

INSA

INSTITUT NATIONAL
DES SCIENCES
APPLIQUÉES
TOULOUSE

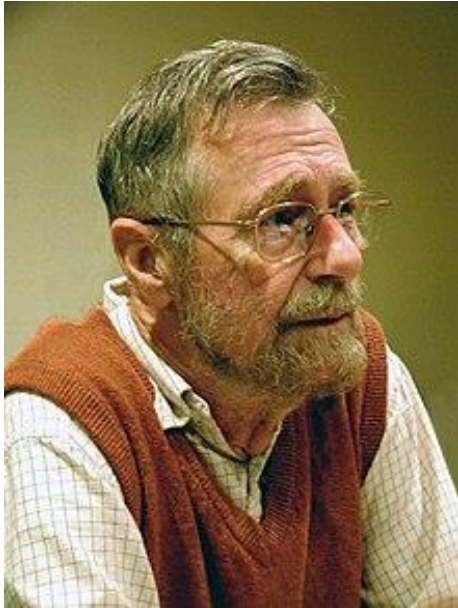
Soutenance BE GRAPHERS

Decaestecker-Sahraoui
6 juin 2019

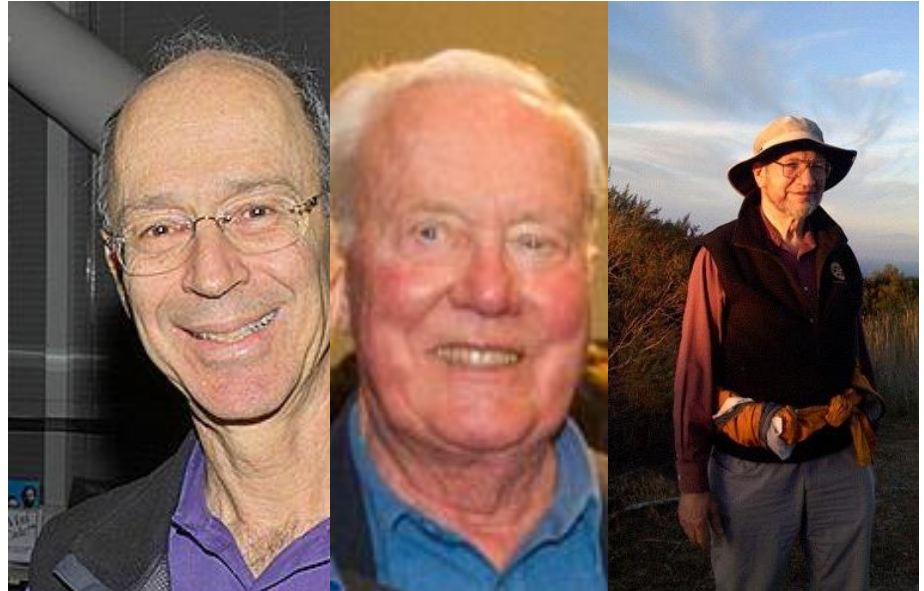


Université
de Toulouse

- Introduction
- Tests de validité
- Tests de performance
- Problème ouvert
- Conclusion



Edsger Dijkstra



Peter Hart, Nils Nilsson and Bertram Raphael of
Stanford Research Institute



Avec Oracle

----- Test de validité avec oracle sur une carte-----

----- Carte : TOULOUSE -----

----- Mandatory bridge Garonne -----

Mode : Temps

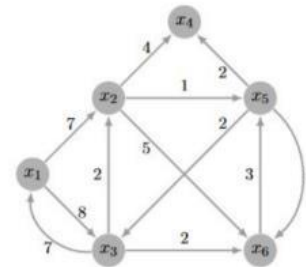
Origine : 2767

Destination : 14179

Mode : Distance

Origine : 2767

Destination : 14179



- Test validité et optimalité du chemin sur toutes les paires de noeuds possibles (y compris confondues ou inatteignables) du graphe simple fourni en énoncé.
- Test de validité et d'optimalité du chemin sur un chemin simple et un chemin nul, en distance et en temps sur les cartes Haute-Garonne, INSA, Carré.
- Test d'un chemin simple et d'un chemin impossible sur les carte Nouvelle-Zélande et Guadeloupe

