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Data analysis for personalized local search

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EC FET Open project NADINE review
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www.nomao.com

Plan

1. Nomao : book of good places (between friends)

2. Data analysis @ nomao

3. Ongoing projects

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Nomao
book of good places (between friends)

www.nomao.com

- ✔ Web and mobile applications
- ✔ Find, keep and share good places (restaurants, bars, shopping, doctors...)
- ✔ Personalized search : recommendation, geolocation

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Web application

- ✔ Off-line user : e-reputation
- ✔ On-line user (FB) : recommendation
  - − places that matches your tastes
  - − places recommended by your friends

👍👍👍 **Very highly recommended**

MICHEL SARRAN
★★★★✩ 315 ratings

Phone: 0561123232

Address: 21 Boulevard Armand Duportal 3 France
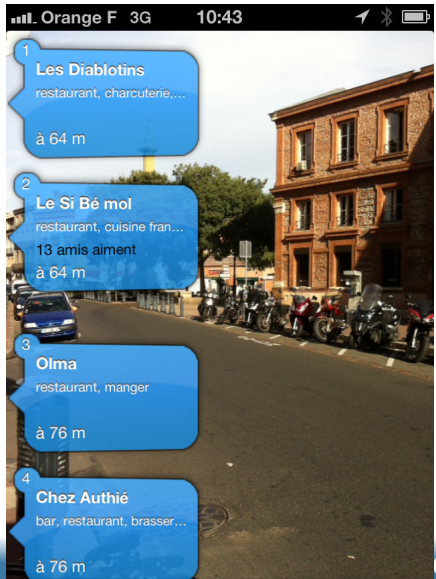
Also liked by:

Keywords: restaurant, gourmet, french food, hotel, air condit accepted, with terrace, kitchen, disabled access, english, pr

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Mobile application

- ✔ E-reputation
- ✔ Recommendation
- ✔ **Geolocation-based search**
- ✔ **Augmented reality**

Nomao

2007 creation
2010 acquired by Ebuzzing
2012 3.5 M€ CA

✔ Toulouse / Paris / Évreux / Nantes / Chartres...
✔ 10 employees
✔ Business model : premium-rate numbers

UNIVERSITÉ DE TOULOUSE LE MIRAIL

UCL
Université catholique de Louvain

iRiT
Institut de Recherche en Informatique de Toulouse
CNRS INPT UPS UT1

Orange Labs

⇒ ECML, EGC, TALN, INFORSID, VSST, ICEIS, IEEE TNNLS ...
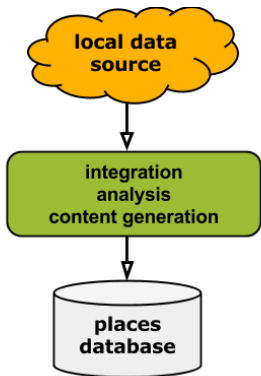⇒ http://www.nomao.com/labs

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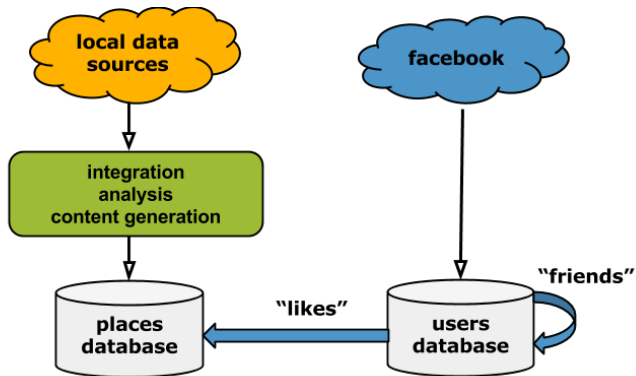3. Ongoing projects

