Week 8: User Acceptance Test Plan

Nate Bachmeier

TIM-7241:Constructive Research Design

June 13, 2021

Northcentral University

# User Acceptance Test Plan

|  |  |
| --- | --- |
| Problem Statement | Many scenarios would benefit from artificial intelligence within the household.   * Monitoring children * Translating multi-lingual speech * House arrest supervision * Enhanced elderly/disabled care * Providing a health index |
| Purpose Statement | Design and implement a secure, reliable, and private system for recording and auditing the house. The system uses a collection of commodity IP cameras and Raspberry-PI controllers.  Users can interact with the system via mobile, Alexa/Google Home assistants. |
| What makes this study unique | There are four core reasons:   1. Purpose-built for home monitoring vs. generic home security 2. Existing tooling is mediocre, prohibitively expensive, and invasive (e.g., wearables) 3. Compares the performance of 3(?) different computer vision strategies 4. Uses a semantic metadata model to drive decisions versus raw content (ensuring privacy controls) |
| What is the value proposition | It takes a village to raise a family, and those resources are rarely available. The camera-based system provides those missing capabilities to smart houses (e.g., babysitting and translation) |
| Why should researchers and practitioners care | 1. Amazon Go proves that computer vision can replace low-skilled staff (e.g., cashiers). Now other smart offices are beginning to adopt those same technologies. 2. However, there is little adoption of home automation due to privacy, quality, and cost concerns. 3. Providing more insights into the lifestyle quality can improve morale and over family health |
| Provide evidence from the literature | See README.md |
| Why does the proposed item not yet exist | The current state of the art system is:   * Detail * Detail * Detail   However, these capabilities are still lacking   * Skill * Skill * Skill   This discrepancy exists because of   * Reason * Reason * Reason |
| How will you measure improvements |  |
| What are the core contributions to the body of knowledge | 1. Proposed system architecture for home monitoring and automation 2. Performance analysis of 3(?) different computer vision-based algorithms 3. Case-study spanning an individual house and its collective data |
| What artifacts will you produce | 1. Python-based implementation of an OpenCV Smarthome automation solution 2. Keras-based implementation of 3(?) video analysis algorithms 3. Quantitive description of the Qualitative metadata collection results |
| User Acceptance Testing | |
| How will you test the solution | The UAT needs to confirm   1. Meets User Requirements 2. Reliability, Validity, & Effectiveness 3. Security and Integrity |
| Include systems diagram |  |
| Explain the diagram and its components |  |
| Data Collection Process |  |
| Evaluation Process |  |