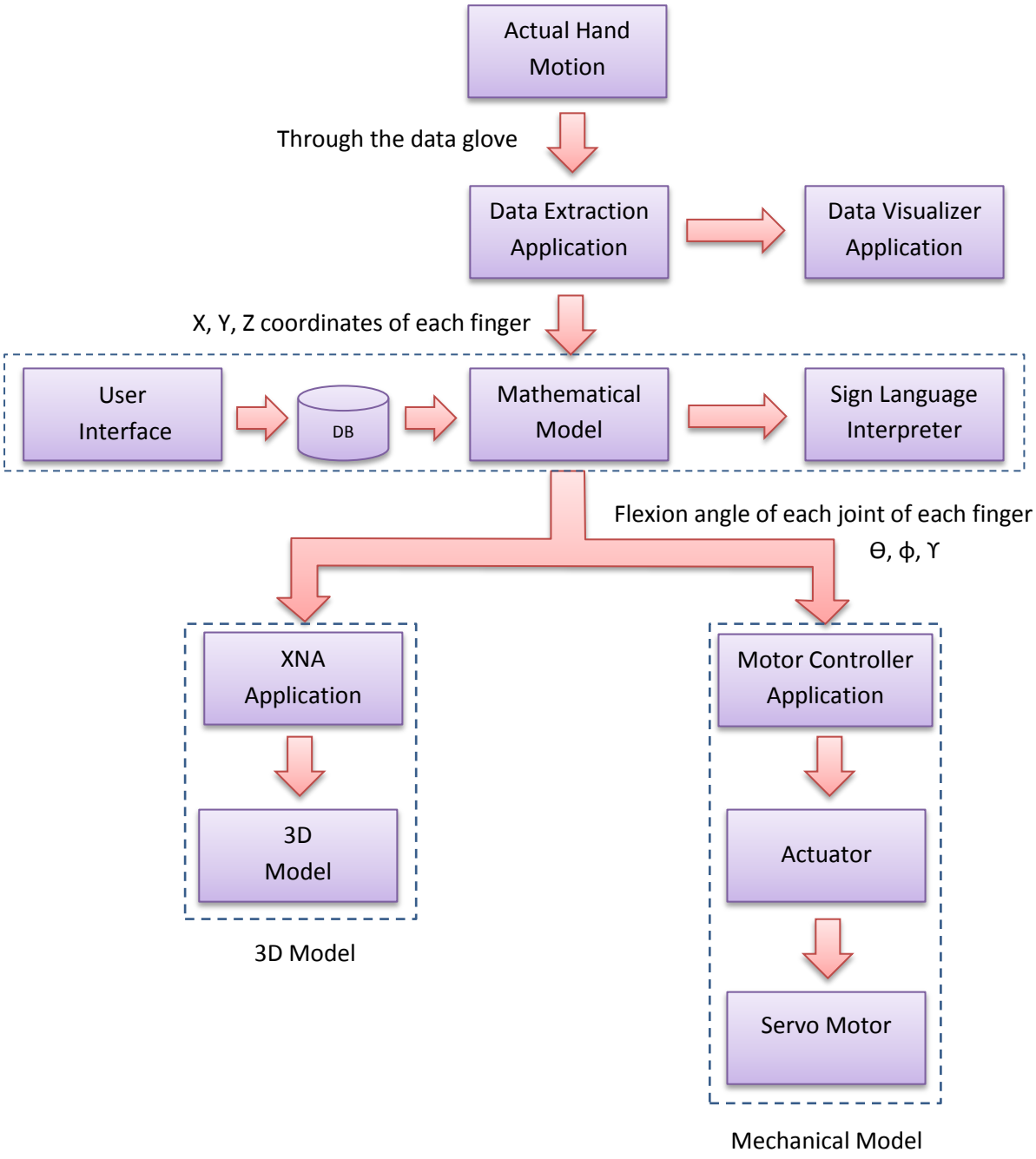
REAL TIME HUMAN GESTURE SIMULATION

PROJECT OVERVIEW



Human gesture Simulation

- The X, Y, Z coordinates of each finger for a given orientation of the hand are extracted through the data extraction application and the extracted values of coordinates will be input to the mathematical model.
- The mathematical model calculates the relevant flexion angles of each finger by using the given coordinate values.

- The calculated angles are input to the both motor controller application and XNA application for simulation.

Mechanical Model

- According to the relevant flexion angle, the motor controller application calculates the required pulse width of the pulse signal and sends it through an actuator to the servo motors.
- Finally the servo motors rotate to the relevant flex angle of a joint according to the pulse signal which is sent by the actuator.

3D Model

- XNA application forms the real time 3D animation of each joint of fingers and 3D model will works according to that calculated flex angles.

Sign Language Interpreter

- All the relevant parameter for a particular sign has been placed in a data base.
- The relevant parameters of a given text will be retrieved by the mathematical model calculates the corresponding flex angles of each joint of the fingers for that particular sign.
- The relevant gesture will be animated according to this calculated flex angles.