



**Find the quickest
and safest route to
Medellin's streets**

Presentation of the team



Esteban Muriel
Research and
coding



Manuel Villegas
Research and
coding



Andrea Serna
Literature review



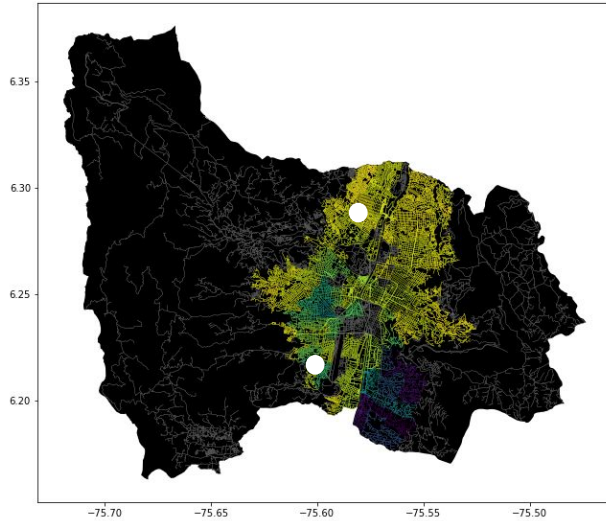
Mauricio Toro
Data preparation



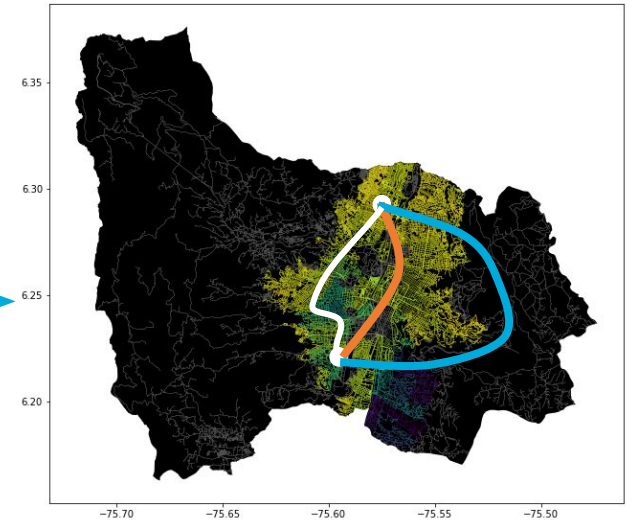
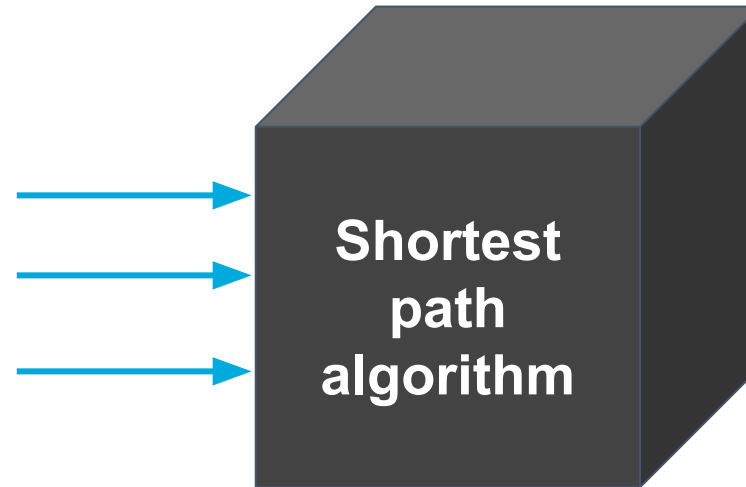
https://github.com/VillegasMich/Project_Datos1.git