Sans Oracle

----- Test de validité sans oracle sur une carte-

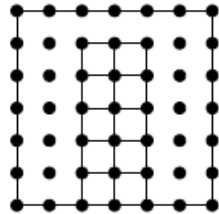
----- Carte : WALLS-----

----- Proche en euclidien, loin en distance -----

Mode : Temps

Origine : 2500

Destination : 500



Mode : Distance

Origine : 2500

Destination : 500

----- Départ sur un nœud isolé -----

Mode : Temps

Origine : 1001

Destination : 50500

Mode : Distance

Origine : 1001

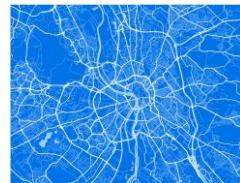
Destination : 50500

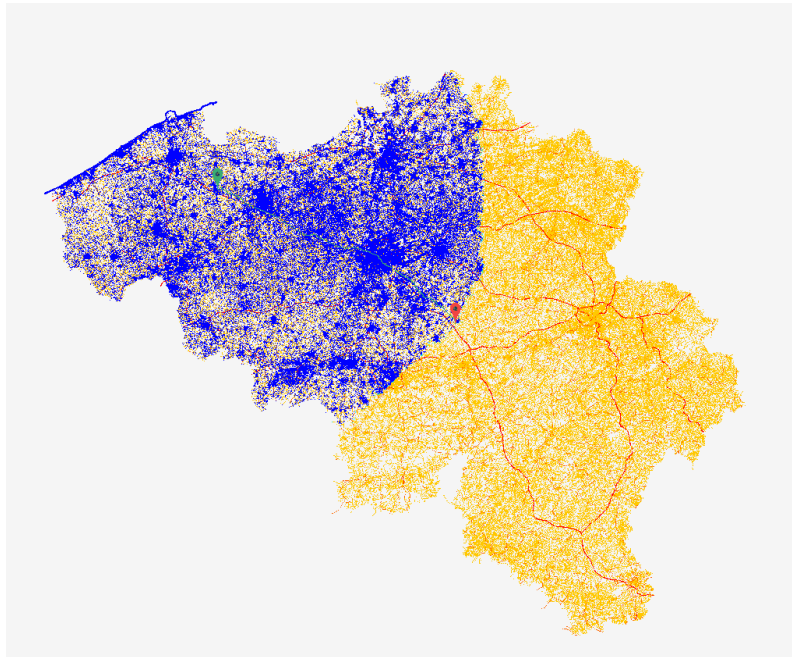
**temps minimal du chemin shortest =<
temps minimal du chemin
Fastest.**

Inverse en distance.

Distance et Temps :

Guadeloupe, Haute Garonne, Nouvelle Zélande, Toulouse.





Path from #279878 to #572193
☒ Length = 116,561 kilometers, Duration=1 hours, 59 minutes, 38 seconds.

Shortest-Path

Dijkstra

Origin: 279878 Clear Click

Destination: 572193 Clear Click

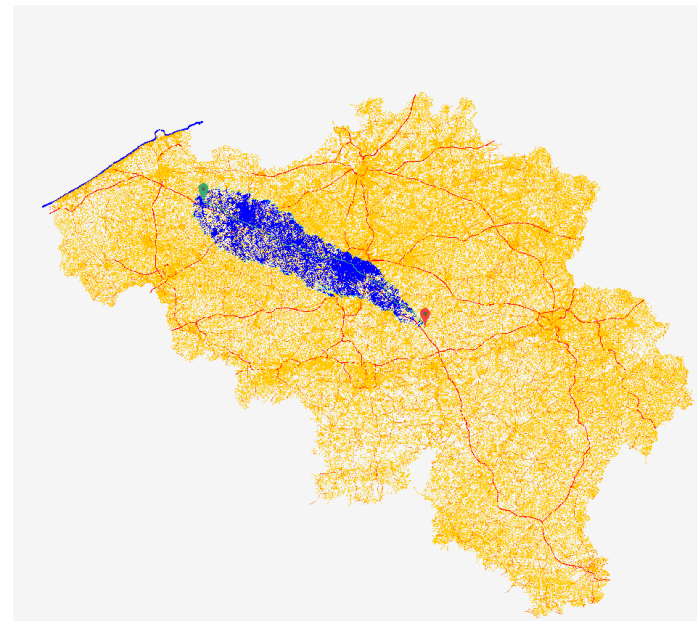
Mode: Shortest path, all roads allowed

Visualization: ☒ Graphic ☐ Textual

Shortest-path from #279878 to #572193 [shortest path, all roads...]

