

Sensing Venice

Mobile Sensing Data Set Collection
Edition 1.0, February 2014

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This is the documentation for Sensing Venice — Mobile Sensing Data Set Collection. The current documentation is Edition 1.0, last updated 3 February 2014 of the Sensing Venice Data Set Collection, version 1.0. For the newest version of the data and its documentation available, check the version information on authors data page at <http://users.ics.aalto.fi/jhollmen/Data/>.

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Send bug reports and suggestions to Jaakko.Hollmen@aalto.fi.

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1 Introduction

You are reading the documentation of Sensing Venice — Mobile Sensing Data Set Collection, distributed openly in the hope that researchers working in the field would explore and solve the challenges identified in the accompanying paper (Zliobaite and Hollmen, 2014).

Sensing Venice — Mobile Data Set Collection is a subset of data recorded between July 8, 2013 and July 12, 2013 in Venice, Italy. The data has been recorded with the help of ContextLogger software, developed on top of Funf open-sensing framework.

The reader is referred to the (Zliobaite, Hollmen, 2014) paper published in the Mining Urban data workshop in March 2014 for a detailed description on the challenges identified in preprocessing mobile sensing data.

2 Data Sets

Sensing Venice is a collection of mobile sensing data, recorded during a five day visit to Venice, Italy. The exact period is from July, 8, 2013 19:00 to July 12, 2013 12:00. It is distributed as open data to researchers in the hope that it stimulates researchers to take a look at the identified challenges and open questions identified in (Zliobaite and Hollmen, 2014).

The Sensing Venice package is contained in a file ‘`sensing-venice-1.0.tar.gz`’, which is a compressed archive of files, available at page <http://users.ics.aalto.fi/jhollmen/Data/>. You should uncompress the gzipped tar file with the commands

```
~ % gunzip sensing-venice.tar.gz
~ % tar xvf sensing-venice.tar
```

After uncompressing, you will have a directory ‘`sensing-veince/`’ created for you. Enter the created directory ‘`sensing-veince`’ with the command `cd sensing-veince/` and you should see the list of following files:

```
AccelerometerSensorProbe.csv
AndroidInfoProbe.csv
BatteryProbe.csv
BluetoothProbe.csv
CellProbe.csv
HardwareInfoProbe.csv
LocationProbe.csv
MagneticFieldSensorProbe.csv
OrientationSensorProbe.csv
RunningApplicationsProbe.csv
WifiProbe.csv
org.sizzlelab.contextlogger.android.CustomProbe.ApplicationProbe.csv
org.sizzlelab.contextlogger.android.io.MainPipeline.csv
```

The contents of each file will be described in the next chapter. In all, Sensing Venice — Mobile Data Set Collection contains roughly 1.5 million timestamped records.

3 Column descriptions

The individual files contain the sensor modalities named in the filename. This is not a precise documentation for the data contents, a more detailed description of the logged data can be found in the Funf open-sensing framework documentation (Aharony et al., 2011) and on the Funf open-sensing framework page at <http://funf.org/>.

The following listing indicates the lines of data in each data file:

```

1035122 AccelerometerSensorProbe.csv
    4 AndroidInfoProbe.csv
2421 BatteryProbe.csv
    595 BluetoothProbe.csv
    275 CellProbe.csv
    4 HardwareInfoProbe.csv
5471 LocationProbe.csv
240238 MagneticFieldSensorProbe.csv
234028 OrientationSensorProbe.csv
    1 RunningApplicationsProbe.csv
23718 WifiProbe.csv
    41 org.sizzlelab.contextlogger.android.CustomProbe.ApplicationProbe.csv
    1 org.sizzlelab.contextlogger.android.io.MainPipeline.csv
1541919 total

```

File ‘AccelerometerSensorProbe.csv’ has the following columns:

```

1 id
2 device
3 timestamp
4 ACCURACY
5 EVENT_TIMESTAMP
6 SENSOR_MAXIMUM_RANGE
7 SENSOR_NAME
8 SENSOR_POWER
9 SENSOR_RESOLUTION
10 SENSOR_TYPE
11 SENSOR_VENDOR
12 SENSOR_VERSION
13 X
14 Y
15 Z

```

File ‘AndroidInfoProbe.csv’ has the following columns:

```

1 id
2 device
3 timestamp
4 BUILD_NUMBER
5 FIRMWARE_VERSION
6 SDK

```

File ‘BatteryProbe.csv’ has the following columns:

```

1 id
2 device
3 timestamp
4 health
5 icon-small
6 invalid_charger
7 level
8 plugged

```

- 9 present
- 10 scale
- 11 status
- 12 technology
- 13 temperature
- 14 voltage

File 'BluetoothProbe.csv' has the following columns:

