

SketchOscent: towards a knowledge-based model and interactive visualization of the odour space

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SketchOscent : Towards a knowledge-based model and interactive visualization of the odour space

The representation of an odour space is a challenging issue for scientists and professionals working in odour-related activities. Such an odour representation has to tackle the issues of a large amount of odors, dealing with subjectivity and uncertainty, a meaningful categorization for a knowledge map, and a readable and interactive visualization. Many representations of the odorant space have been proposed like : Field of odors[1], ScenTree [2], SensoryMap [3], Flavor network[4]. These initiatives turn the odorant space into easy-to-digest representations but the odour set is often restricted, and does not reflect the overlapping of categories. Thus, the related visualizations, face with difficulties to represent such odour relationships.

This work based on knowledge graphs from semantic web aims to propose a readable, interactive and publicly available representation of the aroma space, relying on a large set of odors and on overlapping categories, dedicated to olfactory and sensory practices.

Data sources Semantic web and data mining technologies The Good Scents Company Information System Public odour model in RDF language Graph drawing with Gephi software Flavornet Layout algorithms (Forced based, Yifan Hu, Circular layout) Modelling and conceptualization Interactive Web 2.0 visualization Links extracted from data sources in web browser (JavaScript) Expert knowledge about odour from scientists Interviews and questionnaires to **Statistics** refine categories Hierarchy of 117 categories (poles and subpoles) mpyreumatic 6 levels depth Fresh Chemical 382 instances of odors Odor 644 Links between odors Floral Fruit • Wood /egeta Balsamic rrel Aged Alcoho Green Vegetal Visualization and interaction Vegetable Minimal spanning tree and odour duplication Vertex: odour (category and instance) Aromatic Plant Colour: category level in hierarchy Arc: subcategory link Scaling: zooming in / out Search: odour search by text Vertex click on: textual notice about the odour Vertex fly over: odour neighbourhood subgraph highlight Vertex selection: odour neighbourhood subgraph

https://oniris-polytech.univ-nantes.io/sketchoscent

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