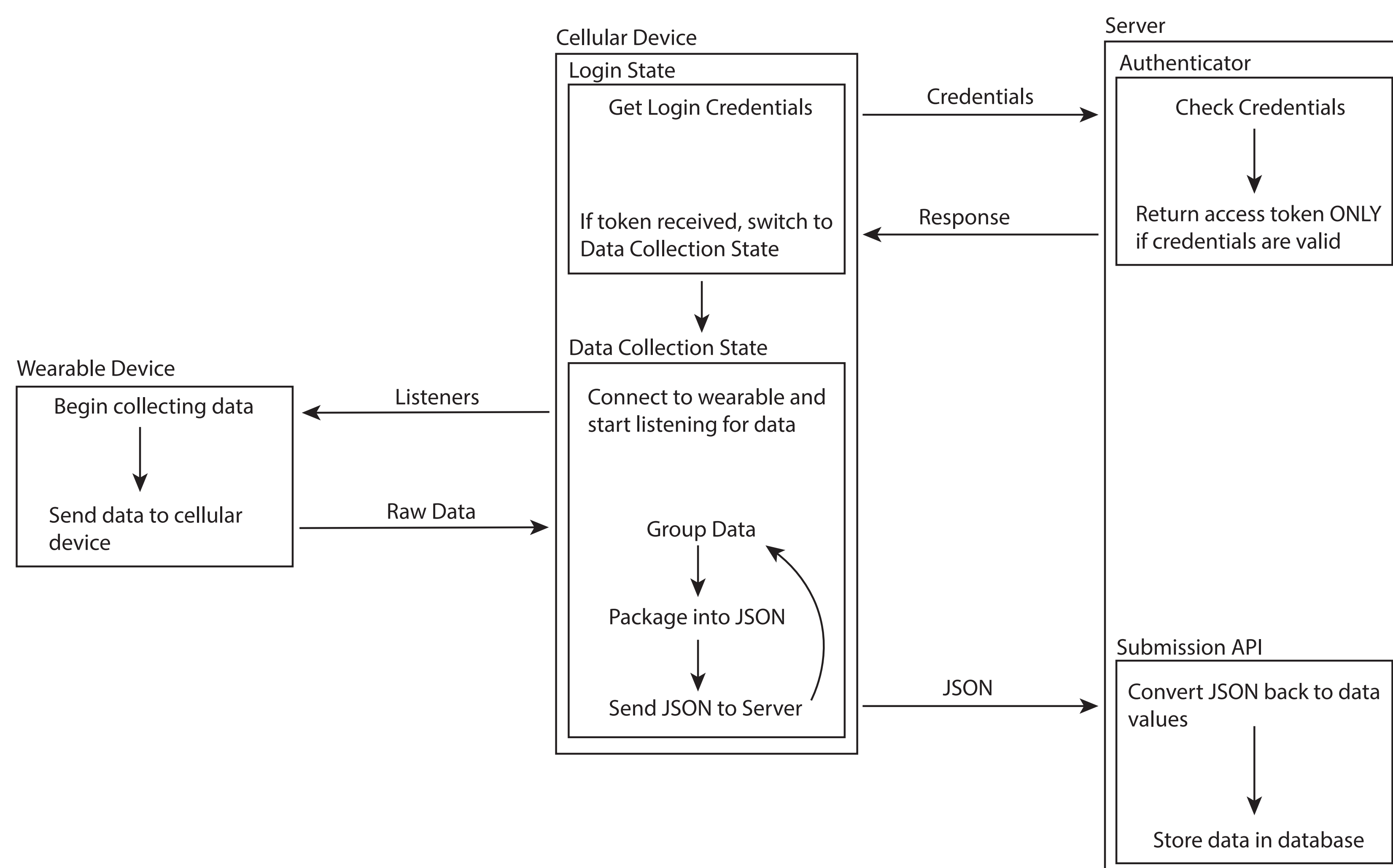# A System for Communication Between Wearable Devices and Cognitive Architectures

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Abstract:

This research proposes a system for communication between data gathering devices (smart watch and cell phone) and an external server. The purpose of the system is to act as a bridge for data between a smart watch and a personalized cognitive model that can be used to predict a user's emotional state. The proposed architecture is composed of a wearable device equipped with sensors to gather physiological data, a cellular-capable device that is capable of receiving data from the wearable, and a server that is accessible through the internet.

Implementation of Data Collection:

[1] Data is collected from a Microsoft Band 2 smartwatch, and sent over bluetooth to the Android device.

[2] The collected data is grouped by type and time stamp. This allows the data to be collected while sending fewer individual messages to the remote server.

[3] The collected and grouped data is periodically sent to a remote server using HTTP requests using the Android device's Wi-Fi/cellular data connection. This ensures that the user is not restricted to a given location or activity while data is being collected.

[4] A Node.js based server receives the packaged data and stores it in a MongoDB database.

Wearable Device   **Android Device**   **Server**

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