

REIMAGINING (MAP) NAVIGATION

Daniel Meusburger
Fundamentals Situated Interaction
30 September 2016

3 RELATED TOPICS



ROUTELENS

“I WANT TO EXPLORE A ROUTE”



JELLYLENS

“I WANT TO SEE THE IMPORTANT STUFF”



AURIGO

“I WANT TO DO A TOUR”

EASY ROUTE FOLLOWING FOR
MAP APPLICATIONS

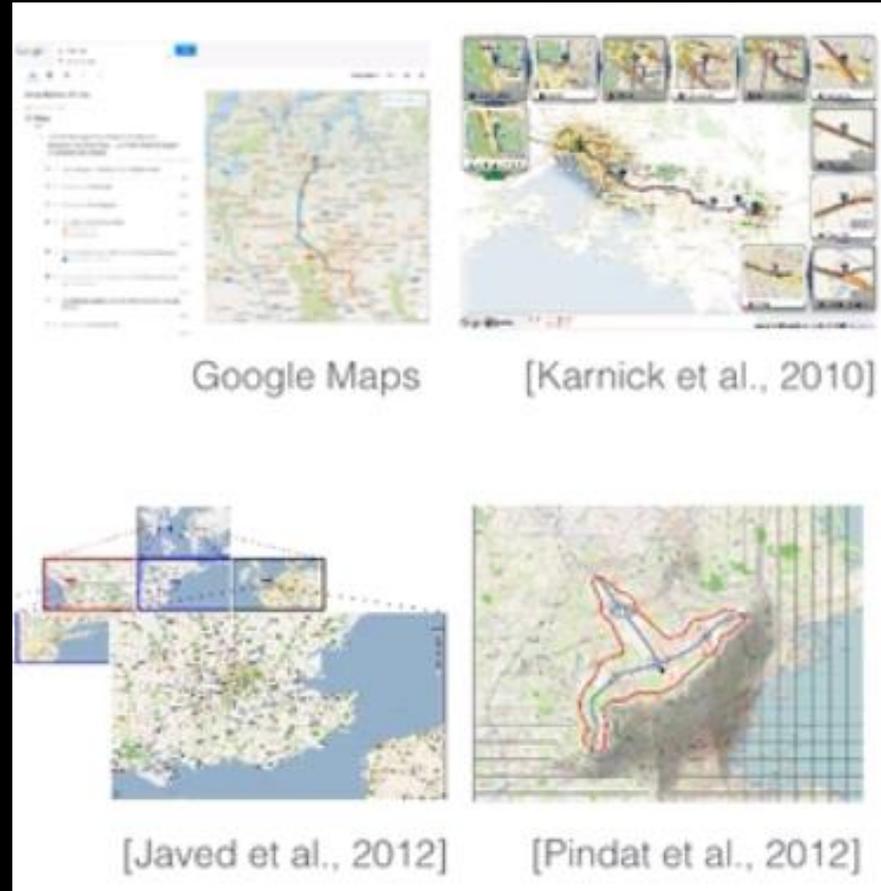
ROUTELENS

**“I WANT TO
EXPLORE A ROUTE”**

Jessalyn Alvina
Caroline Appert
Olivier Chapuis
Emmanuel Pietriga

PAN AND ZOOM

POINTS OF INTEREST



Google Maps

[Karnick et al., 2010]

[Javed et al., 2012]

[Pindat et al., 2012]

