

Evaluations of different modalities in the diagnosis and Application to Control the Spreading of Tuberculosis using AI

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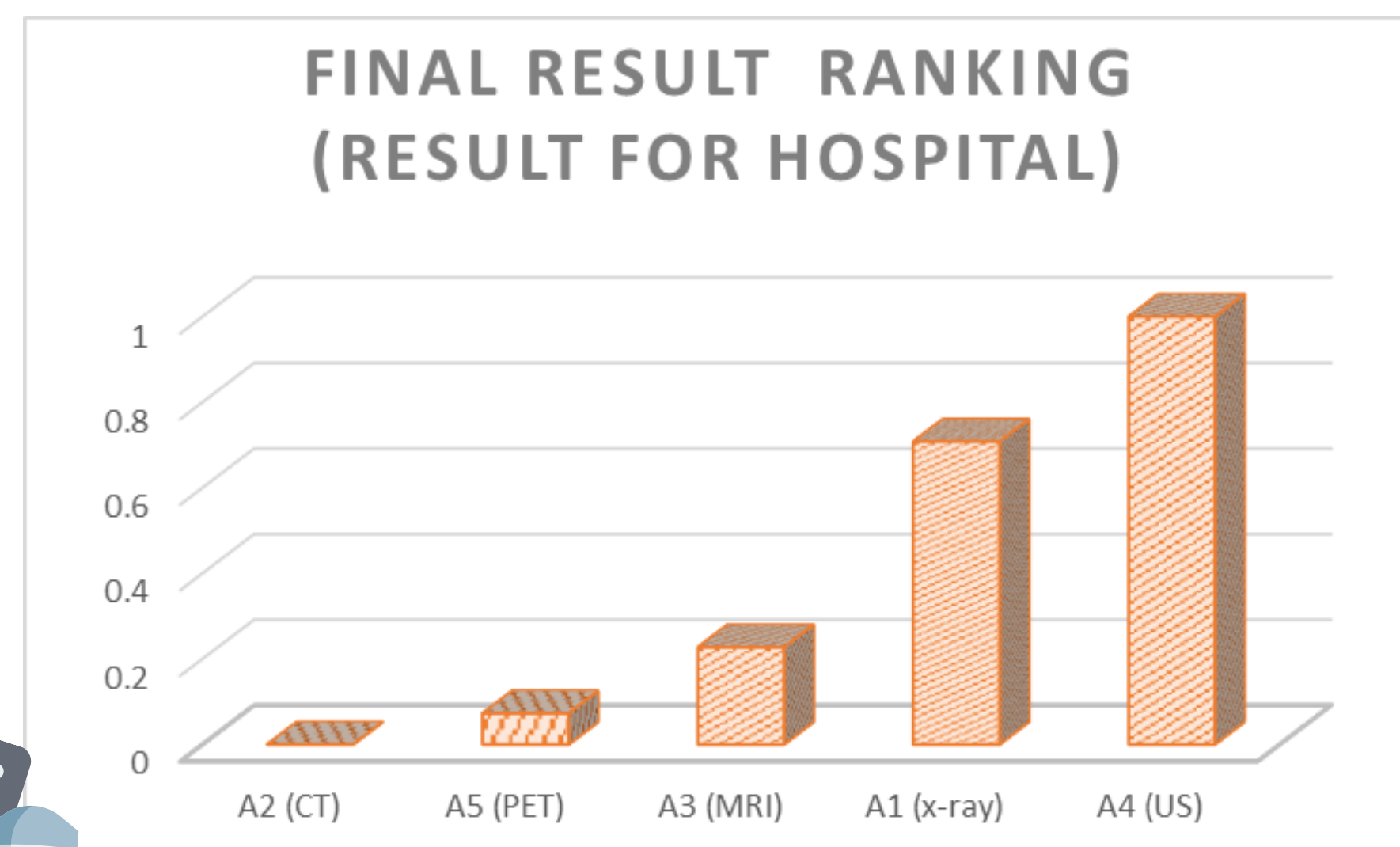
Introduction

- Tuberculosis is classified as an airborne disease since it passes from person to person through the air.
- The radiographer must interact with the patient for proper positioning and breathing instructions during the conventional radiography which will lead to infection to the radiographer.
- The generation of an improved diagnostic simulation will help control the spreading of tuberculosis by allowing the radiographer to communicate and give instructions to the patient without physically being in the same room.

