

Sensor Logger Apps



ONE-TAP DEVICE SENSOR LOGGER IN YOUR POCKET

WITH WATCH & HEART RATE LOGGING

Sensor Logger is an easy-to-use, beautifully designed data logger that logs readings from common sensors on your iPhone and Apple Watch — including accelerometer, gyroscope, GPS,

allows you to select your desired sensors. A simple tap of a button initiates the recording function, which records within the app via interactive plots. The export functionality conveniently outputs your recordings in various formats. For more advanced use cases, you may also stream data via HTTP during a recording session.

Sensor Logger

Kelvin Tsz Hei Choi
In-app purchases

4.9★
153 reviews 10K+ Downloads Rated for 3+

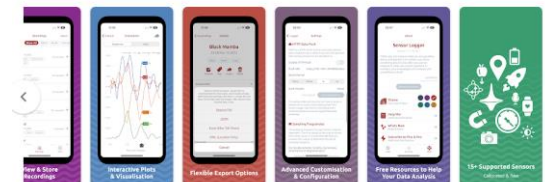
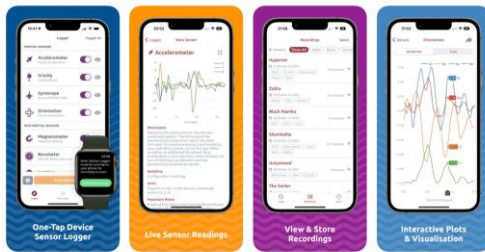
Install on more devices

This app is available for all of your devices. You can share this with your family. [Learn more about Family Library.](#)



Sensor Logger
Motion Logger with CSV Export
Choi Tsz Hei
★★★★★ 4.9 (20 ratings)
Free - Offers In-App Purchases

Screenshots [iPhone](#) [Apple Watch](#)



울산대학교
UNIVERSITY OF ULSAN

Choose sensors

- accelerometer, gyroscope, magnetometer

Logger

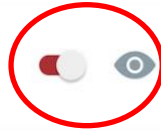
Toggle All

INERTIAL SENSORS



Accelerometer

Linear Acceleration



Gravity

Gravity Vector



Gyroscope

Rotation Rate



Orientation

Device Orientation



NON-INERTIAL SENSORS



Magnetometer

Magnetic Heading



Location



Start Recording

Sampling frequency setting

The image shows a mobile application interface with two main panels. The left panel, titled 'Logger', has a 'Toggle All' button and lists sensors under 'INERTIAL SENSORS' (Accelerometer, Gravity, Gyroscope, Orientation) and 'NON-INERTIAL SENSORS' (Magnetometer, Location). At the bottom is a green 'Start Recording' button with a gear icon circled in red. The right panel, titled 'Settings', shows 'Sampling Frequencies' for various sensors. The 'Sample Up to 100 Hz' option for Accelerometer, Gravity, Gyroscope, Orientation & Magnetometer is circled in red. A red arrow points from the gear icon in the 'Start Recording' button to this circled option.

Logger Toggle All

INERTIAL SENSORS

- Accelerometer**
Linear Acceleration
- Gravity**
Gravity Vector
- Gyroscope**
Rotation Rate
- Orientation**
Device Orientation

NON-INERTIAL SENSORS

- Magnetometer**
Magnetic Heading
- Location**

Settings

Sampling Frequencies

Rate may be slower than these values. It is recommended that you examine the output to determine the actual sampling frequency.

For Accelerometer, Gravity, Gyroscope, Orientation & Magnetometer

Sample Up to 100 Hz

For Barometer

Sample as Frequently as Possible

For Location

Sample Once Every 10 Minutes

For Camera

Once Every 10 Seconds



Export, Share & Restore



^ May cause performance issues on slower devices. Setting the image quality to 'Lowest' may help.