OVERVIEW + DETAIL

FOCUS + CONTEXT

EASY ROUTE FOLLOWING FOR
MAP APPLICATIONS

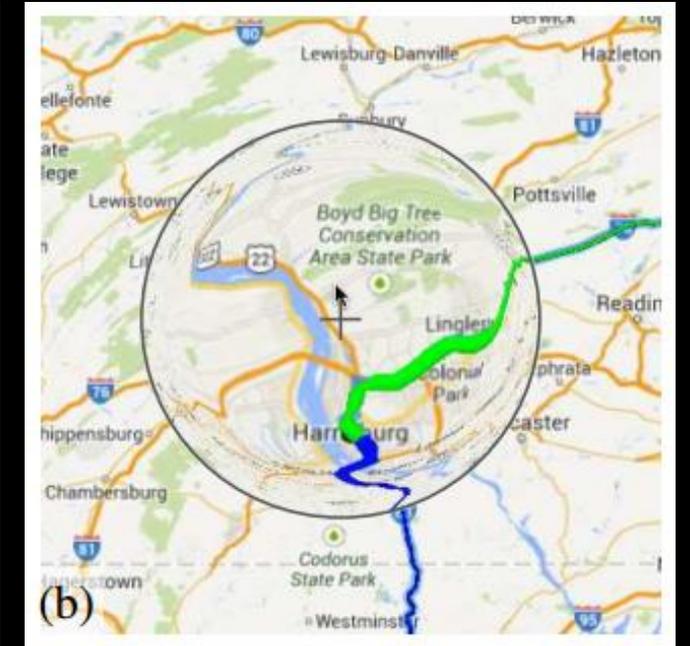
ROUTELENS

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STANDARD FISHEYE LENS



WITH ROUTELENS

RouteLens

Easy Route Following for Map Applications



Jessalyn Alvina



Caroline Appert



Olivier Chapuis



Emmanuel Pietriga

EASY ROUTE FOLLOWING FOR
MAP APPLICATIONS

ROUTELENS

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CONCEPT 1

INSTRUMENT

YES, THE LENS.

CO-ADAPTIVE

NO USER APPROPRIATION OF THE LENS
PARAMETERS E.G. SIZE, FORCE (ONLY
POSITION).

LEARNABILITY HIGH, BECAUSE OF
SIMILARITY TO PHYSICAL LENSES. SUBTLE
FEEDBACK

CONTEXT-AWARE
ADAPTIVE LENSES

JELLYLENS

**“I WANT TO SEE THE
IMPORTANT STUFF”**

Cyprien Pindat
Emmanuel Pietriga
Olivier Chapuis
Claude Puech



CONCEPT 2

JellyLens

Content-Aware Adaptive Lenses

Cyprien Pindat

Emmanuel Pietriga

Olivier Chapuis

Claude Puech

UIST 2012



CONTEXT-AWARE
ADAPTIVE LENSES

JELLYLENS

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INSTRUMENT

YES, THE LENS.

CO-ADAPTIVE

NO USER APPROPRIATION OF THE LENS
(POINT OF INTERESTS ARE IN DATA)

SIMILARITY TO PHYSICAL MAGNIFYING LENS,
NO SEPARATE LEARNABILITY FEATURES

AN INTERACTIVE TOUR PLANNER FOR PERSONALIZED ITINERARIES

AURIGO

“I WANT TO DO A TOUR”

Alexandre Yahy
Antoine Chassang
Louis Raynaud
Hugo Duthil
Duen Horng (Polo) Chau

a Total distance to walk : 5222 m

b

c

d

e

f

L'Opera Garnier

94.55/100
★★★★★

The Palais Garnier (pronounced: [paʁ aɲje]) is a 1,979-seat opera house, which was built from 1861 to 1875 for the Paris Opera. It was originally called the Salle des Capucines because of its location on the Boulevard des Capucines in the 9th arrondissement of Paris, but soon became known as the Palais Garnier in recognition of its opulence and its architect, Charles Garnier. The theatre is also often referred to as the Opera Garnier, and historically was known as the Opera de Paris or simply the Opera, as it was the primary home of the Paris Opera and its associated Paris Opera Ballet until 1989, when the Opera Bastille opened at the Place de la Bastille. The Paris Opera now mainly uses the Palais Garnier for ballet.

Address : 8 rue Scribe 75009 Paris France
Position : Lat : 48.872347
Long : 2.331637

Monuments Museums Movies Parks Bars Restaurants

Route

Rue de Verneuil, Paris, France

1 m : 1 minute

- 1 Prendre la direction est sur Rue de Verneuil 1 m

Rue de Verneuil, Paris, France

1.5 km : 19 minutes

- 1 Prendre la direction nord-est sur Rue de Beaune vers Rue de Lille 0.2 km
- 2 Prendre à gauche sur Quai Voltaire 45 m
- 3 Prendre légèrement à droite sur Pont Royal 0.2 km
- 4 Prendre légèrement à droite sur Avenue du Général Lemonnier 12 m
- 5 Tourner à gauche vers Place de la Concorde 0.7 km
- 6 Prendre à gauche sur Place de la Concorde 32 m
- 7 Tourner à droite pour rester sur Place de la Concorde 44 m
- 8 Tourner à gauche pour rester sur Place de la Concorde 0.2 km
- 9 Tourner à gauche pour rester sur Place de la Concorde 42 m