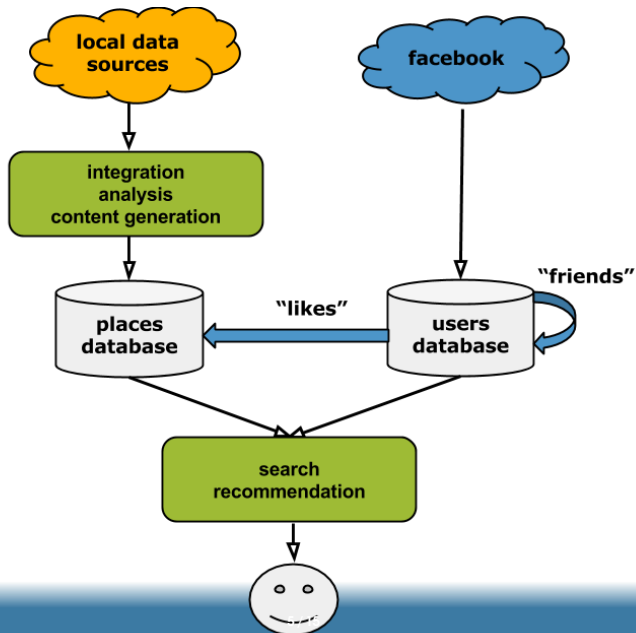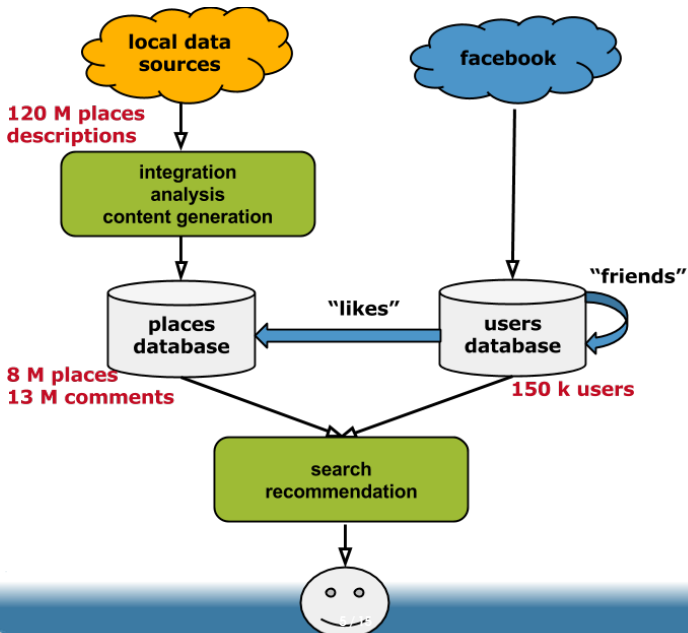nomao

Data analysis @ nomao

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Places database creation

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Places database creation
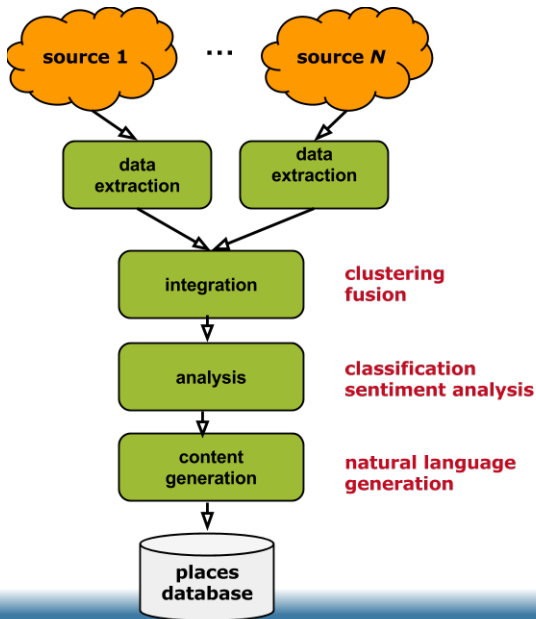
Data extraction

