Package 'PurpleAirAPI'

November 26, 2024

Type Package

Title Historical Data Retrieval from 'PurpleAir' Sensors via API

Version 0.1.0

Description Provides tools for retrieving and analyzing air quality data
from 'PurpleAir' sensors through their API. Functions enable downloading
historical measurements, accessing sensor metadata, and managing API
request limitations through chunked data retrieval. For more information
about the 'PurpleAir' API, see <https://api.purpleair.com/>.

License MIT + file LICENSE

URL https://github.com/heba-razzak/PurpleAirAPI

Imports httr, jsonlite

Suggests knitr, rmarkdown, testthat (>= 3.0.0)

VignetteBuilder knitr

Config/testthat/edition 3

Encoding UTF-8

RoxygenNote 7.3.1

NeedsCompilation no

Author Heba Abdelrazzak [aut, cre]

Maintainer Heba Abdelrazzak <hebaarazzak@gmail.com>

Repository CRAN

Date/Publication 2024-11-26 12:40:05 UTC

Contents

---

getPurpleairSensors *getPurpleairSensors*

Description

Retrieves data from PurpleAir sensors based on specified fields.

Usage

```
getPurpleairSensors(
  apiReadKey = NULL,
  fields = c("latitude", "longitude", "date_created", "last_seen")
)
```

Arguments

apiReadKey	API key for accessing the PurpleAir API.
fields	Vector specifying the fields to retrieve from PurpleAir API.
	Default: c("latitude", "longitude", "date_created", "last_seen")

Details

Available fields:

Station Information and Status	name, icon, model, hardware, location_type, private, latitude, longitude, altitude, positio
Environmental	humidity, humidity_a, humidity_b, temperature, temperature_a, temperature_b, pressure
Miscellaneous	voc, voc_a, voc_b, ozone1, analog_input
PM1.0	pm1.0, pm1.0_a, pm1.0_b, pm1.0_atm, pm1.0_atm_a, pm1.0_atm_b, pm1.0_cf_1, pm1.
PM2.5	pm2.5_alt, pm2.5_alt_a, pm2.5_alt_b, pm2.5, pm2.5_a, pm2.5_b, pm2.5_atm, pm2.5_at
Visibility	scattering_coefficient, scattering_coefficient_a, scattering_coefficient_b, deciviews, deci
Particle Count	0.3_um_count, 0.3_um_count_a, 0.3_um_count_b, 0.5_um_count, 0.5_um_count_a, 0.5
ThingSpeak	primary_id_a, primary_key_a, secondary_id_a, secondary_key_a, primary_id_b, primar

Value

A data frame containing the required fields for all PurpleAir sensors

References

For more details on the available fields, see the PurpleAir API documentation: [https://api.](https://api.purpleair.com/#api-sensors-get-sensors-data) [purpleair.com/#api-sensors-get-sensors-data](https://api.purpleair.com/#api-sensors-get-sensors-data)

Examples

```
## Not run:
# Get sensor data with default fields
sensors <- getPurpleairSensors(apiReadKey = "YOUR_API_KEY")

# Get sensor data with custom fields
sensors <- getPurpleairSensors(
  apiReadKey = "YOUR_API_KEY",
  fields = c("latitude", "longitude", "date_created", "last_seen",
   "location_type")
)

## End(Not run)
```

---

getSensorHistory   *getSensorHistory*

Description

Download historical data for PurpleAir sensors using API.

Usage

```
getSensorHistory(
  sensorIndex = NULL,
  apiReadKey = NULL,
  startDate = NULL,
  endDate = NULL,
  average = NULL,
  fields = NULL
)
```

Arguments

sensorIndex	PurpleAir sensor's index.
apiReadKey	PurpleAir API read key.
startDate	Date of the first required history entry.
endDate	Date of the history to return. Uses end of date specified.
average	The desired average in minutes: 0, 10, 30, 60, 360, 1440, 10080, 43200, 525600
fields	The 'sensor data fields' to include in the response.

Details

Available fields:

`Station Information and Status`	hardware*, latitude*, longitude*, altitude*, firmware_version*, private, rssi, uptime, pa_
`Environmental`	humidity, humidity_a, humidity_b, temperature, temperature_a, temperature_b, pressure
`Miscellaneous`	voc, voc_a, voc_b, analog_input
`PM1.0`	pm1.0_atm, pm1.0_atm_a, pm1.0_atm_b, pm1.0_cf_1, pm1.0_cf_1_a, pm1.0_cf_1_b
`PM2.5`	pm2.5_alt, pm2.5_alt_a, pm2.5_alt_b, pm2.5_atm, pm2.5_atm_a, pm2.5_atm_b, pm2.5_
`PM10.0`	pm10.0_atm, pm10.0_atm_a, pm10.0_atm_b, pm10.0_cf_1, pm10.0_cf_1_a, pm10.0_cf
`Visibility`	scattering_coefficient, scattering_coefficient_a, scattering_coefficient_b, deciviews, deci
`Particle Count`	0.3_um_count, 0.3_um_count_a, 0.3_um_count_b, 0.5_um_count, 0.5_um_count_a, 0.5

Value

Dataframe of PurpleAir history data of one or multiple sensors.

References

For more details on the available fields, see the PurpleAir API documentation: https://api.purpleair.com/#api-sensors-get-sensor-history-csv

Examples

```
## Not run:
# Download hourly PM2.5 data for one month
history <- getSensorHistory(
  sensorIndex = c(6127, 9014, 3124),
  apiReadKey = "YOUR_API_KEY",
  startDate = "2024-01-01",
  endDate = "2024-01-31",
  average = 60,
  fields = c("pm2.5_alt", "temperature", "humidity")
)

## End(Not run)
```

Index