

A photograph of three men on a street in Medellín. Two men in light blue shirts are standing and talking to a third man in a green and white checkered shirt who is leaning against a red wall. The wall has graffiti, including a large white 'S'. A mailbox with the number '279' is visible on the wall. The scene is brightly lit, suggesting daytime. The text 'USE OF ALGORITHMS FOR PEDESTRIAN SAFETY AGAINST HARASSMENT IN MEDELLIN' is overlaid on the right side of the image.

USE OF ALGORITHMS FOR PEDESTRIAN SAFETY AGAINST HARASSMENT IN MEDELLIN

Team Presentation



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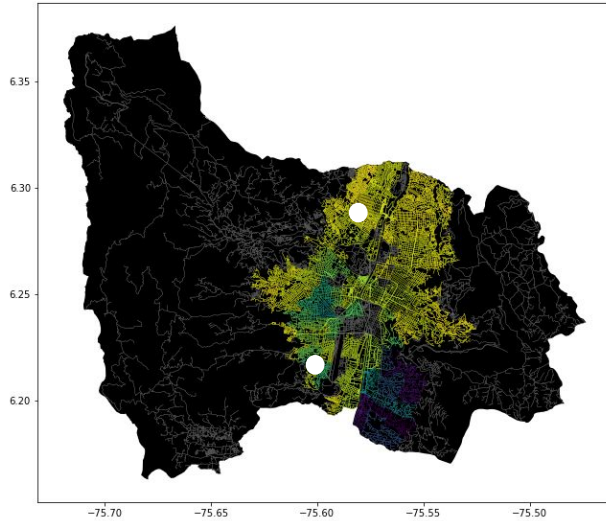


Mauricio Toro
Data preparation

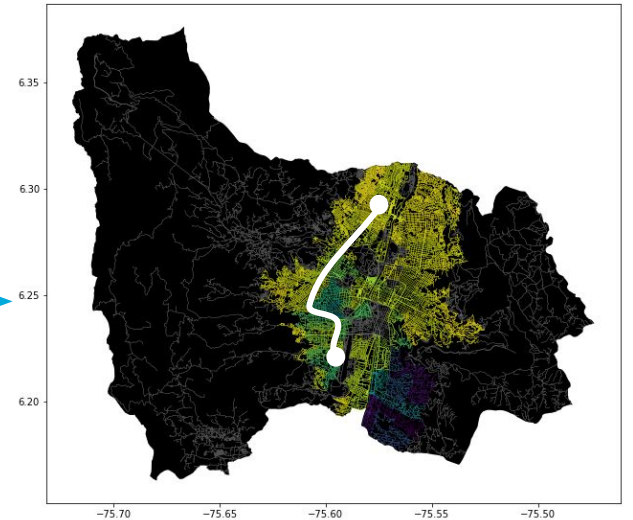
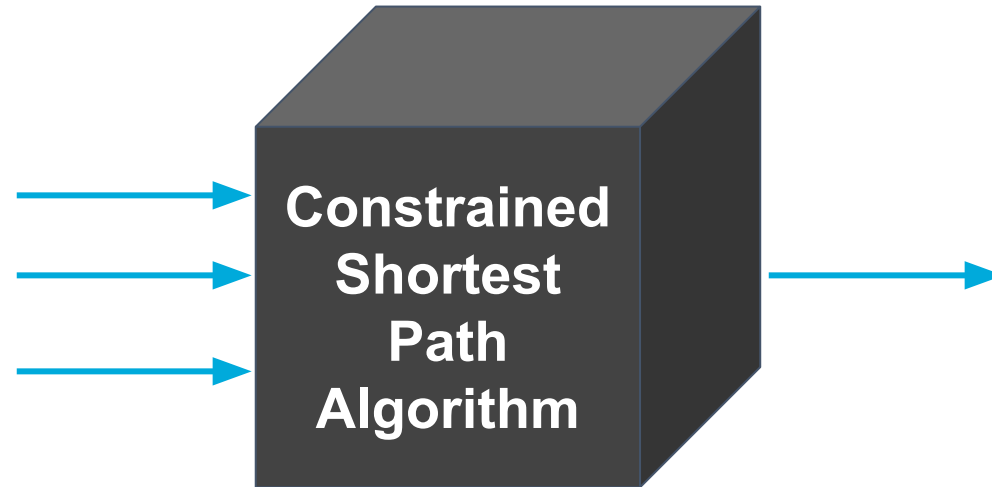


