



Image & Video Streaming Doorbell with Local Storage

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Background

There are similar products in the market like Ring or Google Nest that can help users monitor their house when they are away from home. However, privacy becomes a huge concern as these large companies always keep a copy of all the recorded videos or audios for AI training purpose. Thus, we aim to create a similar product with local private storage to avoid such concern.

Project Goal

- Proximity-based Detection
- Mobile and Web notifications
- Local database storage
- Facial Recognition
- User Entry log
- Realtime live video streaming
- End-to-end data Encryption

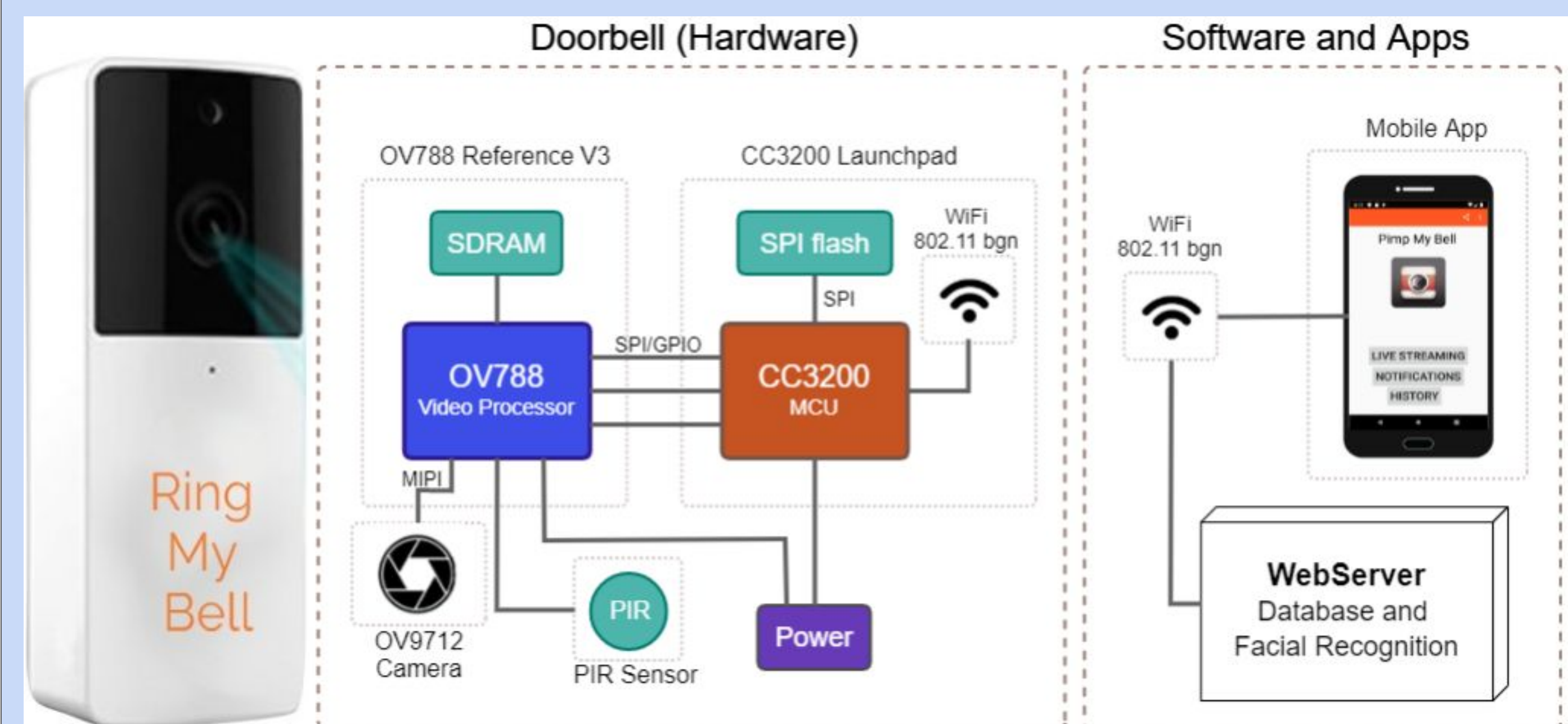
Progress

- Front-end design for the mobile application
- Ordered and received initial hardware
- Firmware setup for Microcontroller
- Set up the database and researched on encryption

Future Goals

- Back-end work for the mobile application
- Develop embedded program to capture/record images and send to app
- Database encryption
- Develop program for facial recognition

Product Structure



Materials: CC3200 MCU, OV788 video processor, OV9712 Camera, PIR sensor, Memory card, Chargeable battery.

Milestones

- Week 1-3:** Research on required SW/HW.
- Week 4-5:** Assemble & debug hardware. Start on mobile application.
- Week 6-7:** Embedded program (via TI SDK)
- Week 8-9:** Transmitting Video/Audio to Web server.
- Week 10:** Connecting web server and database.

Team structure

Mehdi Abbas: Embedded & Database
Mohammad Gagai: Mobile App & Facial Recognition
Abdullah Alasfar: Mobile App & Facial Recognition
Rui Ji: Embedded & Database

References

- [1] V. Singh, "Research In Cloud Security: Problems and Prospects," International Journal of Computer Science Engineering and Information Technology Research, pp. 1-10, Aug. 2013.
- [2] J. Fund, "How Much Do We Trust Alexa, Siri, Nest, and Ring — and Their Makers?," National Review, [Online], July. 2019.