

AVD TECH FEST 2024

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**Expanding Horizons with
Generative AI: Strategic
Transformations in Business
Operations**

Ryan Mangan

EfficientEther Ltd | EtherAssist.AI



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RYAN MANGAN

CEO @ EfficientEther Ltd

Ryan Mangan is a seasoned technologist across both IT professional and development environments. As the founder of EfficientEther Ltd, he focuses on leveraging AI for cloud optimisation, sustainability, assistance, and augmented actions. Ryan is also the creator of **EtherAssist.AI**, which offers a 14-day free trial, and **Efficient Ether Cloud**, both designed to drive innovation and efficiency in cloud operations. In addition, he is an accomplished author and technical reviewer on a wide range of topics, including building cloud applications.





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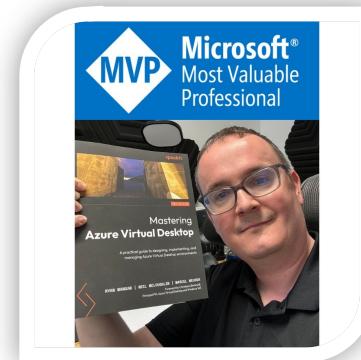
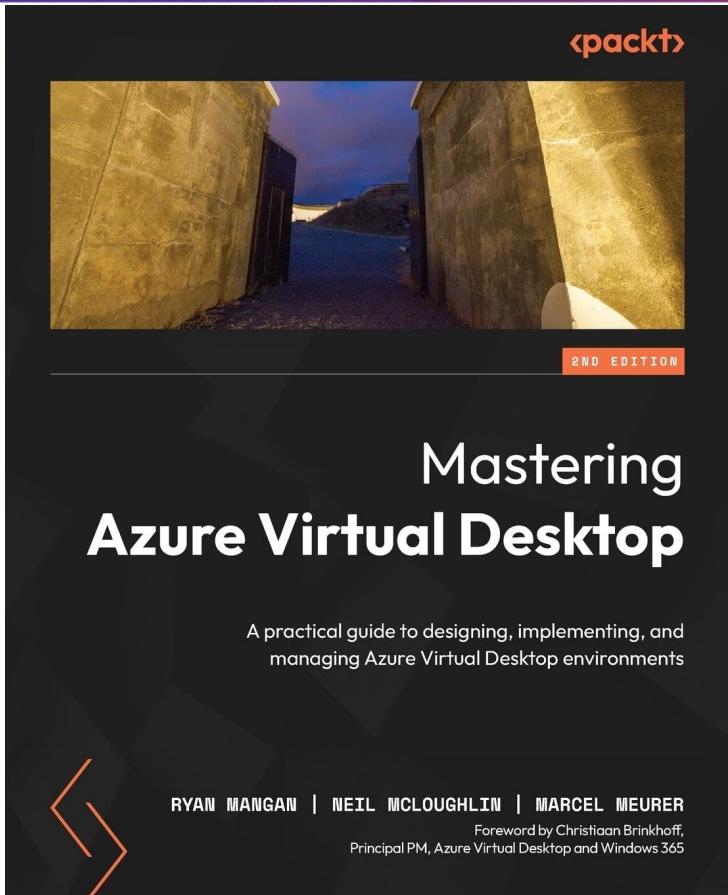
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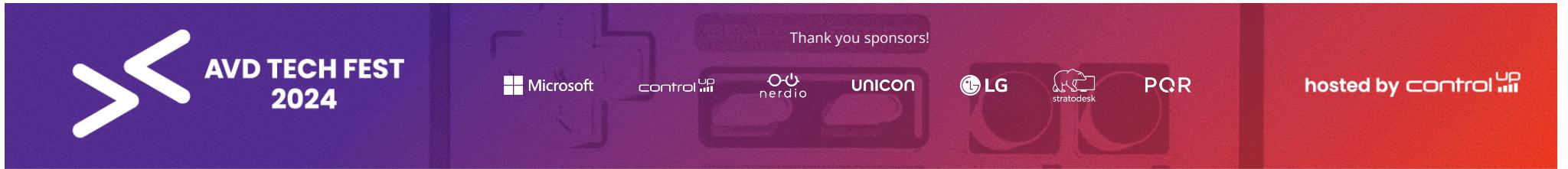
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A screenshot of a GitHub repository page for "AVDTechFest2024". The repository is public and contains 9 commits. The README file includes sections for "AI Sessions at AVD TechFest 2024, Amsterdam" and a note about the sessions exploring AI integration in Azure Virtual Desktop. A large image of the AVD Tech Fest 2024 logo is displayed on the right side of the repository page.





