# Package 'PurpleAir'

October 8, 2024

**Title** Query the 'PurpleAir' Application Programming Interface

**Version** 1.0.1

**Description** Send requests to the 'PurpleAir' Application Programming Interface (API; <https://community.purpleair.com/c/data/api/18>). Check a 'PurpleAir' API key and get information about the related organization. Download real-time data from a single 'PurpleAir' sensor or many sensors by sensor identifier, geographical bounding box, or time since modified. Download historical data from a single sensor.

**License** MIT + file LICENSE

**Encoding** UTF-8

**RoxygenNote** 7.3.2

**Suggests** sf, testthat (>= 3.0.0)

**Config/testthat/edition** 3

**URL** <https://github.com/cole-brokamp/PurpleAir>

**BugReports** <https://github.com/cole-brokamp/PurpleAir/issues>

**Imports** httr2, purrr, tibble, rlang, cli, dplyr, glue

**NeedsCompilation** no

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**Repository** CRAN

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check_api_key                    *Check Purple Air API Key*

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**Description**

Use the PurpleAir API to validate your Purple Air API Key. Find more details on this function at https://api.purpleair.com/#api-keys-check-api-key. Storing your key in the environment variable `PURPLE_AIR_API_KEY` is safer than storing it in source code and is used by default in each PurpleAir function.

**Usage**

```
check_api_key(purple_air_api_key = Sys.getenv("PURPLE_AIR_API_KEY"))
```

**Arguments**

purple_air_api_key
                    A character that is your PurpleAir API `READ` key

**Value**

If the key is valid, a message is emitted and the input is invisibly returned; invalid keys will throw an R error which utilizes information from the underlying http error to inform the user.

**See Also**

get_organization_data

**Examples**

```
## Not run:
check_api_key()
try(check_api_key("foofy"))

## End(Not run)
```

---

get_organization_data  *Get Organization Data*

---

**Description**

Use the PurpleAir API to retrieve information for the organization containing the provided api_key Find more details on this function at https://api.purpleair.com/#api-organization-get-organization-data

## Usage

```
get_organization_data(purple_air_api_key = Sys.getenv("PURPLE_AIR_API_KEY"))
```

## Arguments

```
purple_air_api_key
```
     A character that is your PurpleAir API READ key

## Value

A list of organization info

## See Also

check_api_key

## Examples

```
## Not run:
get_organization_data()

## End(Not run)
```

---

  get_sensors_data    *Get Sensors Data*

---

## Description

Retrieves the latest data of multiple sensors matching the provided parameters. Find more details on sensor fields at https://api.purpleair.com/#api-sensors-get-sensors-data.

## Usage

```
get_sensors_data(
  x,
  fields,
  location_type = c("both", "inside", "outside"),
  max_age = as.integer(604800),
  purple_air_api_key = Sys.getenv("PURPLE_AIR_API_KEY"),
  read_keys = NULL
)
```

## Arguments

| | |
|---|---|
| x | an input object used to define multiple sensors: |

> - an integer (or numeric or character) vector will select sensors based on `sensor_index` (API: `show_only`)
> - a st_bbox object will select sensors geographically (API: `nwlat`, `nwlon`, `selat`, `selon`)
> - a POSIXct object will select sensors modified since the given time (API: `modified_since`)

| | |
|---|---|
| fields | A character vector of which 'sensor data fields' to return |
| location_type | character; restrict to only "outside" or "inside" sensors (Outside: 0, Inside: 1) |
| max_age | integer; filter results to only include sensors modified or updated within the last number of seconds |
| purple_air_api_key | |
| | Your PurpleAir API READ key |
| read_keys | A character vector of keys required to read data from private devices |

## Value

A list of sensor data, named by the provided `fields`

## See Also

get_sensor_data

## Examples

```
## Not run:
# get sensors data by integer, numeric, or character vector of `sensor_index`
get_sensors_data(
  x = as.integer(c(175257, 175413)),
  fields = c("name", "last_seen", "pm2.5_cf_1", "pm2.5_atm")
)
get_sensors_data(
  x = c(175257, 175413),
  fields = c("name", "last_seen", "pm2.5_cf_1", "pm2.5_atm")
)
get_sensors_data(
  x = c("175257", "175413"),
  fields = c("name"), location_type = "outside"
)
# get sensors by bounding box around Hamilton County, OH
sf::st_bbox(c("xmin" = -84.82030, "ymin" = 39.02153,
              "xmax" = -84.25633, "ymax" = 39.31206),
            crs = 4326) |>
  get_sensors_data(fields = c("name"))
# sensors modified in the last 60 seconds
get_sensors_data(as.POSIXct(Sys.time()) - 60, fields = "name")

## End(Not run)
```

---

get_sensor_data *Get Sensor Data*

---

**Description**

Retrieves the latest data of a single sensor matching the provided sensor_index. Find more details on sensor fields at https://api.purpleair.com/#api-sensors-get-sensor-data.

**Usage**

```
get_sensor_data(
  sensor_index,
  fields,
  purple_air_api_key = Sys.getenv("PURPLE_AIR_API_KEY"),
  read_key = NULL
)
```

**Arguments**

| | |
|---|---|
| sensor_index | Integer (or numeric, character object coerceable to integer) sensor_index |
| fields | A character vector of which 'sensor data fields' to return |
| purple_air_api_key | |
| | A character that is your PurpleAir API READ key |
| read_key | A character key required to read data from private devices |

**Value**

A list of sensor data, named by the provided fields

**See Also**

get_sensors_data get_sensor_history

**Examples**

```
## Not run:
get_sensor_data(sensor_index = 175413, fields = c("name", "last_seen", "pm2.5_cf_1", "pm2.5_atm"))
get_sensor_data(sensor_index = "175413", fields = c("name", "last_seen", "pm2.5_cf_1", "pm2.5_atm"))

## End(Not run)
```

---

get_sensor_history            *get sensor history*

---

### Description

Retrieves the latest history of a single sensor matching the provided `sensor_index`. Find more details on sensor fields at https://api.purpleair.com/#api-sensors-get-sensor-history.

### Usage

```
get_sensor_history(
  sensor_index,
  fields,
  start_timestamp,
  end_timestamp,
 average = c("10min", "30min", "60min", "6hr", "1day", "1week", "1month", "1year",
    "real-time"),
  purple_air_api_key = Sys.getenv("PURPLE_AIR_API_KEY"),
  read_key = NULL
)
```

### Arguments

| | |
|---|---|
| sensor_index | Integer (or numeric, character object coerceable to integer) sensor_index |
| fields | A character vector of which 'sensor data fields' to return |
| start_timestamp | |
| | time stamp of first required history entry (inclusive) |
| end_timestamp | end time stamp of history to return (exclusive) |
| average | time frame to request averaged results for |
| purple_air_api_key | |
| | A character that is your PurpleAir API READ key |
| read_key | A character key required to read data from private devices |

### Value

a list of sensor data, named by the provided `fields`

### Examples

```
## Not run:
get_sensor_history(
  sensor_index = 175413,
  fields = c("pm1.0_cf_1", "pm1.0_atm", "pm2.5_cf_1", "pm2.5_atm"),
  start_timestamp = as.POSIXct("2024-07-02"),
  end_timestamp = as.POSIXct("2024-07-05")
)

## End(Not run)
```

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