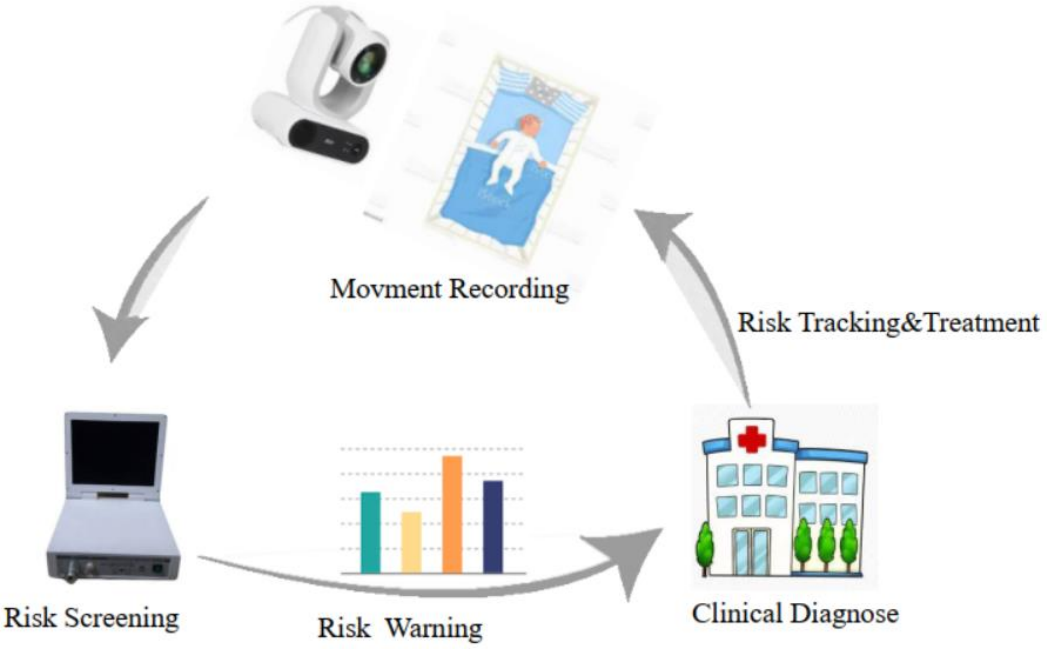
Infant's Neurodevelopmental Risk Detection

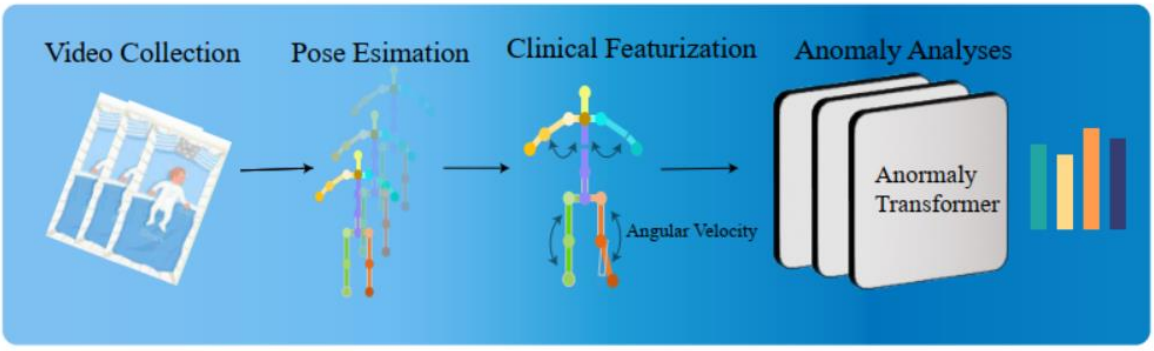
What is CP?