Found a path from node #279878 to node #572193, 116,5608 kilomet...

Start Hide



Path from #279878 to #572193
☒ Length = 116,561 kilometers, Duration=1 hours, 59 minutes, 38 seconds.

Shortest-Path

A*

Origin: 279878 Clear Click

Destination: 572193 Clear Click

Mode: Shortest path, all roads allowed

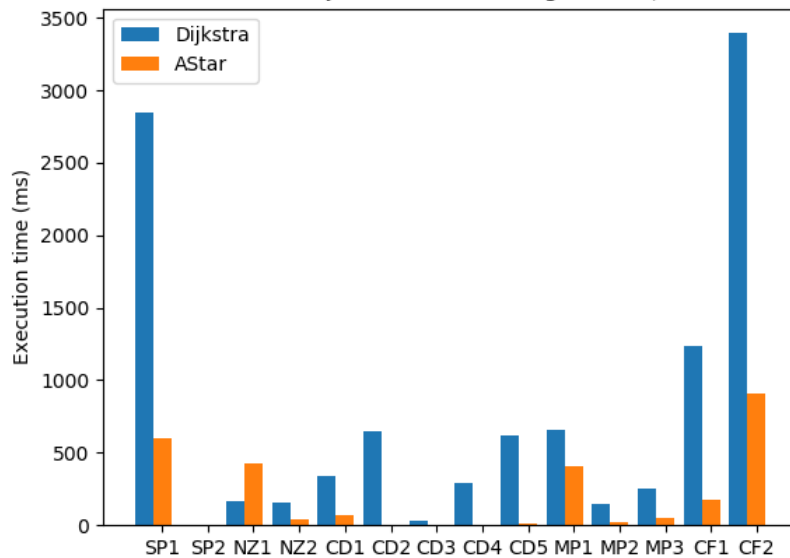
Visualization: ☒ Graphic ☐ Textual

Shortest-path from #279878 to #572193 [shortest path, all roads...]

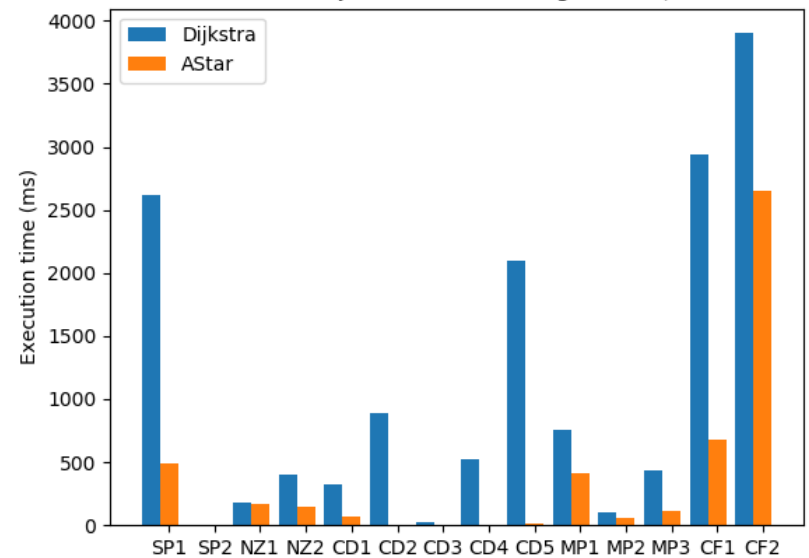
Found a path from node #279878 to node #572193, 116,5608 kilomet...