Results (VIKOR METHOD)

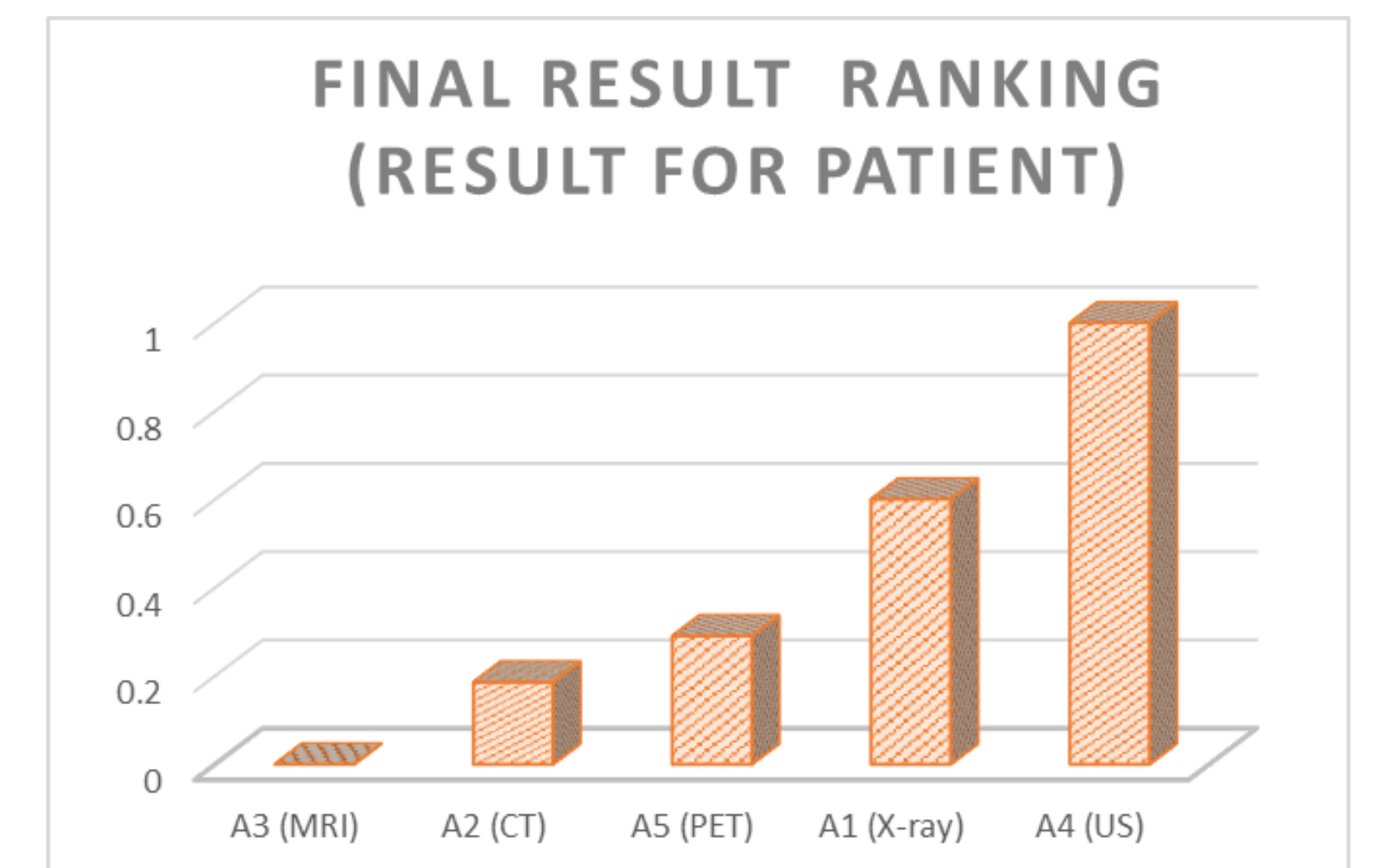
Results for Hospital

The results show that the second (A2) alternative which Computed Tomography (CT) is the best value by minimum of Q Value, and the fourth (A4) alternative which Ultrasound (US) is the worst value by maximum of Q Value.



