



The Open Railway Map API



Max Kleiner 5 min read · 23 hours ago



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The OpenRailwayMap (ORM) is an OpenStreetMap-based project designed to create a detailed map of the world's railway infrastructure. It provides a variety of tools, APIs, and map styles to visualize railway data, including tracks, stations, signals, and speed limits.

Key Features and Usage

The OpenRailwayMap database is built on OpenStreetMap data and is available under the Open Database License (ODbL). The rendered map tiles are distributed under the CC-BY-SA 2.0 license. The project is non-commercial and maintained by volunteers, relying on donations for its operation.

The database supports querying railway-related information through a RESTful API. This API allows users to search for stations by name or reference code and retrieve mileage data for specific railway lines. The API documentation is hosted on GitHub.

Map Styles and Tile Access

The map tiles are rendered in Web Mercator projection and are available in different styles, such as:

- Standard: Displays railway infrastructure like tracks, stations, and switches.
- Signals: Visualizes railway signals and train protection systems.
- Maxspeed: Shows maximum speeds and speed signals for railway lines.

Tiles can be accessed via URLs in the format:

[http://{\\$s}.tiles.openrailwaymap.org/{\\$style}/{\\$z}/{\\$x}/{\\$y}.png](http://{$s}.tiles.openrailwaymap.org/{$style}/{$z}/{$x}/{$y}.png)

Here, {\$s} can be replaced with subdomains (a, b, or c) for faster loading, and {\$style} specifies the map style.

Integration with Tools

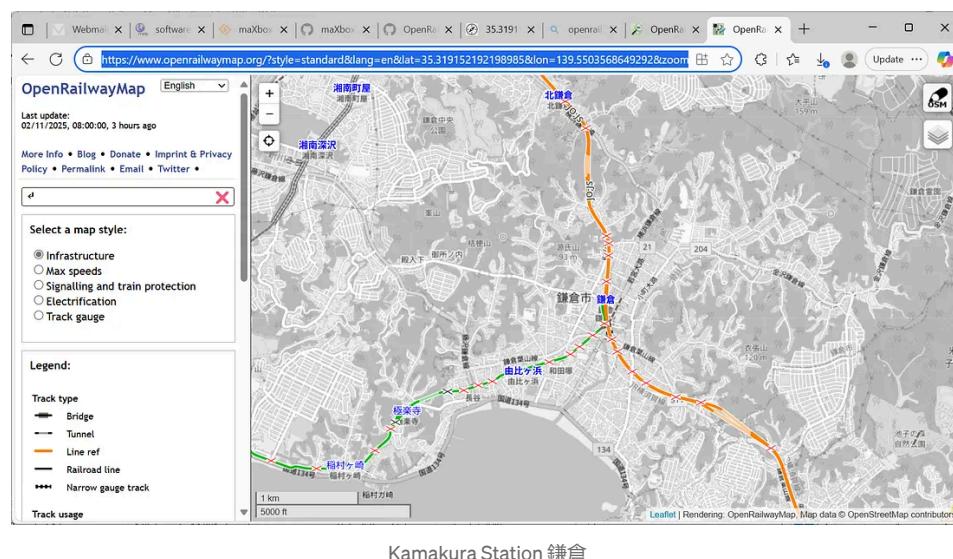
The OpenRailwayMap tiles can be integrated into various mapping libraries and tools:

- OpenLayers and Leaflet: Easily add OpenRailwayMap layers using their respective APIs.
- OsmAnd: Overlay OpenRailwayMap tiles on offline maps with the “Online maps” plugin.
- QGIS: Load OpenRailwayMap tiles as XYZ layers for GIS analysis.

The OpenRailwayMap API and tiles are free for non-commercial, small-scale applications. Commercial use requires setting up a private server. Bulk requests and misuse of headers (e.g., faking user-agent) are prohibited. Applications must include proper attribution when using the tiles or API. For example we search for Kamakura Station, Japan:

OpenRailwayMap

<https://www.openrailwaymap.org/?style=standard&lang=en&lat=35.319152192198985&lon=139.5503568649292&z=14>



The project operates without guarantees of availability or support. Users requiring high reliability are encouraged to deploy their own instances of the API or image tile server.

For further details, visit the OpenRailwayMap GitHub repository or the OpenStreetMap Wiki page.