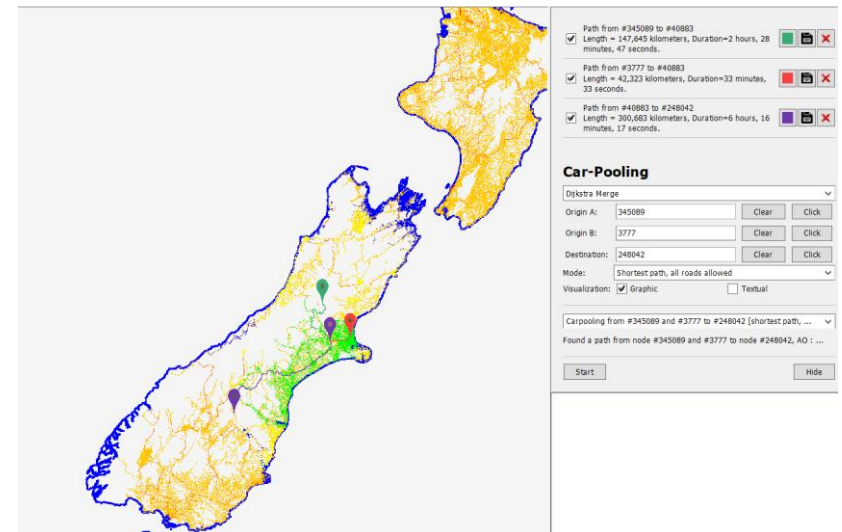
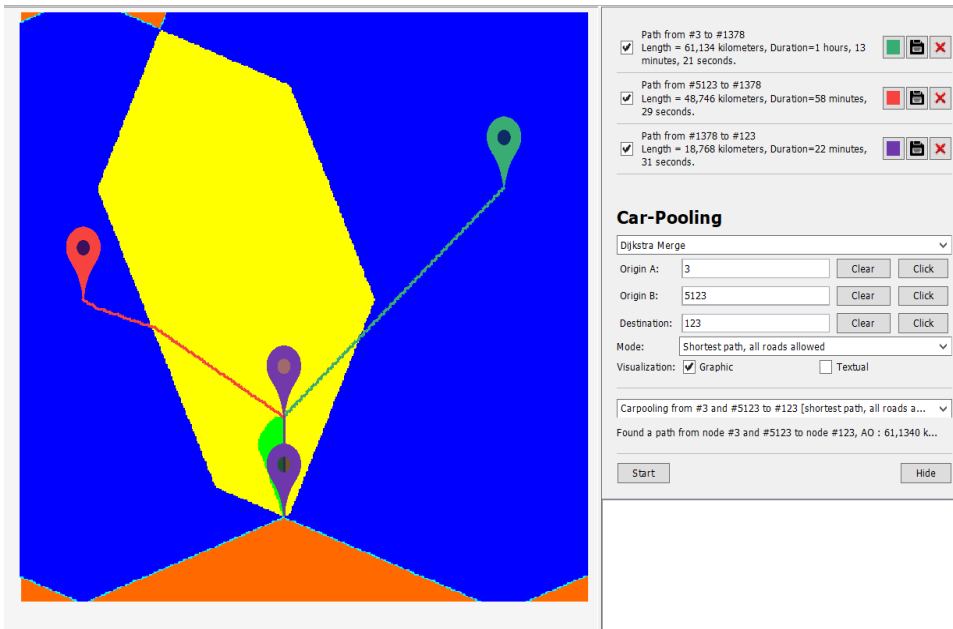
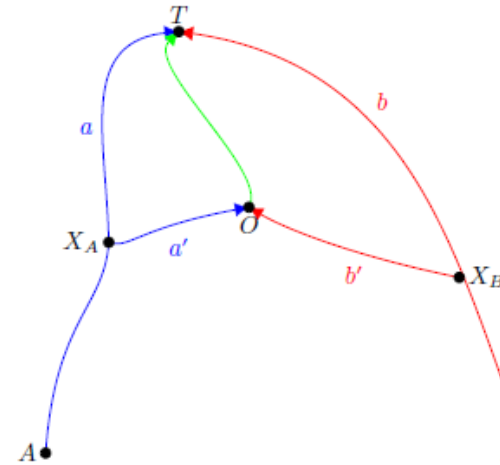
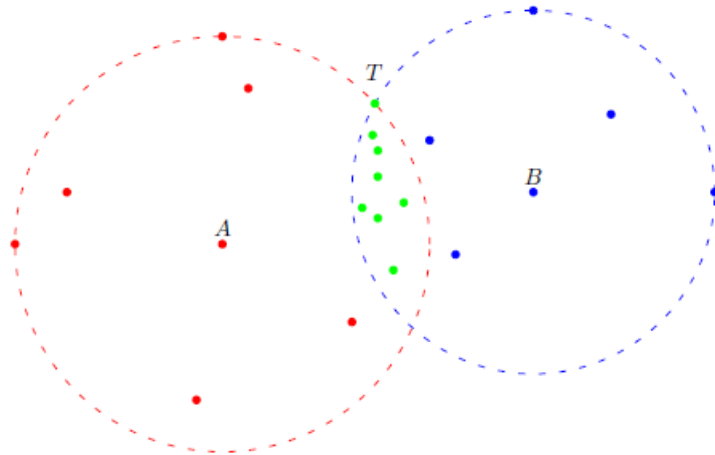
Start Hide