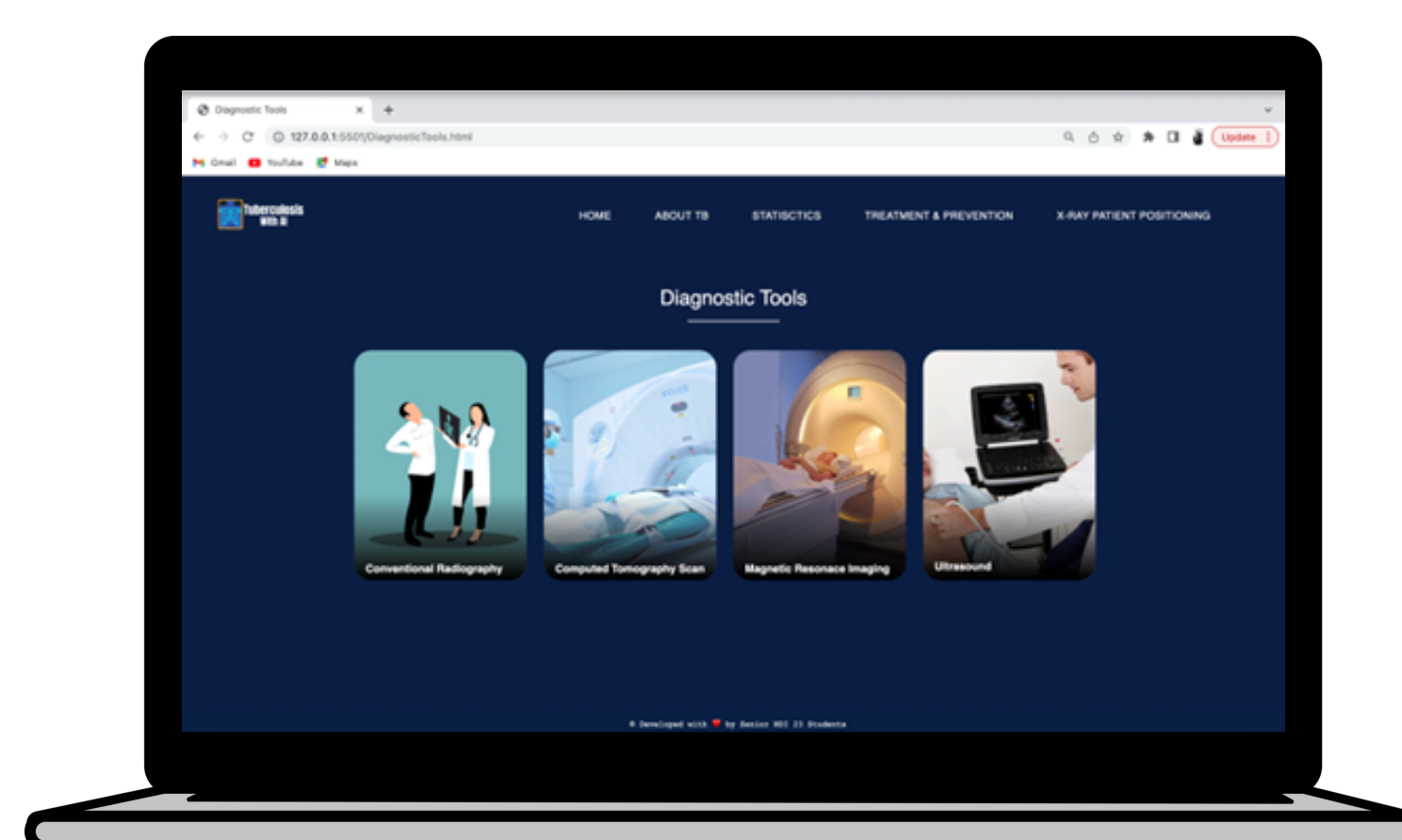
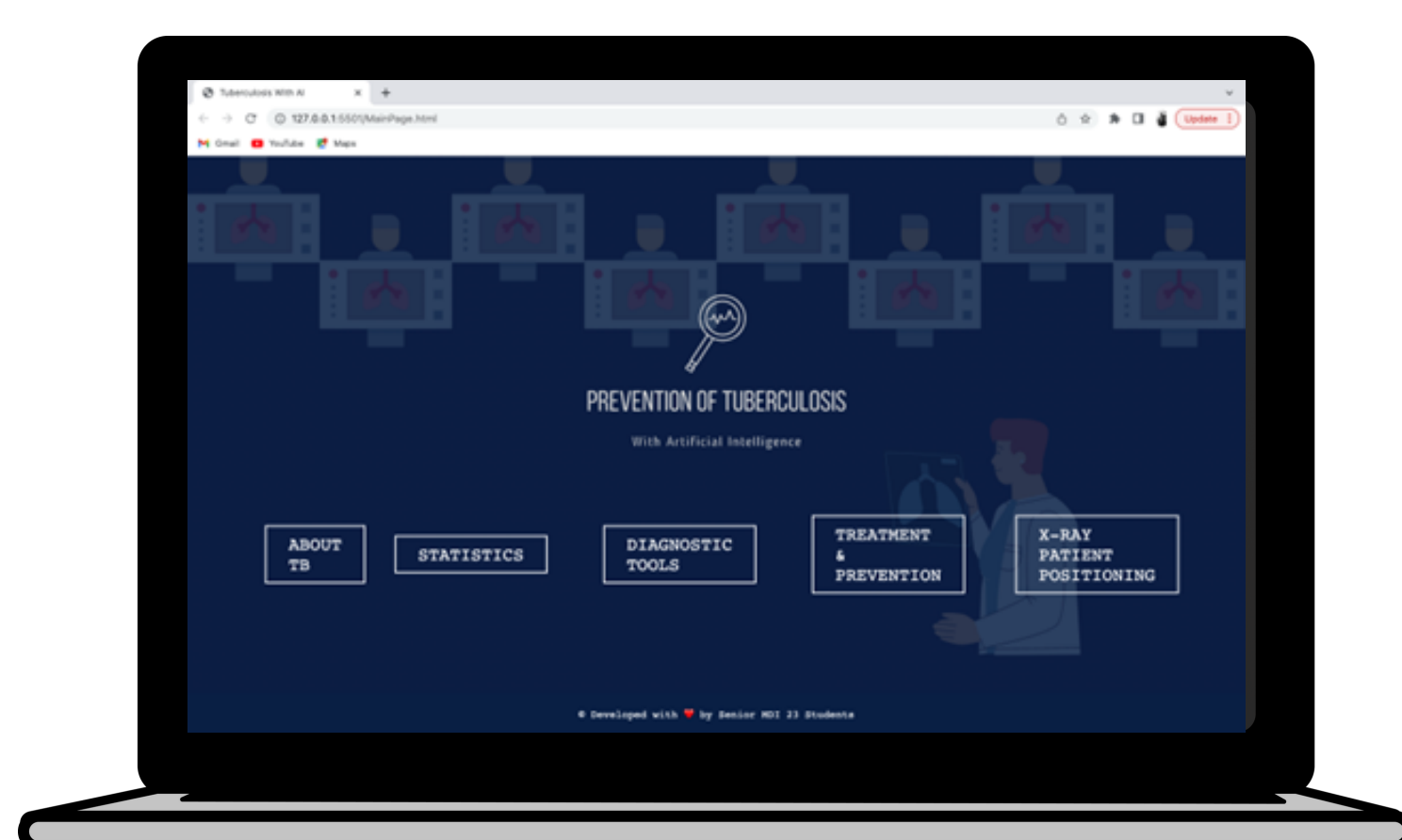
Results for Patient

The results show that the third (A3) alternative which Magnetic resonance imaging (MRI) is the best value by minimum of Q Value, and the fourth (A4) alternative which Ultrasound (US) is the worst value by maximum of Q value.



Generation of an AI application to control the spreading of tuberculosis among radiographers and spread awareness

Due to the rapid development of technology in the world, with the help of an AI simulator we managed to create a webpage and a prototype of an application, that can be developed into a real application if we can manage to get the funding to create it. The main goal of the application is to spread awareness and decrease the spreading of Tuberculosis, and to help the radiographer to avoid direct contact with the patients and decrease positioning error.



Conclusion

- Our study explored the effectiveness of different modalities in the diagnosis and control of tuberculosis using artificial intelligence, with the aim of reducing the spread of the TB and improving patient outcomes.
- Developing an AI application that targets radiographers, that it can be a helpful tool to prevent the spreading of tuberculosis, especially among healthcare workers who are required to interact with patients.
- With the VIKOR method, our study results found that CT is the best modality in result for hospital and the MRI is the best modality in result for patient, while ultrasound was found to be the least effective in both.

