

Elevator Pitch Transcript - Early Breast Cancer Detection System

Hi Everyone

My name is Kaitlyn Leung, and I am currently in 11th grade, today, I am thrilled to share with you a project that has been in the works for the past four months—a project fueled by my passion for the healthcare sector.

Breast cancer is a life-threatening disease, affecting millions of lives each year worldwide. Effective early detection strategies are critical in the battle against this life-threatening disease.

Recognizing the limitations and potential errors in current clinical breast exams, I embarked on a mission to create a machine-learning model using an image dataset.

The primary goal? To provide physicians with a reliable second opinion, aiding in the prediction of early-onset breast cancer in patients.

The underlying problem I aimed to tackle was the inefficiency and variability in current methods of detecting and classifying early breast cancer during clinical exams.

Why is this important? Early detection of breast cancer is vital for successful treatment outcomes. With an accurate and efficient means of identifying early signs of breast cancer through the machine learning model, patients can receive timely and appropriate medical interventions.

In the pursuit of the best model, various machine learning models were tested, including a Support Vector Classifier, a Random Forest Classifier, a Ridge Classifier, and a Convolutional Neural Network (CNN).

The CNN model, trained and tested using the Keras Sequential API, emerged as the most effective, achieving the highest accuracy between benign and malignant breast tumors.

The next steps involve the consideration of further refinement of the CNN model's architecture to address these weaknesses, and exploring opportunities for real-world testing and integration of the model into clinical settings.

In conclusion, the developed machine learning model can be used as a supplementary tool for physicians, providing an additional layer of analysis in breast cancer detection.

Thank you for joining me on this journey towards a future where the collaboration of technologies and human expertise transforms a new era of breast cancer diagnosis, treatment and care.

Thank You

Kaitlyn