SOURCE 1

$$\begin{bmatrix} \text{NAME} : \text{Les Caves de La Maréchale} \\ \text{TAGS} : \text{restaurant} \\ \text{ADDRESS} : \\ \begin{bmatrix} street : \\ city : \text{Toulouse} \end{bmatrix} \\ \text{COMMENTS} : \\ \begin{bmatrix} rating : 4 \\ text : \text{"I enjoyed most of the..."} \end{bmatrix} \end{bmatrix}$$

SOURCE 2

$$\begin{bmatrix} \text{NAME} : \text{Caves de La Maréchale SARL} \\ \text{TAGS} : \text{french} \\ \text{ADDRESS} : \\ \begin{bmatrix} street : \text{Rue Jules Chalande} \\ city : \text{Toulouse} \end{bmatrix} \\ \text{COMMENTS} : \\ \begin{bmatrix} rating : 2 \\ text : \text{"Didn't really liked the..."} \end{bmatrix} \end{bmatrix}$$

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Data integration

PLACE #5237890

$$\begin{bmatrix} \text{NAME} : \text{Les Caves de La Maréchale} \\ \text{TAGS} : \text{restaurant, french} \\ \text{ADDRESS} : \begin{bmatrix} street : \text{Rue Jules Chalande} \\ city : \text{Toulouse} \end{bmatrix} \\ \text{COMMENTS} : \begin{bmatrix} rating : 4, text : \text{"I enjoyed most of the..."} \\ rating : 2, text : \text{"Didn't really like the..."} \end{bmatrix} \end{bmatrix}$$

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Data analysis

PLACE   #5237890

NAME : Les Caves de La Maréchale
TAGS : restaurant, french
CATEGORY : eating > restaurant > european > french
ADDRESS :
$$\begin{bmatrix} street : \text{Rue Jules Chalande} \\ city : \text{Toulouse} \end{bmatrix}$$
SUBWAY :
$$\begin{bmatrix} station : Capitole, distance : 304m \\ station : Esquirol, distance : 192m \end{bmatrix}$$
COMMENTS :
$$\begin{bmatrix} rating : 4, text : \text{"I enjoyed most of the..."} \\ rating : 2, text : \text{"Didn't really like the..."} \end{bmatrix}$$
POSITIVE FEATURES :
$$\begin{bmatrix} \text{SERVICE} : \text{great staff} \\ \text{DISHES} : \text{delicious chocolate cake} \end{bmatrix}$$
E-REPUTATION : 79%

Generated content

Les caves de la maréchale – **Métro Esquirol**
⭐⭐⭐⭐⭐ 333 notes

Téléphone : 05.61.23.89.88
Adresse : Rue Jules Chalande 31000 Toulouse France
Site : www.lescavesdelamarechale.com/
Transport :
  Métro Esquirol (192 m)
  Métro Capitole (304 m)

Réserver en ligne

Ajouter au carnet

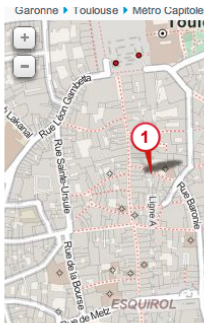Vous êtes propriétaire de ce lieu ?

Présentation :

Restaurant Les Caves De La Maréchale à Toulouse
Le **restaurant Les Caves De La Maréchale** à **Toulouse** vous propose de savourer ses meilleures spécialités du Sud-Ouest. Ce restaurant se situe Rue Jules Chalande à Toulouse. Métro Esquirol ou bien Métro Capitole sont les stations de métro les plus près du restaurant. Vous aurez particulièrement la possibilité de jouir d'une atmosphère vraiment chic. Aux Caves De La Maréchale, le paiement par carte bleue est accepté. À proximité des Caves De La Maréchale, vous trouverez le restaurant Le Coq Hardi, le restaurant CAMUZET Georges Jean Andre, le restaurant La Corde, le restaurant BMA et le restaurant Le Petit Lord.

