



SES207

Generative AI Powered Image Search in Amazon Kendra

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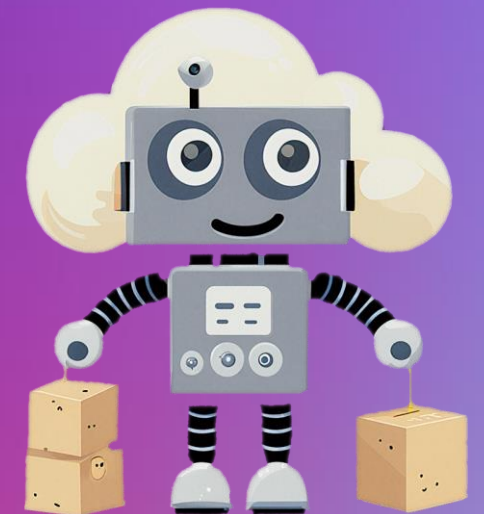
AWS Professional Services

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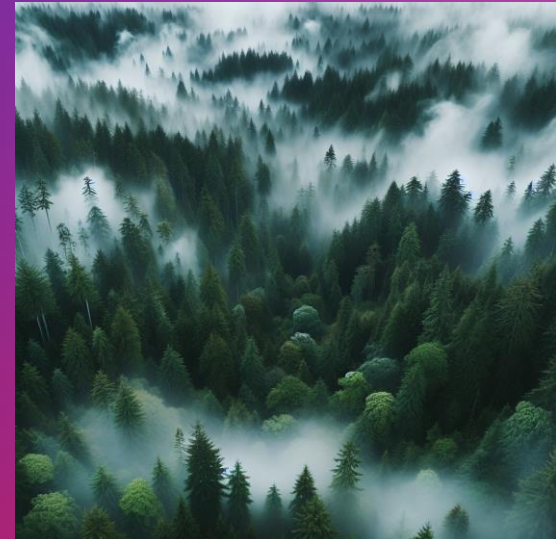
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AWS Machine Learning Blog



Solution Demo



Applications



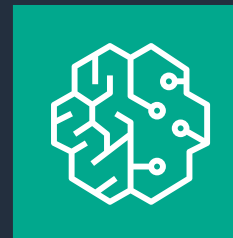
Solution Approach



HuggingFace

10000+ pre-trained Hugging Face Transformers for NLP, speech, and vision models

pre-trained
GenAI



Amazon SageMaker

Fully managed service that brings together a broad set of tools to enable high-performance, low-cost machine learning (ML) for any use case