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AI ?



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What is Generative AI





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Chat playground

⇄ Apply changes

</> View Code

Deployment *

Create new deployment

Phi-3-mini-128k-instruct-jhyjr

System message

Add your data [PREVIEW](#)

Parameters

Please select the 'Apply changes' button above to apply your changes.

Give the model instructions and context

ⓘ



You are an AI assistant that helps businesses create operational documentation

+ Add section ▾

Chat session



Start typing here





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2010

2014

2017/22

2022

Translation of Natural Language

AI Researchers worked on natural language transition, discovering that models exposed to vast amounts of text based data produced much better results using top-down grammatical rules.

Language Models began to provide results

Around 2014, language models began to make sense of the meaning of words in a natural language by analyzing the context word appears.

Large Language Model foundation

Advanced made between 2017- 2022, resulted in a natural language models that can serve as foundation for customizations. Creating foundation models is cost prohibitive, but once created could be customized using small amounts of additional data to achieve positive outcomes.

Main Stream Adoption of LLM's

In 2022, ChatGPT arrived to the market. Allowing consumers and businesses to access large language models



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High-Level AI Stages...

AI Stages	Artificial Narrow Intelligence (ANI)	Artificial General Intelligence (AGI)	Artificial Super Intelligence (ASI)
Description	Execute specific focused tasks, without ability to self-expand functionality	Perform broad tasks, reason, and improve capabilities comparable to humans	Demonstrate intelligence beyond human capabilities
Timing	Today	2050 vs 2075	TBC
Implications	Outperform humans in specific repetitive functions, such as driving, medical diagnosis, and financial advice	Compete with humans across all endeavours, such as earning university degrees and convincing humans that it is human	Outperform humans, helping to achieve societal objectives or threatening the human race

[When will singularity happen? 1700 expert opinions of AGI \[2024\] \(aimultiple.com\)](https://aimultiple.com)



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OpenAI's 5 Levels of 'Super AI'...

AI Levels	Description	Timing	Implications	Impact on Jobs
Level One: Conversational AI	Simple AI that can handle basic conversations and interactions	Today	Enhances customer service and user interactions	Jobs enhanced
Level Two: Reasoning AI	AI that can perform reasoning tasks, make decisions based on logic and data	Near Future	Supports complex decision-making processes	Some jobs at risk due to automation
Level Three: Autonomous AI	AI that can operate independently in complex environments	Mid-term Future	Autonomous systems in industries like transportation, logistics, and manufacturing	Significant job displacement potential
Level Four: Innovating AI	AI that can create new ideas, innovations, and improve existing processes	Long-term Future	Drives innovation and improvements across various fields	Jobs at risk; new job roles created
Level Five: Organizational AI	AI that can manage and optimize entire organizations	Distant Future	Transforms organizational structures and efficiency	Major reorganization of job roles and functions

[OpenAI's 5 Levels Of 'Super AI' \(AGI To Outperform Human Capability\) \(forbes.com\)](https://www.forbes.com/sites/forbestechcouncil/2023/08/28/openais-5-levels-of-super-ai-agi-to-outperform-human-capability/)



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AI's Impact Across Industries