<https://wiki.openstreetmap.org/wiki/OpenRailwayMap/API>

So first we call the REST-API to get a stations facility information in JSON:

```

const URL_ORM_GET9 =
  'https://api.openrailwaymap.org/v2/facility?name=%s&limit=1';

function API_GEOlocation_ORM9(AURL, aloc, aApiKey: string;
                                verbose: boolean): Tlatlong;
var Httpreq: THttpRequestC; httpres: string; jsn: TMcJsonItem;
begin
  httpreq:= THHttpRequestC.create(self);
  httpreq.headers.add('Accept: application/json; charset=utf-8');
  //httpreq.headers.add('X-Api-Key:' +aApiKey);
  httpreq.userAgent:= USERAGENT5;
  httpreq.SecurityOptions:= [soSsl3, soPct, soIgnoreCertCNInvalid];
  try
    if httpreq.get(Format(AURL,[aloc])) then begin
      httpres:= (httpreq.Response.ContentAsUTF8String)
      writeln('conttype ' +httpreq.Response.ContentType);
      if verbose then writ('debug back ' +formatJson(httpres));
      jsn:= TMcJsonItem.Create;
      jsn.AsJSON:= httpres;
      writ('debug name: ' +jsn.at(0,'name').asString)
      writ('debug operator: ' +jsn.at(0,'operator').asString)
      result.lat:= jsn.at(0,'latitude').asnumber;
      //in the api now fixed
      result.long:= jsn.at(0,'longitude').asnumber;

      result.descript:= Format('Coords: lat %2.5f lng %2.5f %
osm_id: %s operator: %s',
                                [result.lat,result.long,jsn.at(0,'name').asString,
                                 jsn.at(0,'osm_id').asString,
                                 jsn.at(0,'operator').asString]);
    end else Writeln('APIError '+inttostr(Httpreq.Response.StatusCode2));
  except
    writeln('EWI_APIHTTP:
      '+ExceptionToString(exceptiontype,exceptionparam));
  finally
    writeln('Status3: '+gethttpcod(httpreq.Response.statuscode2))
    httpreq.Free;
    sleep(200);
    jsn.Free;
  end;
end;

```

The API returns JSON formatted data with following fields:

- latitude: latitude, longitude: longitude
- osm_id: OSM node ID
- rank: an importance rank calculated by taking the public transport route relations into account using this station/halt. All OSM tags present on this object. The following tags are very often in use. See the OSM wiki and Taginfo for a more comprehensive list of possible tags.
- name: name, uic_name: UIC station name
- railway:ref: reference assigned by the operator of the infrastructure
- railway: type of the facility following Tagging rules), e.g. station, halt, junction, yard.
- operator: operator of the infrastructure

Open Railway Map:-----

```

contype application/json
debug back [
  "osm_id": 506122717,
  "name": "鎌倉",
  "railway": "station",
  "ref": null, "train": "yes",
  "name:en": "Kamakura",
  "name:es": "Kamakura JR",
  "name:it": "Kamakura",
  "name:ja": "鎌倉",
  "name:ko": "가마쿠라",
  "name:zh": "镰仓",
  "operator": "東日本旅客鉄道",
  "wikidata": "Q932895",
  "wikipedia": "ja:鎌倉駅",
  "name:ja-Hira": "かまくら",
  "name:ja-Latn": "Kamakura",
  "public_transport": "station",
  "latitude": 35.31911869967492,
  "longitude": 139.5504286,
  "rank": 12
]
debug name: \u938c\u5009
debug operator: \u6771\u65e5\u672c\u65c5\u5ba2\u9244\u9053

```

Status3: SC_OK Coords: lat 35.31912 lng 139.55043 鎌倉 osm_id: 506122717

operator: 東日本旅客鉄道

mX5 🐞 executed: 02/11/2025 08:48:43 Runtime: 0:4.305 Memload: 64% use

I got also a mail from a bugfix which is now solved [1](#). Thank you for the bug report and the comment reminding me. I adapted the frontend JavaScript code as well because it assumed latitude and longitude to be swapped as well. It seems that the old API had this bug, too. 😳

The call for the map above has to be set with the coordinates, which we got from the facility API:

```

OpenWeb('https://www.openrailwaymap.org/?style=standard&lang=en&lat='+
  flots(togeо.lat)+'&lon='+flots(togeо.long)+'&zoom=14');

```

Most of the UTF-8 we do de-serialize with the function jsonunescape():
 writ(jsonunescape((togeо.descript),#13#10));

>>> Coords: lat 35.31912 lng 139.55043 鎌倉 osm_id: 506122717 operator: 東日本旅客鉄道

A string is a sequence of zero or more Unicode characters [UNICODE]. An object is an unordered collection of zero or more name/value pairs, where a name is a string and a value is a string, number, boolean, null, object, or array. An array is an ordered sequence of zero or more values.

The latitude 35.319118699674918 and longitude 139.5504286 shown on map.

