

1/21/20

Shopping Cart Video Notes

- Team Begins by doing research
 - Go into the field, talk to people directly involved
- Features by importance
 - 安全第一
 - 提升
 - 35 mph speeds in windy
- Once field research is done, reconvene & share findings
- Leadership is based on skills, not experience

1/27/20

Product Research

2 main products

1. WeWalk (\$499.99)

- Obstacle detection
- Bluetooth phone pairing
 - Navigation
 - change settings
- 5 hr battery
- 30 cm handle
- 252g handle

2. smart CANE

- Obstacle detection
- GPS Nav
- Object narration
 - items, friends, family, documents, etc
- Emergency contact button
- location sharing
- Light level & surface wetness detection

1/28/20

Interview with SDS

- Overhead obstacle detection
- Wayfinding
 - hard to determine exact space
 - uses apps to determine location in GPS, but that's another device
- wrong kind of feedback (audio NA, vibration)
- generally make cane too heavy
- Apple watch integration
- Giving more feedback about location
- Adjust verbosity/feedback for user
- Vibration alerts
 - Apple Watch's Taptic Feedback
 - Simple rhythmic taps, less cognitive taxing
 - Human CPU Interaction @ Rochester
 - Look around App
 - Uses internal gyroscope to determine direction

- Microsoft "Soundscape"

- Want to be safe & confident, not run into people/things
- Focus on a certain type
- Accessibility apps
 - iPhone (Voice Over) & Android (Talk Back) screen readers

2/4 meetings

P: issues

- Power management

- Power on/off somewhat slowly, risk of SD corruption

- Aggie Map has markers for many useful things

- Check slack, watch video

2/11 Proposals Day 1

Smart Lot

- unclear on user interaction
- unclear on software end
- Privacy concerns with camera
- ~~tracking~~ tracking all parking lot movement

Smart Cane

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Braille Converter

- awkward grammar
- visual aids needed

2/13 Presentations Day 2

Smart Thermometer

- Logging of private user data?

- Complicated Level 2 diagram

Cyber Security

- What is ICS?

- What is HMI?

- DAD? PLC?

- Too many acronyms

- Unclear on user interaction

2/25 Meeting

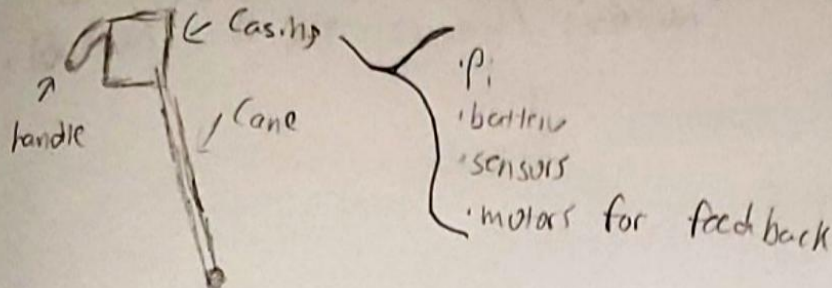
2/23/20
Kov

• Should be Pi cameras
& ultrasounds in storage

• set up dev environment, research software.

• Plan of action

Attachment / casing to place on any existing cane



• Account for constant 左右 movement of cane

- Outdoor

→ Accessible Friendly Navigation (Aggie Map)

→ Obstacle detection

• Overhead

• FOV detection



• Simple sensors take care of lower ground + above.

• Camera to provide extra/backup info + more detailed info other sensors can't provide

• Until hardware arrives,

- AggieMap

- Test phone camera on PVC pipe to simulate operating environment, take those images & plug into

object detection algorithms

- Build object detection algorithms

次回: • Test images

• Concrete ideas for app design/UI

• GPS Data not precise, find ways to narrow down

• Bring a chart of to-do's, at meeting can dot out responsibilities

2/27 Meetings

Hardware / component testing

Get Pi setup

Have ultrasonic, cameras, Pi, GPS module,
SD cards

9/3

Meeting (surprise)

- Get ~~Agg~~ Maps API, contact University to get it.
- GPS tech is accurate to ~3 m, this civilian limit unless we get real expensive
- Emergency Button
- Toggle buttons for feedback type
- Button to get current location

3/20

Stock of

My components

1x RPi

4x Cameras

2x basic

2x w/Lenses

3x Ultrasonic Sensors

1x GPS Module

2x Ribbon Cables

1x long

1x short

1x Pi power cable

4x SD cards

1x functional

3x broken

3/21

To-Do's This week

1. Component Testing
2. LDR
3. Extended bibliography
4. Meet with team to discuss roles for new quarantine construction

3/22 Post Spring Break Meeting + CDR Planning

- Ways to work around
- Only 1 set of hardware, new Quarantine means we can't all be together, only 1 can work on hardware at time.
- focus on software? Software alternatives?
- Expanded Bibliography Due 3/26 Midnight
- Upload CDR Powerpoint + Video by 3/24 Midnight
- CDR report due 3/31
- Test current components + battery life