L'avis des internautes
Vos avis sur Les Caves De La Maréchale : Nous avons relevé trois avis positifs sur cinq dans lesquels le prix est qualifié de "rapport qualité-prix très intéressant", "prix abordable" et de "prix excellent". Sur 10 commentaires qui évoquent le service, 3 ont donné une évaluation positive. La décoration est dite "décor de rêve", "decor original" et "decor superbe" selon 3 hôtes. Le plat principal a été apprécié par trois hôtes ("qualite des plats, plats originaux, plats bons").

Garonne ▸ Toulouse ▸ Métro Capitole

Natural language description (translation)

Restaurant Les Caves De La Maréchale À Toulouse

The restaurant Les Caves de La Maréchale in Toulouse invites you to enjoy the best specialties of South-West France. This restaurant is located Rue Jules Chalande in Toulouse. Esquirol or Capitole are the closest subway stations to the restaurant. You will have the possibility to enjoy an elegant atmosphere. At Les Caves de La Maréchale, credit card payment is accepted. Close to Les Caves de La Maréchale, you will find the restaurant CAMUZET Georges Jean Andre, the restaurant La Corde, the restaurant BMA and the restaurant Le Petit Lord.

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Places recommendation

Places recommendation

E-reputation **sentiment analysis** + ratings

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Places recommendation

E-reputation **sentiment analysis** + ratings
Affinity between place and user

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Places recommendation

E-reputation **sentiment analysis** + ratings

Affinity between place and user

       ✔ **collaborative filtering :** places liked by people who like the same places as the user

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Places recommendation

E-reputation **sentiment analysis** + ratings

Affinity between place and user

- ✔ **collaborative filtering :** places liked by people who like the same places as the user
- ✔ **descriptive profiling :** places that have the same tags as the places liked by the user

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Places recommendation

E-reputation **sentiment analysis** + ratings

Affinity between place and user

- ✔ **collaborative filtering :** places liked by people who like the same places as the user
- ✔ **descriptive profiling :** places that have the same tags as the places liked by the user

Social recommendation places liked by the user's friends

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Search and ranking

Search and ranking

Multi-criteria ranking :

Search and ranking

Multi-criteria ranking :

✔ Query ↔ place similarity

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Search and ranking

Multi-criteria ranking :
- ✔ Query ↔ place similarity
- ✔ Geographical proximity

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Search and ranking

Multi-criteria ranking :
- ✔ Query $\leftrightarrow$ place similarity
- ✔ Geographical proximity
- ✔ Content quality

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Search and ranking

Multi-criteria ranking :
- ✔ Query ↔ place similarity
- ✔ Geographical proximity
- ✔ Content quality
- ✔ E-reputation

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Search and ranking

Multi-criteria ranking :
- ✔ Query $\leftrightarrow$ place similarity
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- ✔ E-reputation
- ✔ Affinity between place and user

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Search and ranking

Multi-criteria ranking :
- ✔ Query ↔ place similarity
- ✔ Geographical proximity
- ✔ Content quality
- ✔ E-reputation
- ✔ Affinity between place and user
- ✔ Social recommendation

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Ongoing projects

Learning-to-rank ranking model learnt from users' actions (Ph. D. thesis)

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Ongoing projects

Learning-to-rank ranking model learnt from users' actions (Ph. D. thesis)

Data fusion

source A → 05.61.23.89.88
source B → 05.62.48.33.90
which nº is right ?

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Ongoing projects

Learning-to-rank ranking model learnt from users' actions (Ph. D. thesis)

Data fusion

source A $\rightarrow$ 05.61.23.89.88
source B $\rightarrow$ 05.62.48.33.90
which n^o is right ?

Text mining Name, address, phone number, etc. could be directly extracted from the businesses websites

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// Contact

estelle@nomao.com

// News

www.blog.nomao.fr