

Detection System for Sitting Position that Affects being Office Syndrome

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Problem

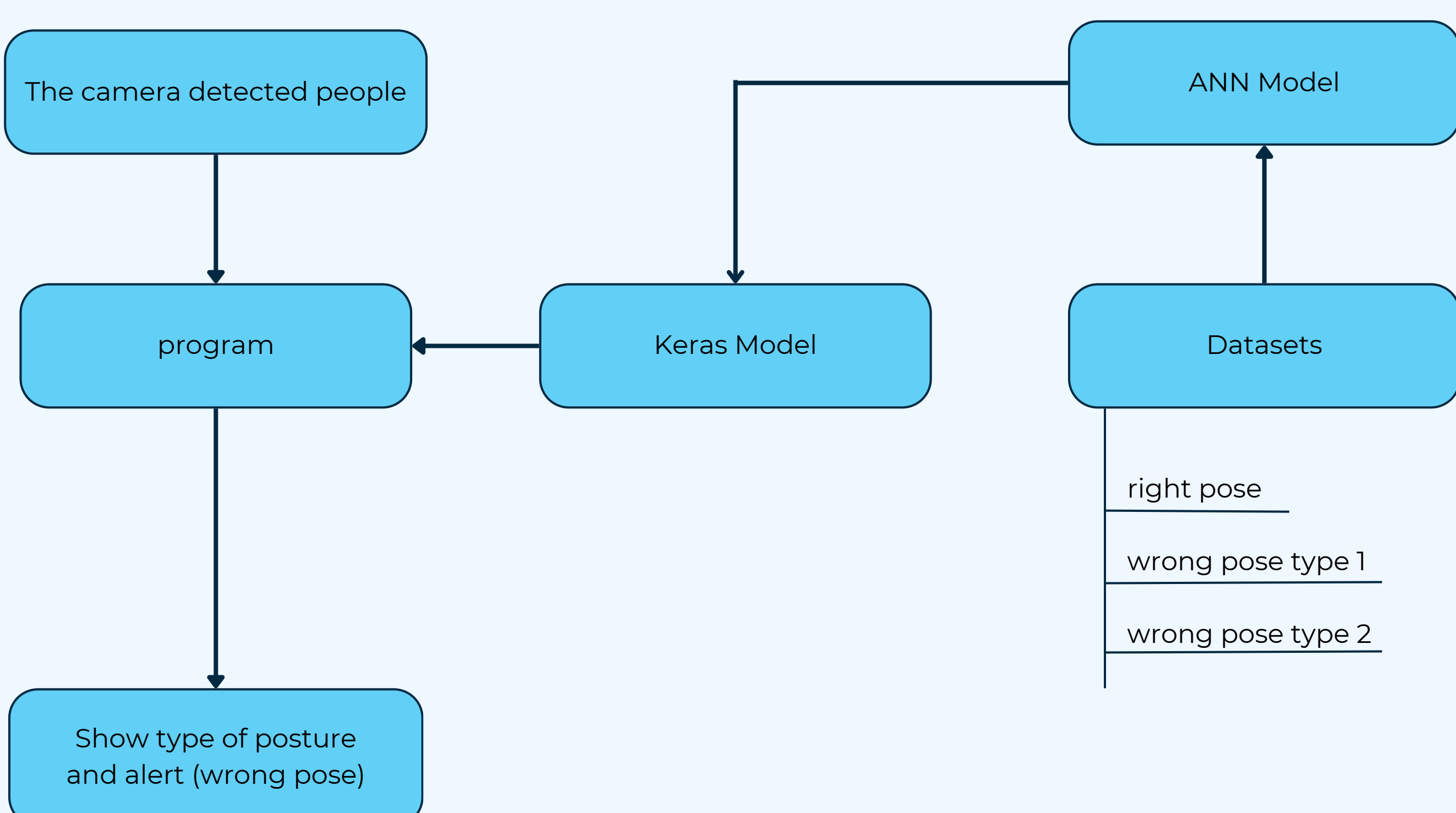


The nature of the work often requires individuals to sit and work continuously for long periods, leading to cumulative injuries. Prolonged use of the same muscle groups can result in office syndrome. According to statistics from 2021, over 80% of Thai people reported experiencing symptoms of office syndrome. This health issue impacts the mechanisms driving the economy, as health problems directly affect work quality. In light of this issue, the organizing committee has come up with the idea of a system or device that could help avoid risky behaviors that contribute to the development of office syndrome.

Framework



• flowchart



• Keras Model

Keras is a neural network Application Programming Interface (API) for Python that is tightly integrated with TensorFlow, which is used to build machine learning models. Keras' models offer a simple, user-friendly way to define a neural network, which will then be built for you by TensorFlow.

Finding

• Example of output.



When the user adopts the correct posture, a message displaying "right1" will appear along with the accuracy percentage. If the user adopts an incorrect posture, a message displaying "wrong1" or "wrong2" will appear, accompanied by the accuracy percentage. The system also provides a vibration alert to prompt the user to adjust their posture to the correct position.

• The table Shows the test result of 5 users.

The users	Accuracy of the sitting posture (%)		
	Right1	Wrong1	Wrong2
1	94	90	91
2	90	90	90
3	94	92	93
4	90	100	98
5	100	100	98
Average	93.6	94.4	94

Interpretation & Conclusion

Detection System for Sitting Position that Affects being Office Syndrome, has Tested with five users of varying shapes and genders showed that the system could accurately detect the coordinates of correct sitting postures (right1) with an accuracy of 93%, and the system was able to accurately detect incorrect postures (wrong1 and wrong2) with accuracy of 94.4%, 94%.