<https://github.com/QuitoTactico/proyecto>

Problem Statement



**Streets
of Medellín,
Origin and
Destination**



**Constrained
Shortest
Paths**

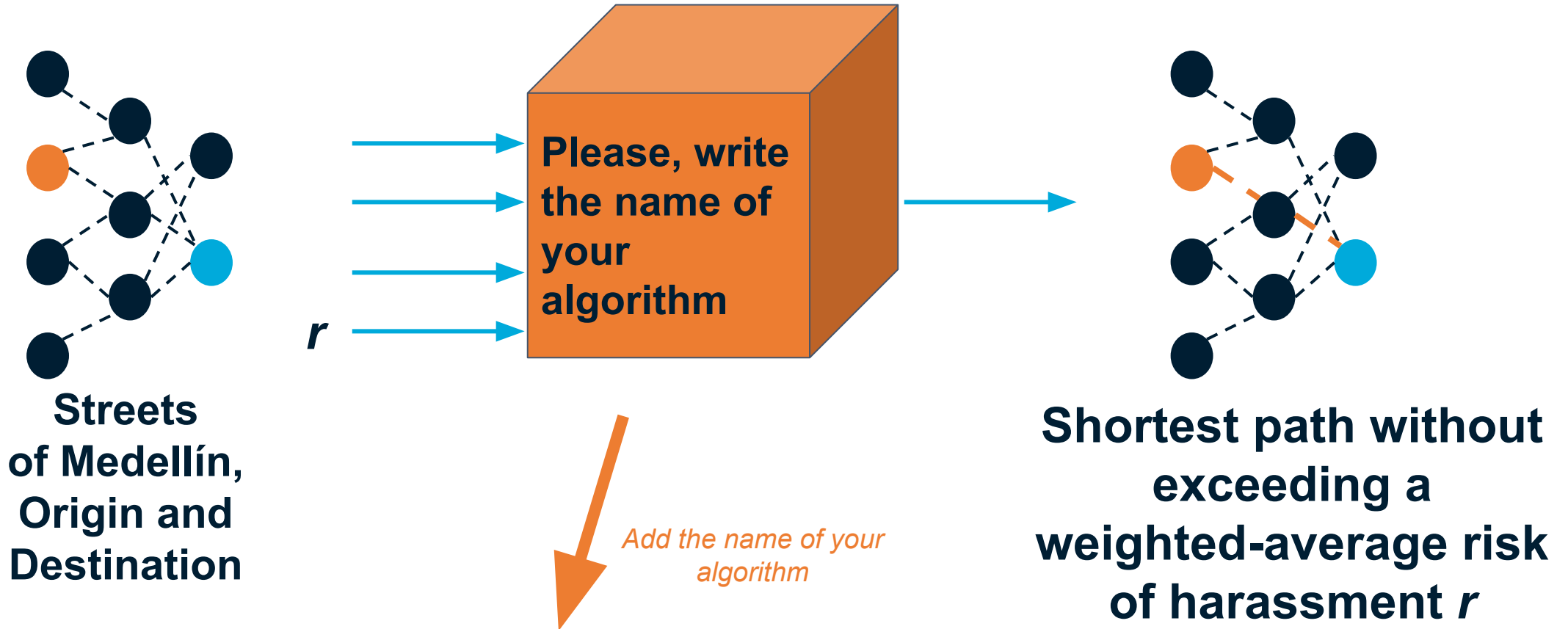