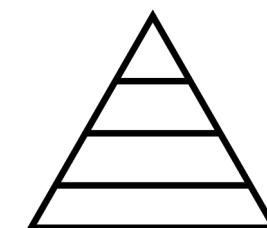
Finance



Healthcare



Manufacturing



Other



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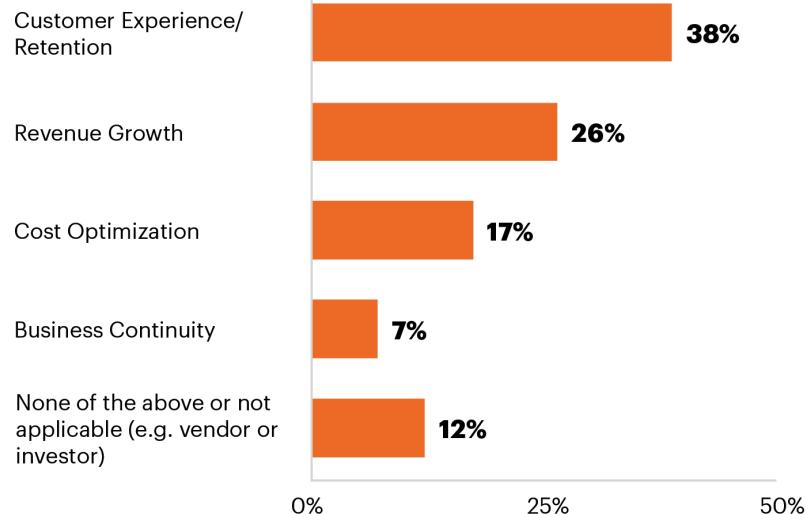
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Primary Focus of Generative AI Initiatives



gartner.com

Source: Gartner
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Real Life Case Studies

- **Finance:** AI-driven systems categorise and analyse vast amounts of transactions in real time, reducing manual intervention and increasing accuracy.
- **Healthcare:** In hospitals, AI supports radiologists by identifying anomalies in imaging data with greater precision than traditional methods.
- **Manufacturing:** Predictive maintenance systems powered by AI help companies foresee equipment failures, reducing costly downtime and improving overall productivity.
- **Compliance:** Review of 1000's of Supplier questionnaires relating to current IT Security posture and to identify gaps and any recommendations / remediations.



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Key AI Technologies

Microsoft Copilot, Azure OpenAI..... & Open Source



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Microsoft CoPilot: Empowering Productivity Across Microsoft 365

- **Automates routine tasks:** Copilot assists with tasks like summarising meetings, generating emails, and drafting documents, freeing up time for more strategic work.
- **Integrated across the Microsoft 365 suite:** Available within familiar tools like Word, Excel, and Teams, Copilot helps users achieve more with less effort.
- **Real-world impact:** Copilot users suggest an average daily time savings of **22 minutes** which translates into enhanced productivity and efficiency at scale.



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Copilot

Your everyday AI companion



Outline the steps to write and publish an e-book, including marketing tips



Create a SWOT analysis about environmental goals and impact



Examine the influence of classical music on modern film scores

[Terms](#) | [Privacy statement](#) | [FAQs](#)

Copilot

Onto the next! What can I do for you?



Ask me anything...





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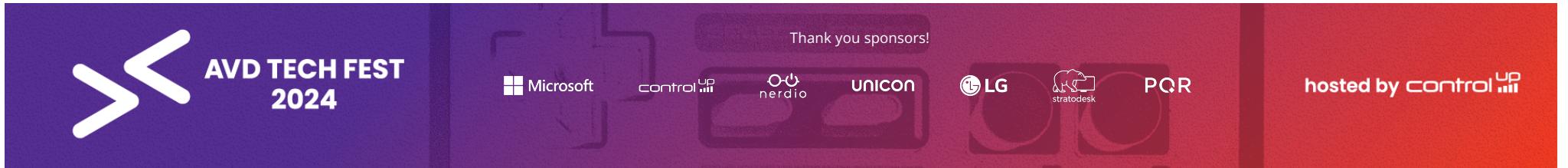
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Azure OpenAI:

- **Advanced AI models:** Azure OpenAI brings cutting-edge models like GPT-4 and Codex to businesses, enabling deeper data analysis, natural language processing, and code generation.
- **Scalable AI infrastructure:** Azure's cloud-based platform provides the flexibility and scalability required to integrate AI into a wide range of business processes.
- **Enhanced decision-making:** With Azure OpenAI, organisations can quickly analyse vast datasets, derive actionable insights, and improve decision-making in real time.
- **Microsoft Azure:** Familiar platform and experience as well as access to many services on Azure.



