AI Startup Launches SwarmFormer: Revolutionizing AI with Unmatched Efficiency

Wednesday 29 January, 2025

LONDON, UK - 29 January 2025 – Takara.ai, a trailblazer in Artificial Intelligence innovation, has announced the launch of **SwarmFormer**, a cutting-edge AI architecture inspired by natural swarm intelligence. This breakthrough delivers state-of-the-art performance while reducing computational resource demands by up to **94%**, positioning the UK at the forefront of sustainable AI innovation.

This development aligns with the UK government's **AI Opportunities Action Plan**, underscoring the nation's ambition to lead in AI through ingenuity and practical solutions.

SwarmFormer: Nature-Inspired Efficiency

SwarmFormer mimics the collective behaviour of swarming insects to achieve remarkable efficiency. By combining **local token interactions** with **cluster-based global attention**, it matches the performance of industry-standard models while using only **6.7M parameters**—a fraction of the **108M parameters** in traditional systems. This innovation not only slashes infrastructure costs by **70%**
but also enables advanced AI applications to run seamlessly on consumer-grade hardware.

"SwarmFormer is a game-changer," said Jordan Legg, Chief AI Officer at Takara.ai. "It proves that the UK can lead in AI not just through investment but through innovation. By democratising access to powerful AI tools, we're making it possible for organisations of all sizes to harness AI's transformative potential."

Pioneering Sustainable AI

SwarmFormer addresses key priorities in the government's strategy, including:

- **Sustainable Infrastructure**: Reducing energy consumption and computational overhead.
- **Democratised Development**: Lowering barriers to entry for smaller organisations.
- **Homegrown Innovation**: Establishing the UK as a global leader in AI research and application.

Technical Excellence with Real-World Impact

SwarmFormer leverages a hierarchical local-global attention mechanism, enabling decentralised multi-hop propagation of information and efficient global context representation. Its **cluster-based architecture** drastically reduces memory and computational requirements while retaining exceptional accuracy in text classification tasks. Experimental results show SwarmFormer achieving **up to 90% fewer parameters** than baseline models like BERT and outperforming them on key benchmarks.

For technical details, visit our SwarmFormer insights page.
(https://takara.ai/thinking/insights/swarmformer/)

Media:

Related Sectors:

Business & Finance :: Computing & Telecoms :: Environment & Nature :: Government :: Manufacturing, Engineering & Energy :: Media & Marketing :: Medical & Pharmaceutical :: Public Sector & Legal :: Transport & Logistics ::

Related Keywords:

Sustainable AI :: AI Opportunities Action Plan :: Efficient Transformer Models :: Deepseek ::

Scan Me:

Company Contact:

_

takara.ai

T. 07810123775
E. carlos@takara.ai
W. https://takara.ai/

Additional Contact(s):
marty@takara.ai
07944 494 546

View Online

Additional Assets:
https://takara.ai/thinking/insights/swarmformer/
https://huggingface.co/takara-ai/SwarmFormer-Sentiment-Base
SwarmFormer by Takara.AI PR

Newsroom: Visit our Newsroom for all the latest stories:
https://www.takara.pressat.co.uk