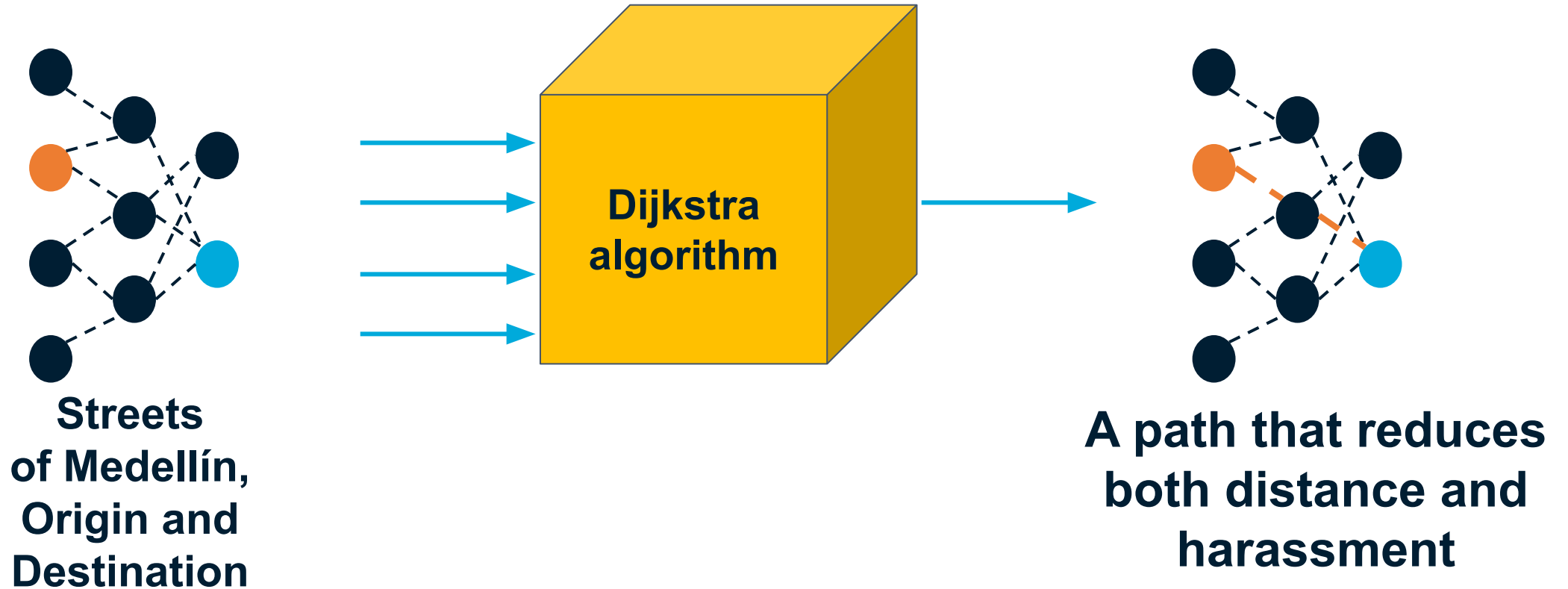
Problem Statement



**Streets
of Medellín,
Origin and
Destination**



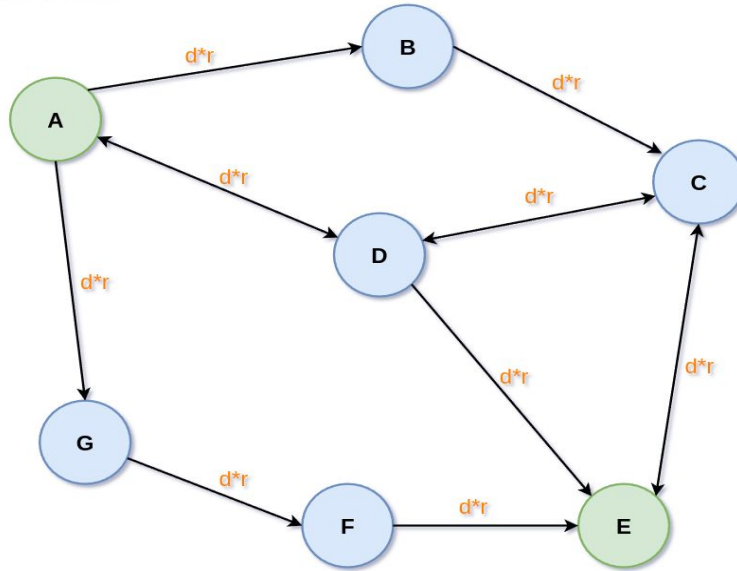
**Three paths that reduce
both the risk of harassment
and distance**



Explanation of the algorithm



d: Distance
r: harassment risk



The nodes are the map locations and the edges have a weight equal to the distance*risk (for our first option).

Complexity of the algorithm

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	Time complexity	Complexity of memory
Algorithm name	$O(V^2 * E * 2^V)$	$O(E! * V * E * E * 2^E)$
Algorithm name (if you have tried two)	$O(V * V * E * E * E)$	$O(E!)$

Create the table in Powerpoint. Do not copy pixelated screenshots of the white paper, please.

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Time and memory complexity of the algorithm name. V is...E is... (In this semester, it could be DFS, BFS, Dijkstra, A*). Please explain what V and E mean in this problem. **PLEASE, it is not helpful to put 'n'.**

Explain the tables in your own words

Include a high-definition image related to the problem of sexual street harassment.

Use superscripts to represent exponents. **Do NOT use the ^ symbol.**

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First path minimizing $d = ???$

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Origin	Destination	Distance (meters)	Risk of harassment (between 0 and 1)
EAFIT University	National University	??	??

Distance and risk of harassment for the path that minimizes $d = ??$. Execution time of ?? seconds.

Explain the tables in your own words

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Second path minimizing $d = ???$

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Origin	Destination	Distance (meters)	Risk of harassment (between 0 and 1)
EAFIT University	National University	??	??

Distance and risk of harassment for the path that minimizes $d = ??$. Execution time of ?? seconds.

Explain the tables in your own words

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Third path minimizing $d = ???$

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Origin	Destination	Distance (meters)	Risk of harassment (between 0 and 1)
EAFIT University	National University	??	??

