgrQCyu3x0U>



How to Write AI Prompts

1. Context

2. Task

3. Instructions

4. Clarify & Refine

"You are a yoga instructor writing for a wellness magazine. Write an article about meditation. The goal is to educate readers about the benefits of meditation for stress relief and sleep quality. End the article by listing some practical tips for beginners who want to start. Keep the tone approachable and friendly. Aim for a minimum of 800 words. Do you understand?"



Research - Generate an article on chloride stress corrosion cracking

Document - Let us upload a document and chat with it. Do I qualify to be a CEng status with ICORR and what is the best route for me. What about Fellow.



Data privacy and security:

- Avoid using real customer data or any personally identifiable information (PII).
- Use anonymized or synthetic data sets whenever possible.
- Ensure data storage and transfer follow best practices and comply with relevant regulations, such as GDPR or HIPAA.



“Hallucinations” - ChatGPT can make stuff up.

- Be aware of potential biases in data sets and algorithms, which could lead to unfair or discriminatory outcomes.
- Use techniques such as data pre-processing or algorithmic adjustments to minimize the impact of biases.



Responsible use of AI:

- Ensure that your solution aligns with ethical principles and responsible AI guidelines.
- Avoid applications that could be harmful, discriminatory, or promote misinformation.



Some AI tools for productivity and creativity

Images	 RocketAI Generate creative images that perfectly capture your unique brand style.	 BRIA BRIA's allows you to generate high-quality images with one click.	 Midjourney Midjourney uses AI to create images from text descriptions.
Writing	 Jasper Instantly create content for your blog, social media, website, and more.	 ChatGPT ChatGPT is the world's most advanced AI text generation tool.	 Copy AI An AI-powered content generator for all your marketing needs.
Video	 SuperCreator Create short form videos 10x faster using AI.	 Runway Turn any image, video clip or text prompt into a compelling piece of video.	 Fliki Turn text into videos with AI voices.
Audio	 Altered An AI tool to record and edit your voice recordings everywhere.	 Voicemod Real-time voice changing and custom sound effects for every game and app.	 Krisp The best AI tool to eliminate background noise during calls.
Coding	 AutoRegex Converting plain English to RegEx with Natural Language Processing.	 Lightning AI Fast and minimal libraries to train and deploy AI models.	 GitHub Copilot Suggests code and entire functions in real-time, right from your editor.
Productivity	 Notion AI Write better in Notion with the help of AI. Create better content 10x faster.	 Albus An AI assistant to get answers quickly and easily.	 Slides AI Create compelling presentations with AI in seconds.

Discussion and Q&A