Date recording start and end



Logger Toggle All

INERTIAL SENSORS



 **Accelerometer**
Linear Acceleration ☒ 



 **Gravity**
Gravity Vector ☐ 


 **Gyroscope**
Rotation Rate ☒ 

 **Orientation**
Device Orientation ☐ 

NON-INERTIAL SENSORS


 **Magnetometer**
Magnetic Heading ☒ 


 **Location** ☐ 


 **Start Recording**


Logger

INERTIAL SENSORS


 **Accelerometer**
Linear Acceleration every 0.01s

 **Gravity**
Gravity Vector disabled


 **Gyroscope**
Rotation Rate every 0.01s

 **Orientation**
Device Orientation disabled

NON-INERTIAL SENSORS

 **Magnetometer**
Magnetic Heading every 0.01s

 **Location** disabled

 **End Recording (7 seconds)**

Data export

The screenshot shows the 'Recordings' app interface. At the top, there are three icons: 'Logger', 'Recordings' (circled in red), and 'About'. Below the 'Recordings' icon is a red arrow pointing down to the 'Recordings' section. The 'Recordings' section has a title 'Recordings' and a 'Select' button. Below this is a list of recordings under the 'Newest' filter. The first recording is '11:02 May 15' with a duration of '20.4 seconds' and a right arrow. A red arrow points from this right arrow to the 'Export' button in the 'Untitled Recording' screen. The 'Export' button is circled in red. Below the 'Export' button is a list of file formats: 'CSV in Zip File' (selected), 'JSON', 'Excel Sheets' (marked 'Plus & Pro'), and 'KML' (marked 'Plus & Pro'). A red arrow points from the 'KML' option to the 'Export Recording' button at the bottom, which is also circled in red.

파일 선택

Recordings

Select

◆ Newest

11:02 May 15 20.4 seconds →

Untitled Recording

10:40 May 15 10.8 seconds →

Untitled Recording

Untitled Recording

11:02 May 15 2023

Rename Tags Export Delete

Accelerometer →

Annotation →

Gyroscope →

Magnetometer →

Total Acceleration →

File Format

CSV in Zip File

✓ Export all data to CSV files, one per sensor, and packages them into a single zip file.

JSON

○ Packages data into a single json file, but does not include audio or images, if any.

Excel Sheets Plus & Pro

○ Export all data to an Excel file. Maximum of 10K rows per sensor, organised into multiple worksheets.


KML Plus & Pro

○ Export GPS data to a KML file. Only location data is exported, and only if the GPS sensor is enabled.

Export Recording

생성된 csv 파일

- CSV(comma-separated values) file
- unit: acceleration (m/s²), gyroscop(e) (rad/s), magnetic(mT)
- iphone might be different

 Accelerometer.csv

 Annotation.csv

 Gyroscope.csv

 Magnetometer.csv

 Metadata.csv

 TotalAcceleration.csv

순서조심: z, y, x 순

	A	B	C	D	E	F	G
1	time	seconds_e	z	y	x		
2	1.68E+18	0.201633	9.783953	-0.05294	0.077169		
3	1.68E+18	0.21163	9.87488	-0.05533	0.079561		
4	1.68E+18	0.221627	9.85813	-0.03619	0.077169		
5	1.68E+18	0.231624	9.843773	-0.04576	0.081954		
6	1.68E+18	0.241621	9.850952	-0.03619	0.079561		
7	1.68E+18	0.251705	9.85813	-0.05055	0.074776		
8	1.68E+18	0.261702	9.853345	-0.03619	0.060419		
9	1.68E+18	0.271699	9.84138	-0.03858	0.062812		
10	1.68E+18	0.281741	9.836595	-0.04098	0.08674		
11	1.68E+18	0.291737	9.850952	-0.03858	0.084347		

Csv 파일 reading

```
filename1 = "D:\lecture\설계과제(23-학부-1)\matlab\";  
filename2 = "2023-05-15_01-40-51";  
  
file_acc = strcat(filename1,filename2,"\\", "TotalAcceleration.csv");  
file_gyro = strcat(filename1,filename2,"\\", "Gyroscope.csv");  
file_mag = strcat(filename1,filename2,"\\", "Magnetometer.csv");  
  
a = readmatrix(file_acc, 'Range',[2 2]);  
b = readmatrix(file_gyro, 'Range',[2 2]);  
c = readmatrix(file_mag, 'Range',[2 2]);
```

a (가속도계 데이터)

0.2016	0.2116	0.2216	0.2316	0.2416	time
9.7840	9.8749	9.8581	9.8438	9.8510	z
-0.0529	-0.0553	-0.0362	-0.0458	-0.0362	y
0.0772	0.0796	0.0772	0.0820	0.0796	x

ya(accelerometer), yg(gyroscope),ym(magnetic)

- Interpolation for magnetic sensor

```
start_index = min(find(a(1,:) > c(1,1)));
end_index = max(find(a(1,:) < c(1,end)));

tt = a(1,start_index:end_index);
ya = a(4:-1:2,start_index:end_index);
yg = b(4:-1:2,start_index:end_index);

N = end_index - start_index + 1;

ym = zeros(3,N);
for i = 1:N
    j = max(find(c(1,:) < tt(i)));
    t1 = tt(i) - c(1,j);
    t2 = c(1,j+1) - tt(i);
    ym(:,i) = (t2 / (t1+t2)) * c(4:-1:2,j) + (t1 / (t1+t2)) * c(4:-1:2,j+1);
end
```