Distance and risk of harassment for the path that minimizes $d = ??$. Execution time of ?? seconds.

Explain the tables in your own words

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Visual comparison of the three paths

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Use a library to draw the map and plot the three roads between Eafit and Universidad Nacional. For example, use geopandas, pydeck or google maps.



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Future work directions



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Probability

• • • • •
Other risk
estimates

Delete this
if you study
Informatics engineering

Optimization 1

• • • • •
Optimization
Bi target

Please tell us what you could do, in the following courses,
to improve this project.

Statistics 2

• • • • •
MV risk
estimates

M & S 4

• • • • •
Traffic
Estimation

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points.

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change some future
work addresses

Future work directions



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Databases

Other
variables

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if you study
Mathematics
Engineering

Please name the courses in which you could continue to
work on this project.

Project 1

Web
application

Please tell us what you could do, in the following courses,
to improve this project.

Software
Engineering

Mobile
application

Project 2

Include
ML or VR

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Report accepted in OSF.IO

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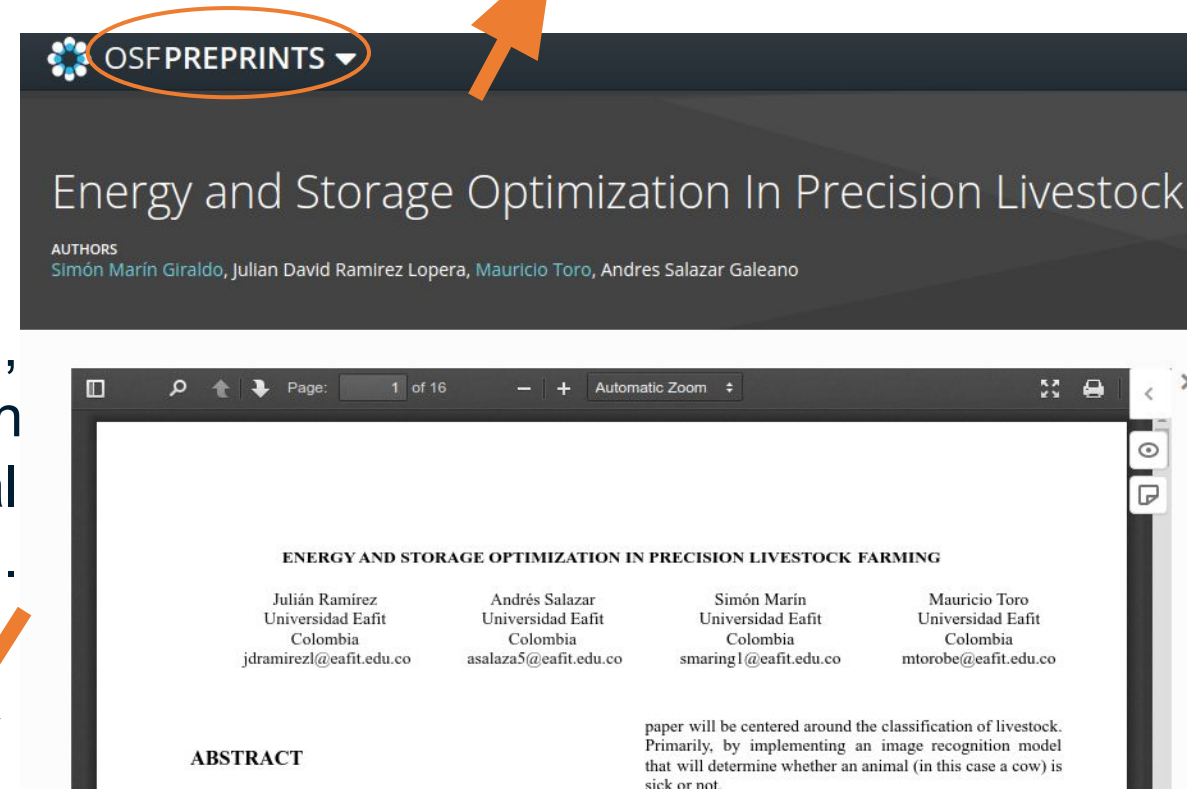
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Julián Ramírez, Andrés Salazar, Simón Marín, Mauricio Toro. Energy and Storage Optimization in Precision Livestock Farming. Technical Report, Universidad EAFIT, 2021.
<https://doi.org/10.31219/osf.io/du8yt>

Include a screenshot of your published report on osf.io and remove the circle



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Include monitors and teachers among the authors, please.

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picture*

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*Don't forget your scholarship
acknowledgements (if you have one) For
others, for those who pay your tuition
fees*

THANK YOU!

With the support of

The first two authors were supported by the Sapiencia grant, financed by the municipality of Medellín. All authors are grateful to the Vice Rector's Office for Discovery and Creation, Universidad EAFIT, for their support in this research.

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points.*