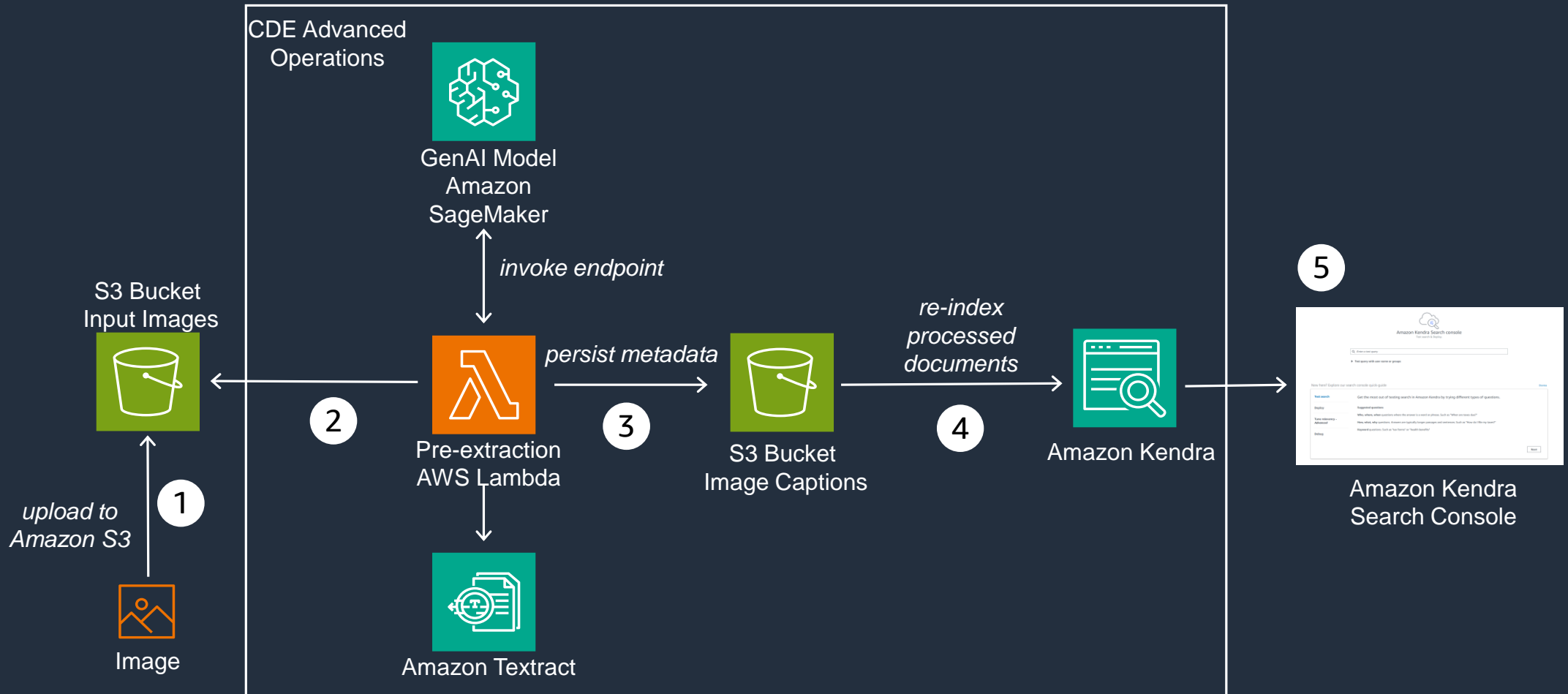
Image
Descriptions



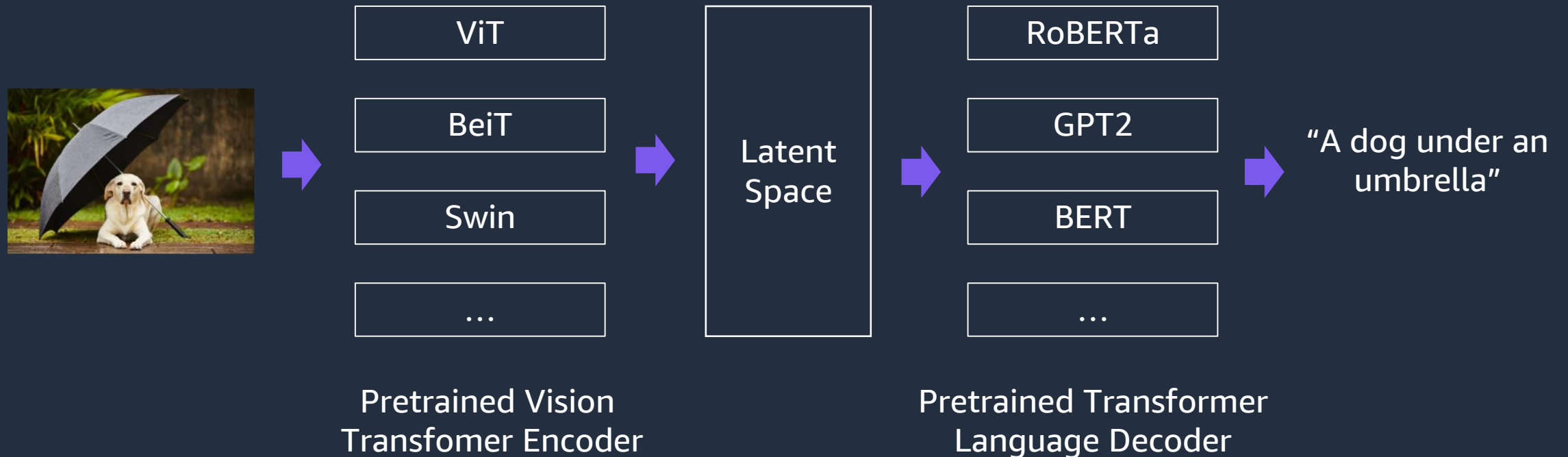
Amazon Kendra

Intelligent enterprise search service for websites and applications powered by ML