GPS coordinates: 35° 19' 8.8273" N 139° 33' 1.5430" E



```
OpenWeb('https://www.latlong.net/c/?lat=' + flots(togeo.lat) + '&long=' + flots(togeo.long));
```

```
OpenWeb('https://www.latlong.net/c/
lat=' + flots(togeo.lat) + '&long=' + flots(togeo.long));
```

```
OpenWeb('https://www.openrailwaymap.org/?style=standard&lang=en&lat=' +
flots(togeo.lat) + '&lon=' + flots(togeo.long) + '&zoom=14');
```

Most API requests should normally take no longer than 3 seconds. In any case, you should write your application so that it will time out requests after ca. 5 seconds. Applications must send a unique HTTP User-Agent. If map tiles are embedded into a website, browsers must send a valid HTTP referer instead.

[1https://github.com/OpenRailwayMap/OpenRailwayMap-api/issues/6](https://github.com/OpenRailwayMap/OpenRailwayMap-api/issues/6)

Max Kleiner, Text, Code & Photos, November 2025

Appendix, Source and Links

Ref: [OpenRailwayMap/API — OpenStreetMap Wiki](#)

<https://www.openrailwaymap.org/>

[Japan 2025 — Breitschblog](#)

<https://wiki.openstreetmap.org/wiki/OpenRailwayMap/API>

Script: https://github.com/maxkleiner/OpenRailwayMap-api/blob/master/tests/1444_OpenRailMap_Geolocation_distance14_uc.py.txt

[Geocoding IV. Just like every actual house has its...](#) | by Max Kleiner | Nerd For Tech | Medium

[Fuji-san Moments. Fuji-san Moments 2 富士山](#) | by Max Kleiner | Oct, 2025 | Medium

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Please select an area



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Written by Max Kleiner

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Max Kleiner's professional environment is in the areas of OOP, UML and coding - among other things as a trainer, developer and consultant.

No responses yet



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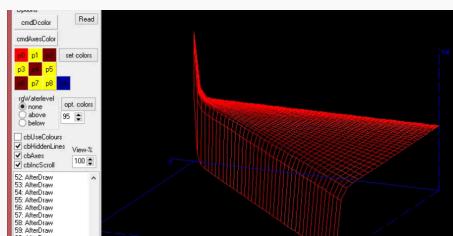


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What are your thoughts?



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6.238137	0.971880	2401.0	2.109842	37.86
8.288136	1.073446	496.0	2.802260	37.85
5.817352	1.073059	558.0	2.547945	37.85
6.281853	1.081081	565.0	2.181467	37.85

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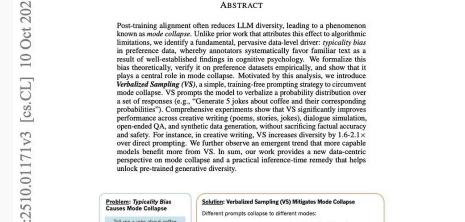
 In AWS in Plain English by DevMind

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ABSTRACT

Post-training alignment often reduces LLM diversity, leading to a phenomenon known as mode collapse. Unlike prior work that attributes this effect to algorithmic limitations, we show that it is caused by a well-known cognitive bias: the halo effect in preference data, whereby annotators systematically favor familiar text as a result of well-established findings in cognitive psychology. We formalize this bias theoretically and empirically in our experiments. We find that it also plays a central role in mode collapse. Motivated by this analysis, we introduce Verbalized Sampling (VS), a simple technique that mitigates the effect of mode collapse. VS prompts the model to verbalize a probability distribution over a set of responses (e.g., “Generate 3 jokes about cats”) and their corresponding probabilities. Our experiments show that VS significantly improves performance across creative writing (poems, stories, jokes), dialogue simulation, open-ended Q&A, and ranking tasks, while also improving model fairness, accuracy, and safety. For instance, in creative writing, VS increases diversity by 1.6-2.1x over direct prompting. We further observe an eminently trend that VS is capable models to mitigate mode collapse in general. We hope that this new diagnostic perspective on mode collapse and a practical inference-time remedy that helps attack pre-trained generative diversity.

Problems: Typically Bias Causes Mode Collapse

Solution: Verbalized Sampling (VS) Mitigates Mode Collapse

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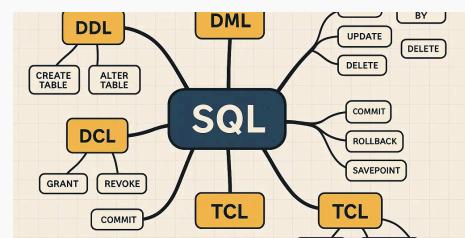
  



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In Write A Catalyst by Adarsh Gupta

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