MARCONI

Automatic Multimedia Analysis services

www.projectmarconi.eu
contact@projectmarconi.eu

Metadata extraction

The services provide capabilities for automatically extracting technical and descriptive metadata from multimedia content, enabling the understanding, the matching and the search of image and video content. This includes metadata such as recording properties and location, quality metadata, detecting and recognising persons and detecting common object classes.

Geolocation

This service allows for the extraction of geographic coordinates and a semantic location from the EXIF data based on photos. If the geolocation information is not found in the EXIF data MARCONI provides an additional visual-location-matching service that can be used to perform clustering of the content.

Visual quality

Information about the visual quality of images and videos (e.g. level of sharpness) and the presence of impairments (e.g. noise, blocking artefacts, and block dropouts) can be extracted in order to filter content and select items appropriate for reuse.

Face detection and recognition

The information about people provide important insights into multimedia content. The services enable the detection and presence of faces and the recognition of persons, which have been trained. Tracking is used in video to increase the robustness in case a person is moving or only partly visible. The method is able to work with only few training samples per person thus facilitating of the adding new persons. The face recognition algorithm allows you to automatically train new persons repeatedly encountered in the content. This enables you to this person to and identity later on withour reanalyzing the content. The face recognition engine only uses generic identifiers, so that a link to a person can only be established using the PriVaults privacy-aware data store.

Logo detection

The presence of products and company logos (or more generally, specific symbols) are an important criterion for searching and filtering content. Logos can be made easily searchable by just providing one or few samples.

Object detection

The services provide capabilities to detect and locate the presence of hundreds of common object classes in images or video. This enables you to index multimedia content with concepts in order to enable efficient text-based searches and filtering.

GPU acceleration

The analysis services are designed to take advantage of a state-of-the-art hardware acceleration. These are provided by graphics processors (GPUs) for fast processing and high throughput.

Proxy generation

The services support the generation of proxies such as lower resolution versions or key frames for preview and browsing.

Microservices

The analysis services are deployed as microservices using a Docker container. This enables scalability and and gives you the ability to run the services both on local infrastructure as in the cloud.

Text indexing

This service allows the insertion of social media posts and messages from other communication channels into an index (that can later be used by a search service). It also allow you for the retrieval and removal from that index. The service creates a full-text index and several additional indexes for filtering and faceting results. The full-text index is primarily used as part of a search request while facets allow you to refine a result based on specific characteristics. As part of the process compound word splitting and stemming is performed together with tokenisers to break words that e.g. contain numbers. Furthermore, we extract and index mentions (e.g. @username) and hashtags (e.g. #hashtag). Depending on the use case, the service can include domain-dependent stop word lists, synonyms and protected word lists. The service is able to run in parallel environments (item collections and search indexes) and enables dedicated front-end applications.

Searching

The service uses an existing index (e.g. like the ones created by the Text Indexing service) in order to allow complex queries to be made. The queries could contain a mix of keywords: @usernames, #hashtags, logical operators, wildcards and facets. The service will return a fixed number of results based on a configurable pagesize.

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