Solution Architecture

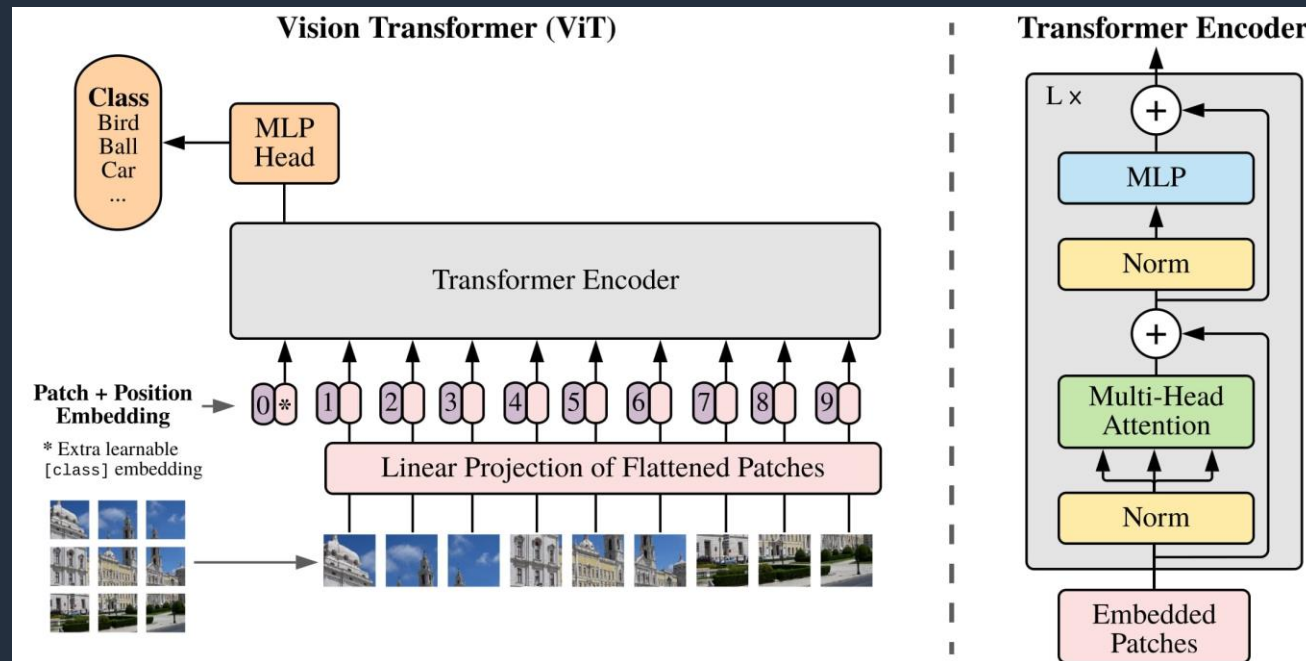


GenAI Model – Vision Encoder Decoder



Li et. al., TrOCR: Transformer-based Optical Character Recognition with Pre-trained Models, arxiv.org/abs/2109.10282

GenAI Model – Vision Transformer ViT

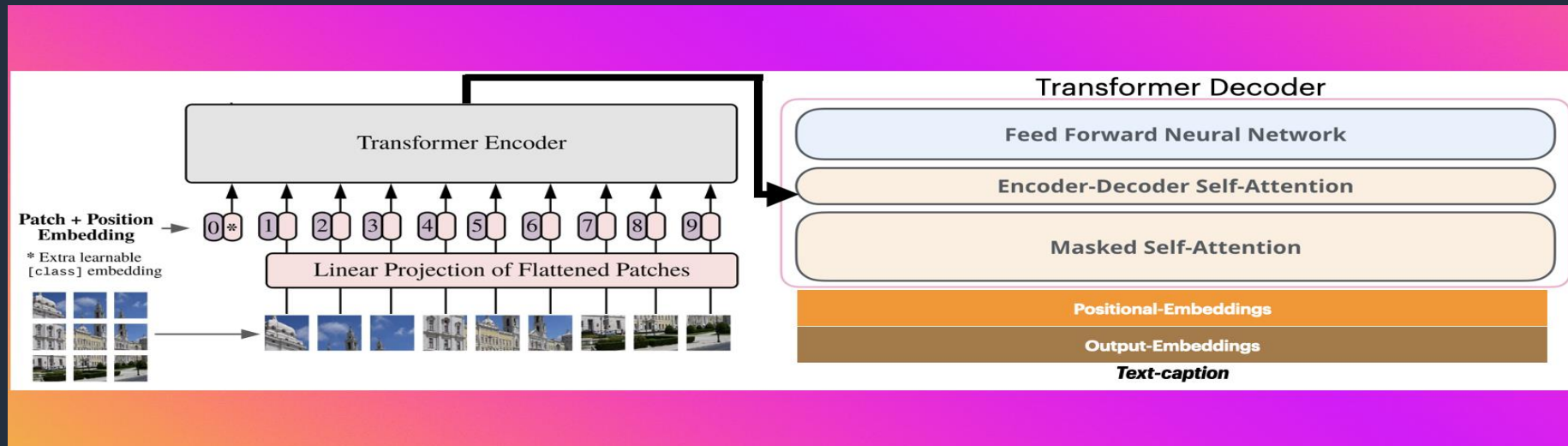


Dosovitskiy et. al., An Image is Worth 16x16 Words: Transformers for Image Recognition at Scale, arxiv.org/abs/2010.11929

GenAI Model

Model details and model fine-tuning for custom datasets

- **Vit-GPT2 Integration:** Combines image and language models for captioning.
- **AWS Deployment:** Easy setup and customization options.
- **Model Flexibility:** Choose best-fit models for specific needs.
- **Industry-Specific Customization:** Tailor for ERP, medical imaging, etc..



<https://huggingface.co/nlpconnect/vit-gpt2-image-captioning>

Interactive Demo



Menti Survey



<https://www.menti.com>

Code: 1154 1227

Team & Blog Post



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Automate caption creation and search for images at enterprise scale using generative AI and Amazon Kendra





Thank you!

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