Performance test of Dijkstra and AStar algorithms(Shortest mode)

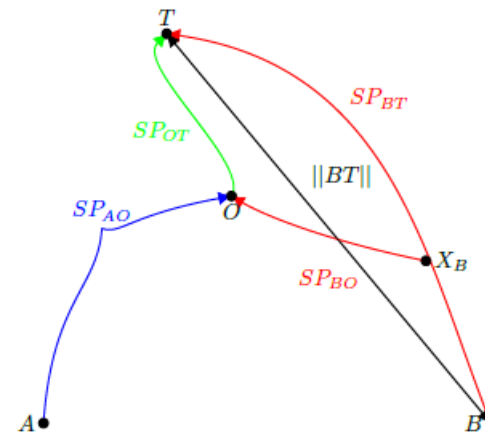


Performance test of Dijkstra and AStar algorithms(Fastest mode)

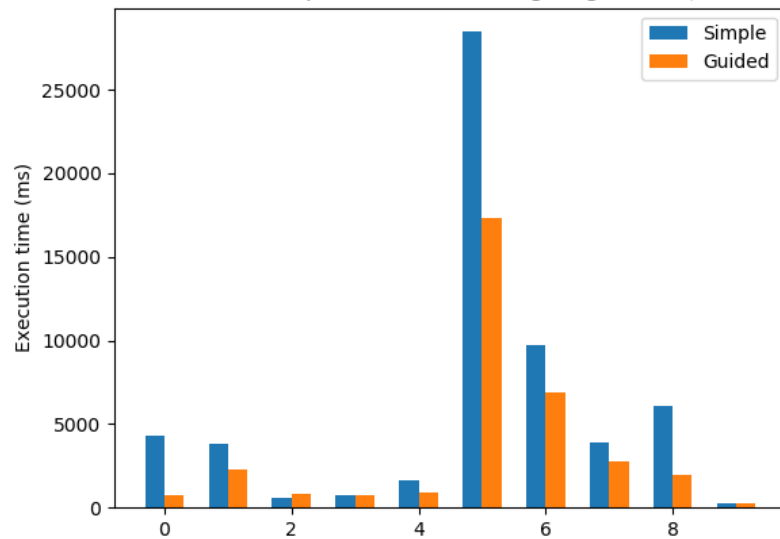




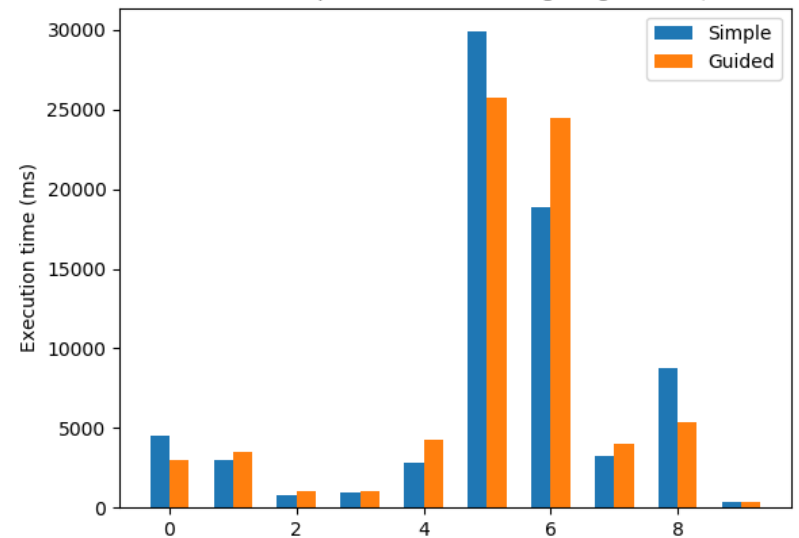
Guided Merge



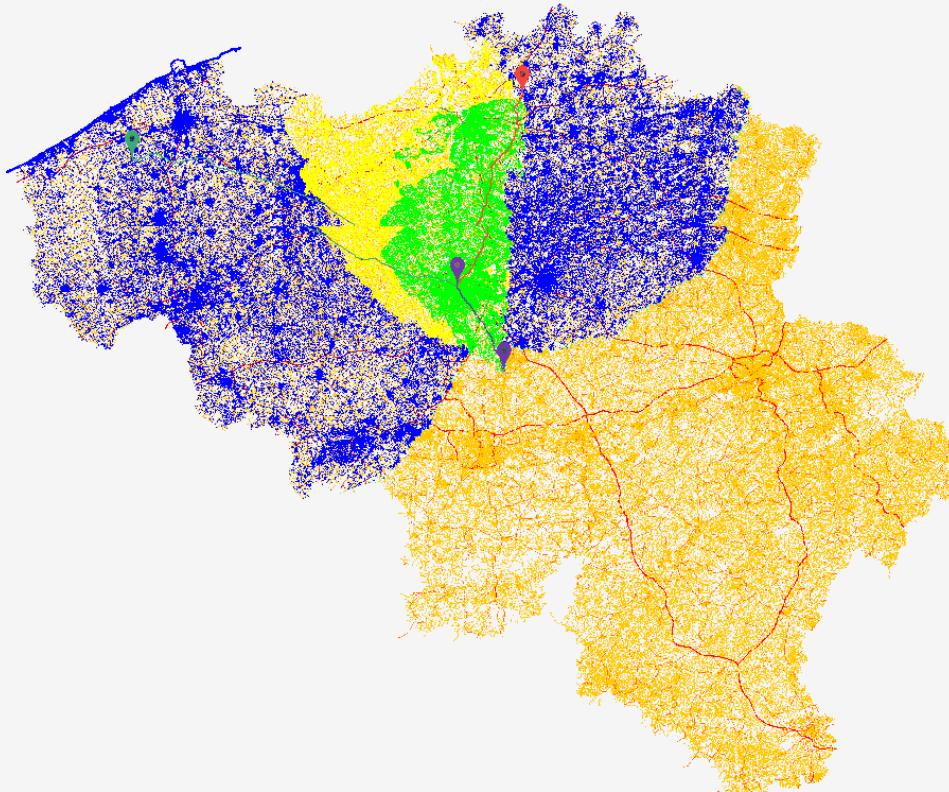
Performance test of Simple and Guided merge algorithms(Shortest mode)












Performance test of Simple and Guided merge algorithms(Fastest mode)



Guided Merge



- ☒ Path from #348393 to #31668
Length = 105,561 kilometers, Duration=1 hours, 35 minutes, 33 seconds.   
- ☒ Path from #497020 to #31668
Length = 55,676 kilometers, Duration=2 hours, 47 minutes, 24 seconds.   
- ☒ Path from #31668 to #752058
Length = 32,289 kilometers, Duration=1 hours, 4 minutes, 27 seconds.   

Car-Pooling

Guided Merge ▼

Origin A:

Origin B:

Destination:

Mode: ▼

Visualization: ☒ Graphic ☐ Textual

Carpooling from #348393 and #497020 to #752058 [shortest pat... ▼

Found a path from node #348393 and #497020 to node #752058, AO...

