
Protege Nos

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AI == 

From where

did we get the idea

A friend of mine is a volunteer for a disabled-student community, and we feel that their lives are not easy, so we intend to make a little contribution to the improvement of the lives of these underrepresented group.

Technological Implementation

Ruff

A JavaScript-based IoT Kit

- **Light Sensor**
 - Determine if the environment is dark
 - **LED**
 - To remind others that there is a blind man here
 - **Temperature & Humidity Sensor**
 - Feedback real-time temperature and humidity
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Arduino

A C-powered Microprocessor with
Optional Bluetooth Communication

- **Tracking module**
 - To detect whether or not the traveling route is offset
- **Avoid module**
 - To detect obstacles
- **Gyro module**
 - When the user falls, immediately send relevant information to the volunteer network

```
1. rap
bash
Ruff application started successfully.
Yiluo:alert show$ rap deploy -s
Sending stop command...
Ruff application stopped successfully.
Schematic Diagram for board 'ruff-mbd-v1':
light/vcc -> ruff-mbd-v1/vdd-0
light/gnd -> ruff-mbd-v1/gnd-0
light/i2c_SCL -> ruff-mbd-v1/i2c-0_SCL
light/i2c_SDA -> ruff-mbd-v1/i2c-0_SDA
button/vcc -> ruff-mbd-v1/vdd-1
button/gnd -> ruff-mbd-v1/gnd-1
button/gpio -> ruff-mbd-v1/gpio-11
luminature/vcc -> ruff-mbd-v1/vdd-2
luminature/gnd -> ruff-mbd-v1/gnd-18
luminature/gpio -> ruff-mbd-v1/gpio-18
RGB/vcc -> ruff-mbd-v1/vdd-3
RGB/gnd -> ruff-mbd-v1/gnd-3
RGB/pwm-r -> ruff-mbd-v1/pwm-0
RGB/pwm-g -> ruff-mbd-v1/pwm-1
RGB/pwm-b -> ruff-mbd-v1/pwm-2
buzzer/vcc -> ruff-mbd-v1/vdd-4
buzzer/gnd -> ruff-mbd-v1/gnd-4
buzzer/gpio -> ruff-mbd-v1/gpio-12
Preparing application package...
Deploying application package (127.5kB)...
Ruff application deployed successfully.
Sending start command...
Ruff application started successfully.
Yiluo:alert show$
num is 2,048 bytes.
const float N = 256;
```

/dev/cu.usbmodem1411 (Arduino/Genuino Uno)

Send

a/g/m:	7976	4736	-15828	-52	1527	-486	0	0	-32767	-128.00
a/g/m:	6592	5760	-11568	-4478	905	-4383	0	0	32257	126.00
a/g/m:	4076	5156	-14260	3209	4028	2625	0	0	-32767	-128.00
a/g/m:	4344	7016	-13740	-3184	-4717	-229	0	0	-32767	-128.00
a/g/m:	8864	1348	-17800	1705	-1763	543	0	0	-32255	-126.00
a/g/m:	5504	7580	-14196	3069	6009	2040	0	0	31745	124.00
a/g/m:	3172	4452	-13384	-1266	1533	-454	0	0	-32255	-126.00
a/g/m:	5564	4504	-17356	-2355	-8337	-3957	0	0	-32255	-126.00
a/g/m:	10196	5332	-16364	-3309	335	-3357	0	0	-32767	-128.00
a/g/m:	4464	6844	-14848	-4998	2982	605	0	0	32257	126.00
a/g/m:	8264	10284	-8720	-12873	7364	2057	0	0	-32767	-128.00
a/g/m:	7468	4348	-8132	-4824	4771	-5236	0	0	-32255	-126.00
a/g/m:	5752	4232	-11396	4172	-3306	-107	0	0	-31743	-124.00
a/g/m:	7600	7348	-18932	6692	2311	-1850	0	0	-31743	-124.00
a/g/m:	7200	7988	-13904	-4555	8616	7	0	0	-31743	-124.00
a/g/m:	2144	8596	-12168	2591	2343	2233	0	0	-32255	-126.00
a/g/m:	3232	9300	-13556	-3594	-4730	1492	0	0	-31231	-122.00
a/g/m:	7600	4336	-14656	1631	-3055	1955	0	0	-32255	-126.00
a/g/m:	4756	6720	-14752	7412	4346	8763	0	0	-30719	-120.00
a/g/m:	5348	5484	-15164	4841	3610	8	0	0	32257	126.00
a/g/m:	9212	8696	-15476	-1006	391	5782	0	0	31233	122.00
a/g/m:	5148	4816	-14500	4268	4557	-1111	0	0	29697	116.00
a/g/m:	4384	6012	-14672	5094	-5954	3577	0	0	27649	108.00
a/g/m:	6424	2884	-16504	-2261	-7476	-9081	0	0	-32767	-128.00
a/g/m:	3140	10564	-7832	24278	29017	-32768	0	1	26625	104.01
a/g/m:	10380	19496	4380	-10740	12918	-3681	0	8193	17921	102.01
a/g/m:	-19544	9836	18664	-18546	-5659	3769	0	15873	12801	112.01
a/g/m:	9104	5704	-13232	-177	144	26	0	0	29697	116.00
a/g/m:	8852	5792	-13376	-150	91	27	0	0	29697	116.00

☒ Autocroll

No line ending

115200 baud

Android

A data-gathering and Networking
Hub

- **Image Recognition**
 - Tell the blind what is in front of him/her
 - **Weather**
 - To get the real-time weather
 - **Text-to-Speech**
 - To increase accessibility for the disabled
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Technological Difficulties



Ruff Driver

- No experience for JavaScript.
- Limited amount of sensors compatible with Ruff.
- Hardware drivers.
- Special thanks to Ruff and its support team.

Android Text-To-Speech

Text-To-Speech is one of the most common-used accessibility options for disabled people. For their convenience, this project incorporates Android Text-To-Speech.

We attempted to use Xunfei Cloud for networked TTS engine but its documentation is so unfriendly that we have to drop it.

We moved to use Android's system Locale TTS Engine (Pico or Samsung as the two most common-seen).



Location-based Weather Service

The mobile application incorporates an online Weather API, OpenWeatherMap to retrieve current weather and forecasted weather.

To make the use of the app universal, the development take special account into determining the location of the user and provide weather information accordingly.

Future

Improvements after the
hackathon

- Communication between subsystems
- Platform + a network of NGO, volunteer groups, community centers and related local governmental authorities
- UI optimization → user-friendly.

All lives matter.

All lives deserve to be
happy.

A night-time photograph of a soccer game in progress on a grass field. A large, bright spotlight from above illuminates the center of the field, creating a strong contrast with the dark surroundings. Several players in various colored jerseys are visible, running across the field. The background is dark, with some distant lights visible on the horizon.

**The only team
with a millennium.**

Thank you.