Open Source

- Ollama
- Azure AI Studio
- Hugging Face

Find the right model to build your custom AI solution

Show filters

All filters Collections Deployment options Inference tasks Fine-tuning tasks Licenses: mit Clear all

Models 308

Search

Phu-3-medium-4k-instr... Chat completion

Phi-3-mini-4k-instruct Chat completion

Phi-3-mini-128k-instruct Chat completion

Phi-3-medium-128k-instruct Chat completion

Phi-3-small-8k-instruct Chat completion

Phi-3-small-128k-instruct Chat completion

Phi-3.5-MoE-instruct Chat completion

Phi-3-vision-128k-instruct Chat completion

huggingfaceh4-zephyr- Text generation

ticlazau-starcoder2- Text generation

equall-saul-7b-instruct-v1 Text generation

baai-bge-large-en- feature-extraction

Salesforce-BLIP-2-opt... Visual question answering

Salesforce-BLIP-2- Image to text

OpenAI-CLIP-Image-Tex... Embeddings

roberta-large-open Text classification

gpt2-medium Text generation

spt2-large Text generation

roberta-large-mnli Text classification

microsoft-deberta- Fill mask

Models

Filter by name... Featured

llama3.1
Llama 3.1 is a new state-of-the-art model from Meta available in 8B, 70B and 405B parameter sizes.
Tools 8B 70B 405B
5.4M Pulls 94 Tags Updated 8 days ago

gemma2
Google Gemma 2 is a high-performing and efficient model available in three sizes: 2B, 9B, and 27B.
2B 9B 27B
1.2M Pulls 94 Tags Updated 8 days ago

qwen2.5
Qwen2.5 models are pretrained on Alibaba's latest large-scale dataset, encompassing up to 18 trillion tokens. The model supports up to 128K tokens and has multilingual support.
Tools 0.5B 1.5B 3B 7B 14B 32B 72B
1.4G EV Rule 192 Tags Updated 8 days ago



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Azure AI Studio



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Real-World Application

- **Data Analytics:** Companies use Azure OpenAI to automate data analysis, delivering insights faster and with greater accuracy.
- **Automation:** Automating customer service responses, document generation, and workflow management allows organisations to focus on higher-value tasks.

Customer Service
Automation

Sentiment Analysis

Fraud Detection



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Future Growth of AI

- The global AI market is forecasted to grow at a (circa) **CAGR of 34.6%** from 2022 to 2030.

Market Drivers:

- Increasing demand for AI in automation, predictive analytics, and personalisation across various sectors.
- Enhanced computing power and cloud infrastructure enabling rapid AI deployment.

Opportunities:

- AI-driven innovation is opening doors for startups and large enterprises alike.
- Businesses that integrate AI early will gain a competitive edge and benefit from improved efficiency, customer satisfaction, and decision-making.



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What Gartner Say

- Generative AI is primed to make an increasingly strong impact on enterprises over the next five years.

Gartner predicts that:

- By 2024, 40% of enterprise applications will have embedded conversational AI, up from less than 5% in 2020.
- By 2025, 30% of enterprises will have implemented an AI-augmented development and testing strategy, up from 5% in 2021.
- By 2026, generative design AI will automate 60% of the design effort for new websites and mobile apps.
- By 2026, over 100 million humans will engage robocolleagues to contribute to their work.
- By 2027, nearly 15% of new applications will be automatically generated by AI without a human in the loop. This is not happening at all today.



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Key Benefits of Generative AI