First Algorithm

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deliverable



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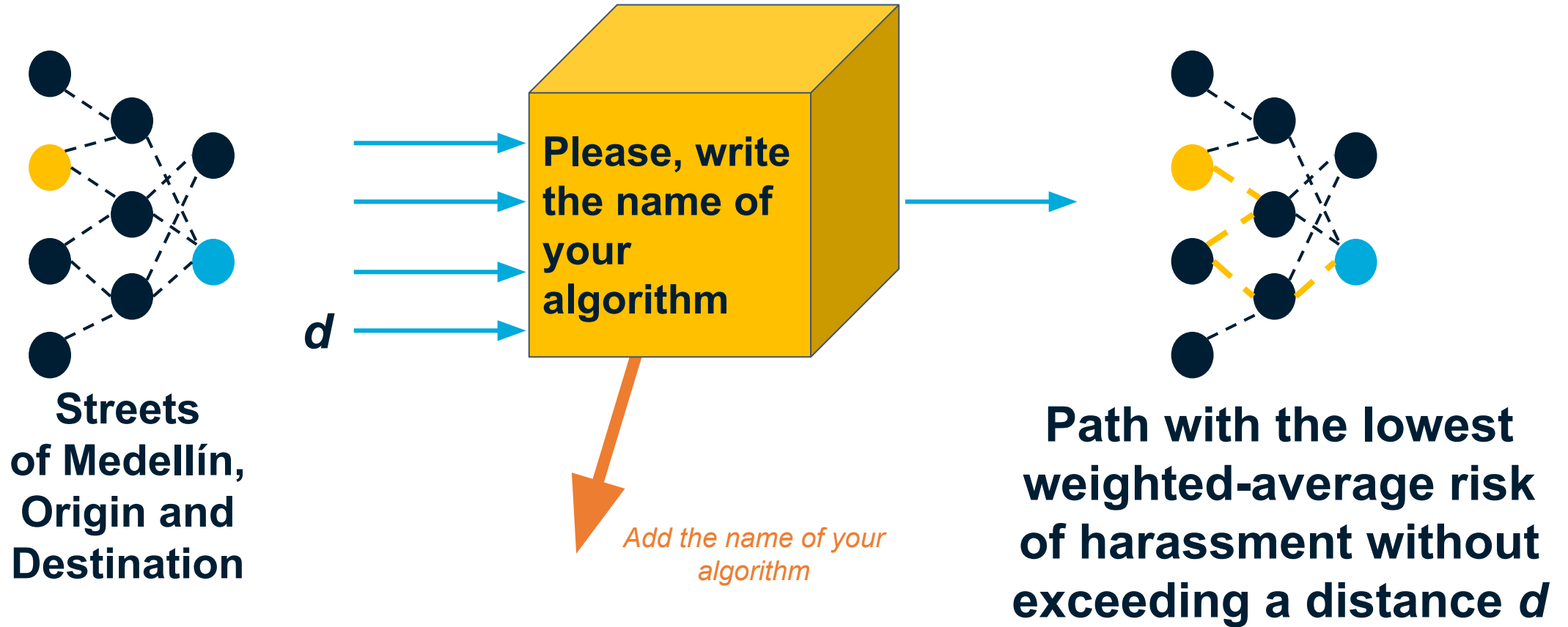
Second Algorithm