Aurigo

Choose your itinerary

I want to build my own path

Starting address

Indiquez un lieu

Final address

Indiquez un lieu

Type of walk Light walk Regular walk Long walk

Your interests

Monuments



Movies



Museums



Parks



Go

Reset

AN INTERACTIVE TOUR PLANNER
FOR PERSONALIZED ITINERARIES

AURIGO

**“I WANT TO DO A
TOUR”**

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INSTRUMENT

? (FILTER, TYPE OF WALK)

CO-ADAPTIVE

NO APPROPRIATION OF THE TOOL ITSELF

NO GUIDANCE TO LEARN

COMPARISON

Currently

| | ROUTE LENS | JELLY LENS | AURIGO |
|----------------------|---|---|---|
| REIFICATION | Magnification (object: the lens) | Magnification (object: the lens) | Route, reify path selection + finding POI |
| POLYMORPHISM | No, only map (routes) | Yes, different types (geometry, bitmaps, applications, websites) | - |
| REUSE | Use the same lens at different places | Use the same lens at different places | Save and share routes |
| SUBSTRATES | Set of rules of how mouse is attracted (adapted steering law) | Set of objects of interests which affect the behavior of the instrument | Map and social media data (Yelp+ Google Maps API) |
| INSTRUMENTS | Lens (fisheye) | Lens (adaptive fisheye) | - |
| APPROPRIATION | Only position | Only position | - |
| LEARNABILITY | Similar to physical magnifying glass (visual feedback) | Similar to physical magnifying glass , but unexpected behavior (visual) | Shows options in step-by-step mode |

COMPARISON

Extension

ROUTE LENS

JELLY LENS

AURIGO

REIFICATION

Ability to edit and save parameters of the lens

Ability to change lens parameters / draw lens

Ability to save and adapt custom filters and range

POLYMORPHISM

Other apps e.g. process charts
Apply the motor effect to other lenses

REUSE

Ability to add multiple lenses

Ability to add multiple lenses

Duplicate and edit routes*

SUBSTRATES

INSTRUMENTS

Adapt + Copy "Pop-radius"

APPROPRIATION

Change lens parameter (size, magnification, attraction force)

Ability to change lens and map parameters (draw lens)

Create custom filters, draw routes yourself

LEARNABILITY

Show suggested routes (e.g. mobile)

COMPARISON

Currently
Extension

| | ROUTE LENS | JELLY LENS | AURIGO |
|----------------------|---|---|---|
| REIFICATION | Magnification (object: the lens) Ability to edit and save parameters of the lens | Magnification (object: the lens) Ability to change lens parameters / draw lens | Route, reify path selection + finding POI Ability to save and adapt custom filters and range |
| POLYMORPHISM | Only map (routes) Other apps e.g. process charts Apply the motor effect to other lenses | Yes, different types (geometry, bitmaps, applications, websites) | - |
| REUSE | Use the same lens at different places Ability to add multiple lenses | Use the same lens at different places Ability to add multiple lenses | Save and share routes Duplicate and edit routes* |
| SUBSTRATES | Set of rules of how mouse is attracted (adapted steering law) | Set of objects of interests which affect the behavior of the instrument | Map and social media data (Yelp+ Google Maps API) |
| INSTRUMENTS | Lens (fisheye) | Lens (adaptive fisheye) | - Adapt + Copy "Pop-radius" |
| APPROPRIATION | Only position Change lens parameter (size, magnification, attraction force) | Only position Ability to change lens and map parameters (draw lens) | - Create custom filters, draw routes yourself |
| LEARNABILITY | Similar to physical magnifying glass (visual feedback) | Similar to physical magnifying glass, but unexpected behavior (visual) | Shows options in step-by-step mode Show suggested routes (e.g. mobile) |

REFERENCES

Jessalyn Alvina, Caroline Appert, Olivier Chapuis, and Emmanuel Pietriga. 2014. **RouteLens: easy route following for map applications**. In *Proceedings of the 2014 International Working Conference on Advanced Visual Interfaces (AVI '14)*. ACM, New York, NY, USA, 125-128. DOI=<http://dx.doi.org/10.1145/2598153.2598200>

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