- 1 id
- 2 device
- 3 timestamp
- 4 DEVICES_android.bluetooth.device.extra.CLASS_mClass
- 5 DEVICES_android.bluetooth.device.extra.DEVICE_mAddress
- 6 DEVICES_android.bluetooth.device.extra.NAME
- 7 DEVICES_android.bluetooth.device.extra.RSSI

File 'CellProbe.csv' has the following columns:

- 1 id
- 2 device
- 3 timestamp
- 4 cid
- 5 lac
- 6 psc
- 7 type

File 'HardwareInfoProbe.csv' has the following columns:

- 1 id
- 2 device
- 3 timestamp
- 4 ANDROID_ID
- 5 BLUETOOTH_MAC
- 6 BRAND
- 7 DEVICE_ID
- 8 MODEL
- 9 WIFI_MAC

File 'LocationProbe.csv' has the following columns:

- 1 id
- 2 device
- 3 timestamp
- 4 LOCATION_mAccuracy
- 5 LOCATION_mAltitude
- 6 LOCATION_mBearing
- 7 LOCATION_mDistance
- 8 LOCATION_mExtras_networkLocationSource
- 9 LOCATION_mExtras_networkLocationType
- 10 LOCATION_mHasAccuracy
- 11 LOCATION_mHasAltitude
- 12 LOCATION_mHasBearing
- 13 LOCATION_mHasSpeed
- 14 LOCATION_mInitialBearing
- 15 LOCATION_mLat1
- 16 LOCATION_mLat2
- 17 LOCATION_mLatitude

```
18 LOCATION_mLon1
19 LOCATION_mLon2
20 LOCATION_mLongitude
21 LOCATION_mProvider
22 LOCATION_mResults
23 LOCATION_mSpeed
24 LOCATION_mTime
```

File 'MagneticFieldSensorProbe.csv' has the following columns:

```
1 id
2 device
3 timestamp
4 ACCURACY
5 EVENT_TIMESTAMP
6 SENSOR_MAXIMUM_RANGE
7 SENSOR_NAME
8 SENSOR_POWER
9 SENSOR_RESOLUTION
10 SENSOR_TYPE
11 SENSOR_VENDOR
12 SENSOR_VERSION
13 X
14 Y
15 Z
```

File 'OrientationSensorProbe.csv' has the following columns:

```
1 id
2 device
3 timestamp
4 ACCURACY
5 AZIMUTH
6 EVENT_TIMESTAMP
7 PITCH
8 ROLL
9 SENSOR_MAXIMUM_RANGE
10 SENSOR_NAME
11 SENSOR_POWER
12 SENSOR_RESOLUTION
13 SENSOR_TYPE
14 SENSOR_VENDOR
15 SENSOR_VERSION
```

File 'RunningApplicationsProbe.csv' has the following columns:

```
1 id
2 device
3 timestamp
4 RUNNING_TASKS_baseActivity_mClass
5 RUNNING_TASKS_baseActivity_mPackage
6 RUNNING_TASKS_id
7 RUNNING_TASKS_numActivities
8 RUNNING_TASKS_numRunning
9 RUNNING_TASKS_topActivity_mClass
10 RUNNING_TASKS_topActivity_mPackage
```


File ‘WifiProbe.csv’ has the following columns:

```
1 id
2 device
3 timestamp
4 SCAN_RESULTS_BSSID
5 SCAN_RESULTS_SSID
6 SCAN_RESULTS_capabilities
7 SCAN_RESULTS_frequency
8 SCAN_RESULTS_level
```

File ‘org.sizzlelab.contextlogger.android.CustomProbe.ApplicationProbe.csv’ has the following columns:

```
1 id
2 device
3 timestamp
4 APPLICATION_ACTION
5 APPLICATION_DATA
```

File ‘org.sizzlelab.contextlogger.android.io.MainPipeline.csv’ has the following columns:

```
1 id
2 device
3 timestamp
4 configUpdatePeriod
5 configUpdateUrl
6 dataArchivePeriod
7 dataRequests_edu.mit.media.funf.probe.builtin.AccelerometerSensorProbe_DURATION
8 dataRequests_edu.mit.media.funf.probe.builtin.AccelerometerSensorProbe_PERIOD
9 dataRequests_edu.mit.media.funf.probe.builtin.ActivityProbe_DURATION
10 dataRequests_edu.mit.media.funf.probe.builtin.ActivityProbe_PERIOD
11 dataRequests_edu.mit.media.funf.probe.builtin.AndroidInfoProbe_PERIOD
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13 dataRequests_edu.mit.media.funf.probe.builtin.BluetoothProbe_PERIOD
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17 dataRequests_edu.mit.media.funf.probe.builtin.GyroscopeSensorProbe_DURATION
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36 dataUploadPeriod
37 dataUploadUrl
38 name
39 version
```

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