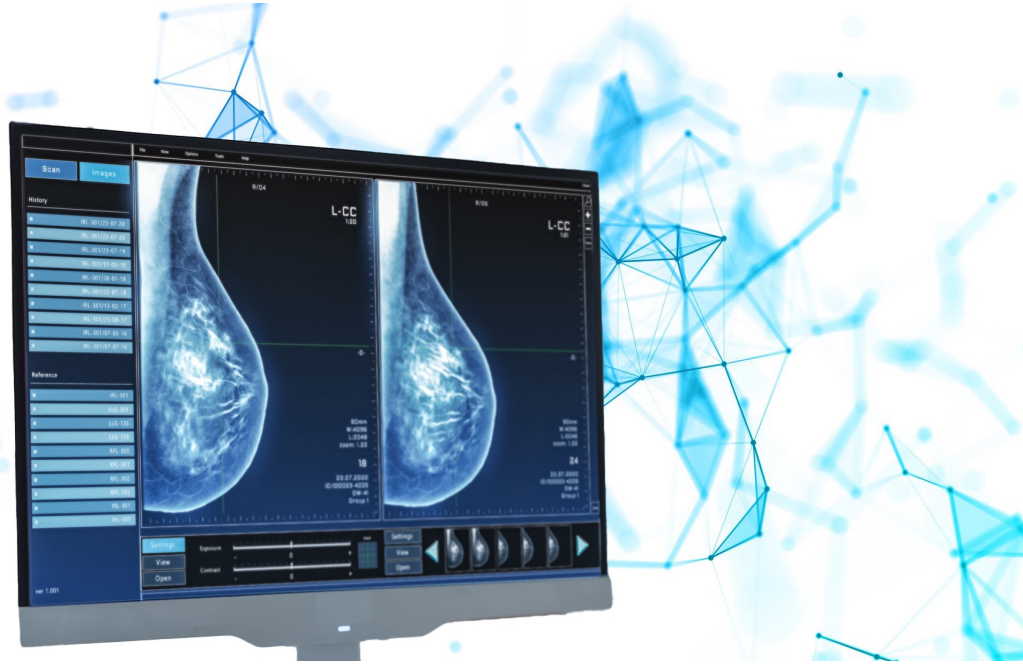# AI for Early Breast Cancer Detection

tenx.

Shaukat Khanum Memorial Cancer Hospital and Research Center (SKMCH&RC) is one of the largest cancer hospitals in South Asia. With presence in over fifty cities, SKMCH&RC has received global recognition, including the Joint Commission International's Gold Seal of Approval and WHO's UAE Foundation Prize.

Shaukat Khanum Memorial Trust
شوكت خانم میموریل ٹرسٹ

Joint Commission International
Enterprise Accreditation

Challenge

Up to 30% of breast cancer cases are missed in initial screenings due to misinterpretations and overlooked findings. SKMCH&RC aimed to increase diagnosis accuracy using AI ultimately detecting cancer earlier and increasing the likelihood of successful treatment.

Project

- Collaborated closely with a team of top-tier Oncologists and Radiologists, trained in the US, to gain a deep understanding of visual patterns used to identify cancers.

- Used AI-assisted data labelling techniques to help doctors label mammograms.

- Developed AI algorithms for predicting the likelihood of cancer in mammographic imagery used for diagnosis and follow-up.

- Trained models to identify features such as suspicious micro calcifications, architectural distortions, increased density mass.

- Utilized deep learning models to classify detected calcification and masses as either malignant or benign.

- Built user-friendly interface to analyze mammograms and mark suspicious areas for further investigation.

Value Delivered

- Platform successfully predicts the likelihood of cancer within minutes with over 92% accuracy.

- Solution is easily scalable to thousands of patients and mammograms.

Technologies

Mask RNN Model, Yolo, Python Open Source

Services

| Consulting & Advisory | Architecture & Governance | Artificial Intelligence | Computer Vision | Data Platforms | Reporting & Visualization | Web Development | iOS Development | Android Development | Cloud DevOps | Quality Assurance | Middleware & Integration |

Generative AI: Transforming Healthcare Education

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Challenge

Medfyle employed a manual content generation process, requiring medical professionals to read extensive pages for summaries. Seeking a more efficient and innovative solution, they engaged our expertise to shift towards automation and improve scalability, reducing time and costs.

Project

- Transitioned the client from manual content curation to an automated AI-based system capable of understanding content, highlighting pertinent sections to generate comprehensive summaries.

- Introduced GenAI models to create summaries for various media using pre-defined templates, convert text summaries into videos, and generate infographics based on extracted information:

- Implemented a chatbot optimized for medical prompts, enabling Q&A functionality against loaded documents.

- Developed a user-friendly interface and a custom API on the backend for seamless processing and inference.

- Leveraged advanced AI and cloud solutions for seamless growth and scalability.

Value Delivered

- Curated and summarized content within minutes instead of days, achieving a time efficiency improvement of over 90%.

- Utilizing Gen AI resulted in approximately 40% of cost-savings, allowing for more efficient allocation of resources.

Technologies

Llama2, GPT3.5, Amazon EC2, Amazon Transcribe, SageMaker, FlaskAPI, PyTorch, LangChain, VectorDBs, React

Services

Consulting & Advisory | Architecture & Governance | Artificial Intelligence | Computer Vision | Data Platforms | Reporting & Visualization | Web Development | iOS Development | Android Development | Cloud DevOps | Quality Assurance | Middleware & Integration

Our client operates a learning platform that extracts cutting-edge research from top journals and conferences and delivers it in an accessible microlearning format. The platform offers concise, handpicked insights curated by client editors in collaboration with original sources.

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