Cerebral palsy (CP) is usually caused by non-progressive brain damage in developing fetuses. **Early assessment** of the risk of cerebral palsy in high-risk children will help to take appropriate intervention measures before the pathological features of cerebral palsy manifest, which will help reduce the degree of disability of the children. **However, early assessment is a very difficult problem for clinical doctors.**

Diagnoses Tools

Our team established auxiliary quantitative tools for the baby's movement process to help doctor diagnoses, via a series of computer vision methods, e.g., pose estimation, few-shot action recognition and time-series anomaly detection. These tools can **locate** the parts of abnormal movements of the babies that born within 1 week to 40 weeks, providing **quantitative estimation** for doctors. The auxiliary diagnostic process can be described as follows:

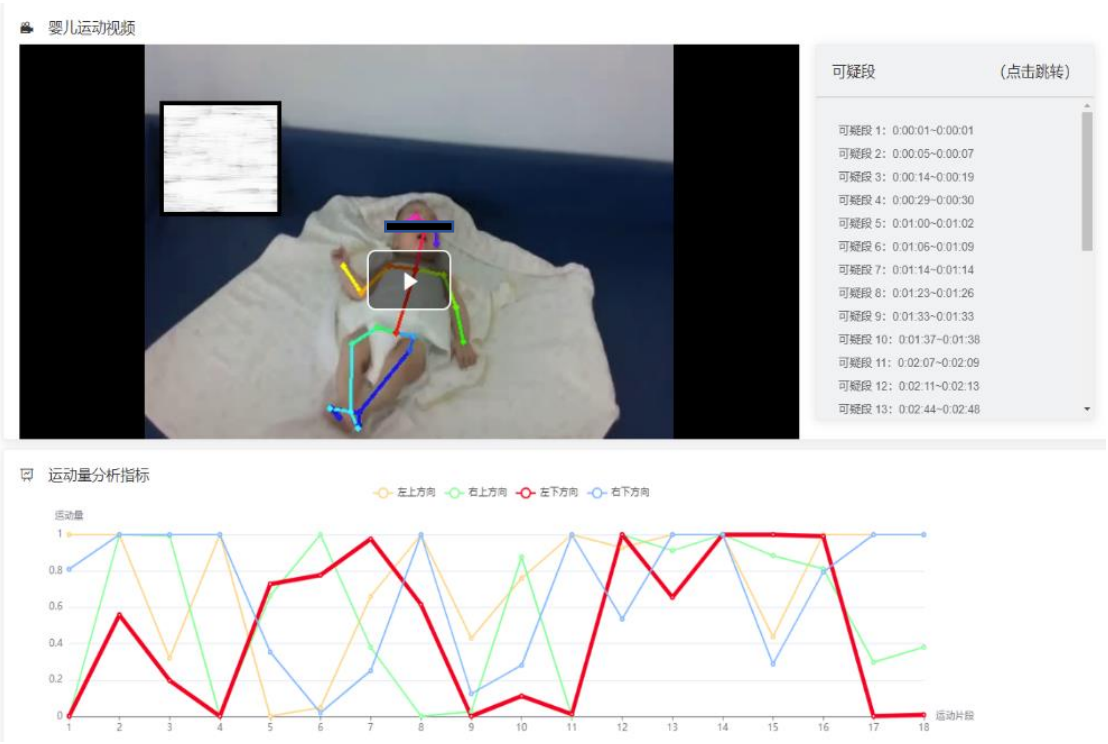




Access method

The website is now accessible via the local area network of Zhejiang University. Due to the high deployment cost with GPUs, we did not make it publicly accessible yet. Please sent us an email if you are interested in our project. The following is our Chinese version website for the Children's Affiliated Hospital of Zhejiang University:

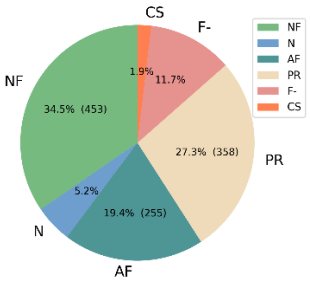
Login Page



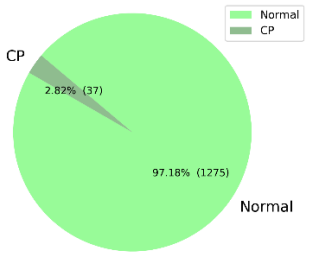
Report Page

Data Collection

We managed to collect nearly 1300 infant movement videos within 5 years, which might be the largest dataset for this risk detection task. All these videos are labeled with clinical GMs types and ultimate CP types:



GMs types



CP (abnormal) and Normal

Due to data privacy, these videos are not available for public, but the skeleton data will be open and only for research purposes.

About Our Teams

We are AI4Medical team at Eagle Lab of Zhejiang University. Here are the team members:

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