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Algorithm Explanation

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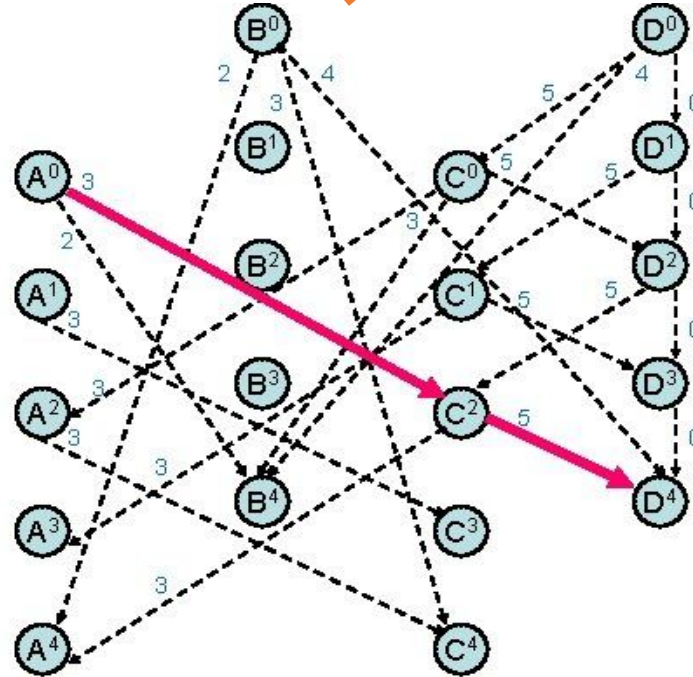
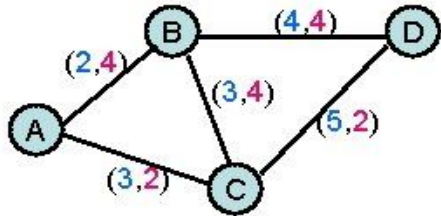
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Use these
Colors for
Your figures

Design you own figures in Lucidchart or
equivalent: <https://www.lucidchart.com/>



‘Algorithm Name’ for the Constrained Shortest Path

(In this semester, one could be DFS, BFS, Dijkstra, A*... please choose).

Include a HD picture related to the
problem of street sexual
harassment

Explain the figures in your
own words

Algorithm Complexity

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	Time Complexity	Memory Complexity
Algorithm name	$O(V^2 * E * 2^V)$	$O(V * E * 2^E)$
Algorithm name (if you tried two)	$O(V * V)$	$O(E)$

Create the table in Powerpoint. Do not copy pixelated screenshots from the technical report please!

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Time and memory complexity of the algorithm name. V is...E is... (In this semester, one could be DFS, BFS, Dijkstra, A*). Please explain what do V and E mean in this problem. **PLEASE DO IT!**

Explain the tables in your own words

Include a HD picture related to the problem of street sexual harassment

Use superindices to represent the exponents. **DO NOT** use the ^ symbol

Font size should be of at least 22 points

Shortest Path Results

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copy pixelated screenshots from the
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Origin	Destination	Shortest distance (meters)	Without exceeding a weighted-average risk of harassment
Universidad EAFIT	Universidad de Medellín	??	0.84
Universidad de Antioquia	Universidad Nacional	???	0.83
Universidad Nacional	Universidad Luis Amigó	??	0.85

Shortest distance obtained without exceeding a weighted average risk of harassment r .

Explain the tables in your
own words

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Lowest Risk Results

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Origin	Destination	Weighted-average risk of harassment	Without exceeding a distance (meters)
Universidad EAFIT	Universidad de Medellín	??	5000
Universidad de Antioquia	Universidad Nacional	???	7000
Universidad Nacional	Universidad Luis Amigó	??	6500

Lowest weighted-average risk of harassment obtained without exceeding a distance d .

Explain the tables in your
own words

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Algorithm Execution Times



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⌚ Execution Times



2 hours 51 minutes



6 hours 51 minutes



8 hours 51 minutes



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Please, include measurement units, for
instance, minutes, hours...



Future Work Directions



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Probability

• • • • •
Other risk
estimations

Remove this
slide if you
study
Informatics
Engineering

Optimization 1

• • • • •
Biobjective
optimization

Please, name what you could do, in following courses, to
improve this project

Please, name the courses in which you could continue
working on this project

Statistics 2

• • • • •
MV risk
estimations

S & M 4

• • • • •
Traffic
Estimation

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You may add, remove or
change some future
work directions

Future Work Directions



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Databases

• • • • •
Add other
variables

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slide if you
study
Mathematics
Engineering

Project 1

• • • • •
A Web
Application

Please, name what you could do, in following courses, to
improve this project

Please, name the courses in which you could continue
working on this project

Software Eng.

