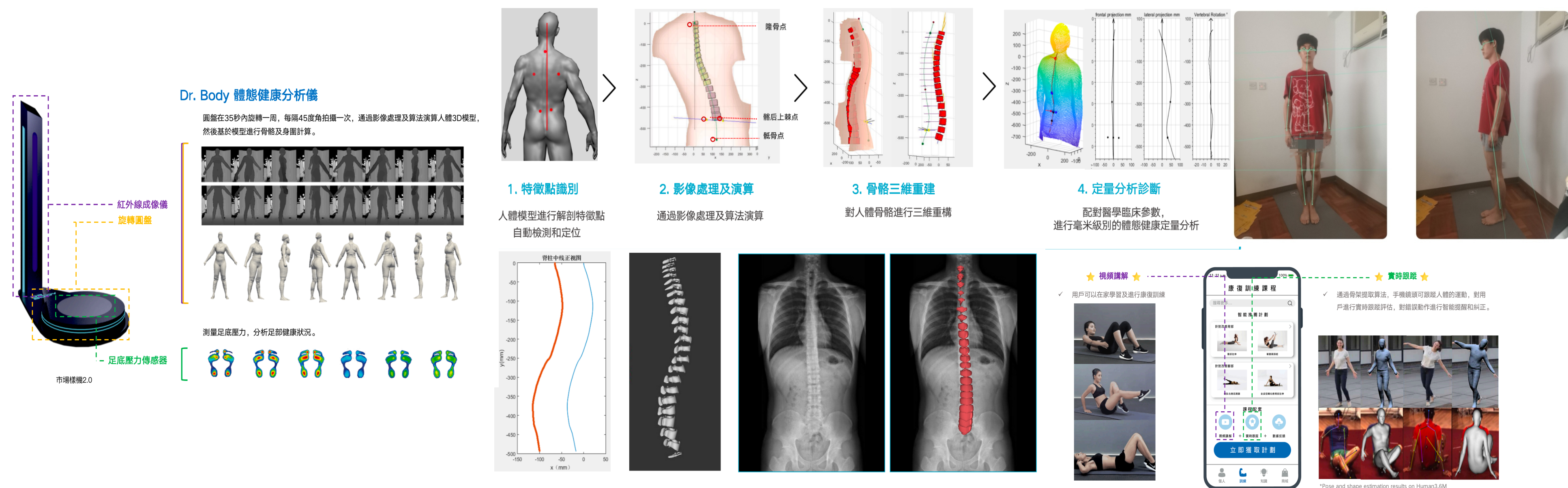


# Dr. Body: Posture Diagnosis + AI

- ❖ **The Dr. Body posture analysis system** is the first automated all-in-one machine that performs comprehensive and accurate analysis, evaluation, and diagnosis of human posture: analysis items are in addition to common body dimensions. It also includes three-dimensional reconstruction of human spine based on infrared, foot pressure analysis, XO legs, pelvic deformation analysis and other functions; it is a set of comprehensive posture evaluation system with clinical significance in the real sense;
- ❖ **Dr. Body APP** uses AI algorithm to screen scoliosis, XO legs, high and low shoulders and other unhealthy postures through the photos of the back of the human body of the mobile phone for screening and severity classification; the use of a single photo of the human body for three-dimensional reconstruction of the human body for posture analysis and dimension measurement ; Provide users with a variety of sports rehabilitation online courses, and record sports videos for intelligent action correction and analysis.



**Innovation competition awards:** First Prize of Hong Kong University Student Innovation and Entrepreneurship Competition (2020); Hong Kong Social Enterprise Competition (HKSEC2019) Intellectual Property Ambassador Award; "Weining Cup" International AI Medical Challenge First Prize (2019), etc

# AI-enhanced Motion Tracking with Mobile and Wearable Device

- ❖ **Arm Motion Tracking and Human Activity Recognition:** this project uses a smart watch to precisely track the arm motion in real-time. With the motion trace of the arm, we can further applies the AI techniques to recognize abundant arm gestures and understand the associate human activities (e.g., running, smoking, drinking, driving) in the daily life. Compared to the commonly used step counter, activities tracking benefits healthy analysis applications by providing delicate and diversified healthy information. Moreover, this technique may also benefit a wide range of applications, such as Natural user interface (Device Verification), Motion gaming (Controller in VR), Sports and training analytics.
- ❖ **AI-based Sensor Drifts and Noises Remover:** this project uses deep learning technique to predict and estimate noises and drifts of the internal sensor on the smart phone. The internal sensors such as accelerometer, gyroscope and magnetometer are widely used in applications such as activity recognition and indoor localizations. However, the internal sensor always produce polluted data due to the unavoidable hardware drifts as well as external noises caused by motion and environment. These noises often limit the accuracy of activity recognition and indoor localizations. This project try to estimate sensor noises with deep learning technique and remove them by adding an appreciate compensation, the revised virtual sensor can work as a background service to provide clean the position data and support a wide range of position-awareness apps.