Decision Making

Cost Reduction

Scalability



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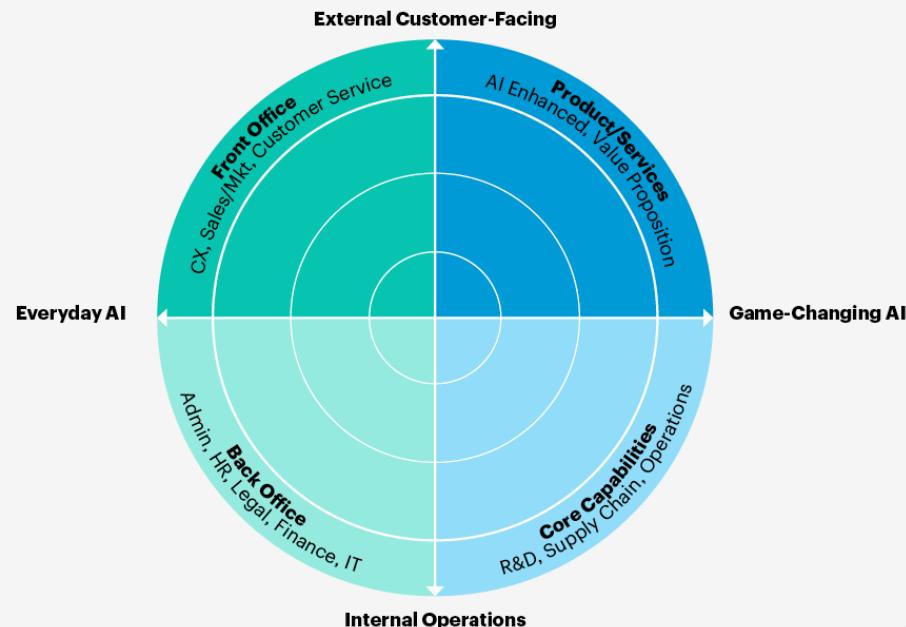
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The AI Opportunity Radar



Source: Gartner

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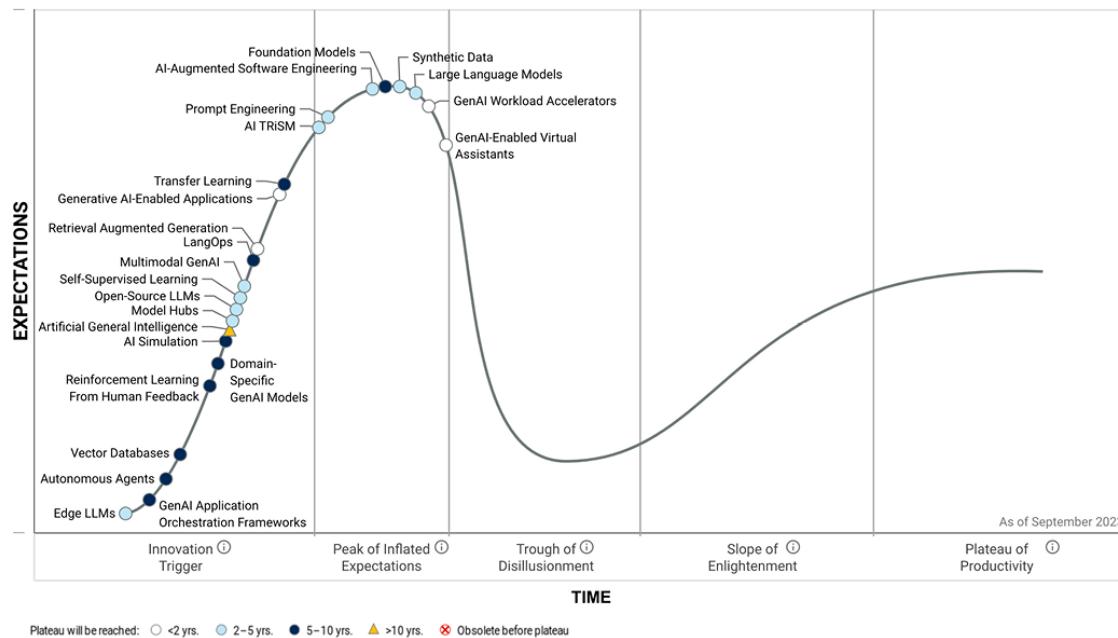
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Hype Cycle for Generative AI



Source: Gartner

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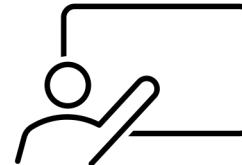
Challenges & Considerations



Data Privacy & Security



AI Integrations



Training



Ethical AI Usage



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My Perspective on the Future of AI

Faster Outcomes

Process vast
amounts of Data

Actionable insights



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