• • • • •
A Web
Application

Project 2

• • • • •
Include
ML or VR

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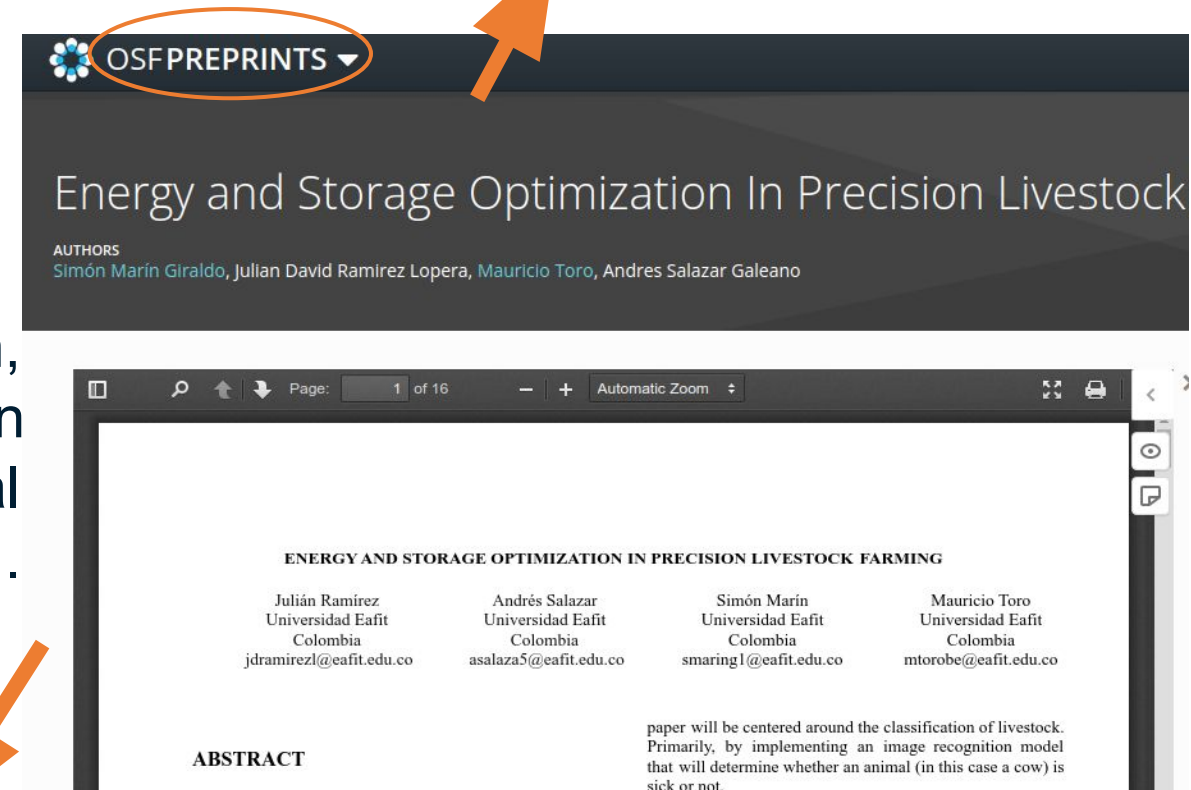
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OSF projects, but in OSF Preprints.

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>



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published in osf.io and remove circle

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Include teaching assistant and professor
among the authors, please

*You may change this
photograph*

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*Please do not forget the
acknowledgements to your scholarship
(if you have one) Otherwise, for who
pays your tuition fee*

THANK YOU!

Supported by

The first two authors were supported by Sapiencia grant, financed by Medellín municipality. All the authors would like to thank the "Vicerrectoría de Descubrimiento y Creación", of Universidad EAFIT, for their support on this research.

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