

MVP for Urological Care Sensing and Diagnosis

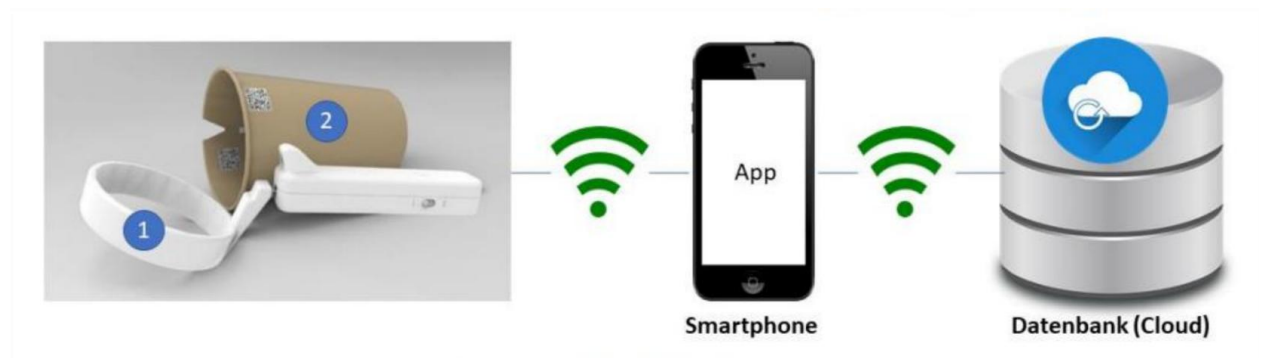
This device is designed for home urological care. It addresses the prevalent issue of benign prostatic hyperplasia (BPH) by enabling users to monitor their urine flow and detect biochemical markers indicative of urinary abnormalities. The device utilizes a urine cup and smartphone app interface to capture urine flow data and analyze biomarkers from urine test strips.

Hardware Development:

- Hardware and PCB design featuring ESP32, touch sensor, LED ring, camera interface, load cell, and IMU.
- Hardware user interface based on an RGB LED and touch sensor.

Firmware Development:

- ESP32 microcontroller for device control and data processing.
- Load cell and IMU sensors for urine flow measurement.
- Smartphone app interface for data visualization and analysis.
- Bluetooth low energy for wireless communication between the device and app.
- Cloud database integration for storing and analyzing captured data and images.



Applications:

- IOT
- Medical
- Research

Technologies Used:

- Arduino for firmware development on ESP32
- Flutter framework for app development
- Firebase for data management