

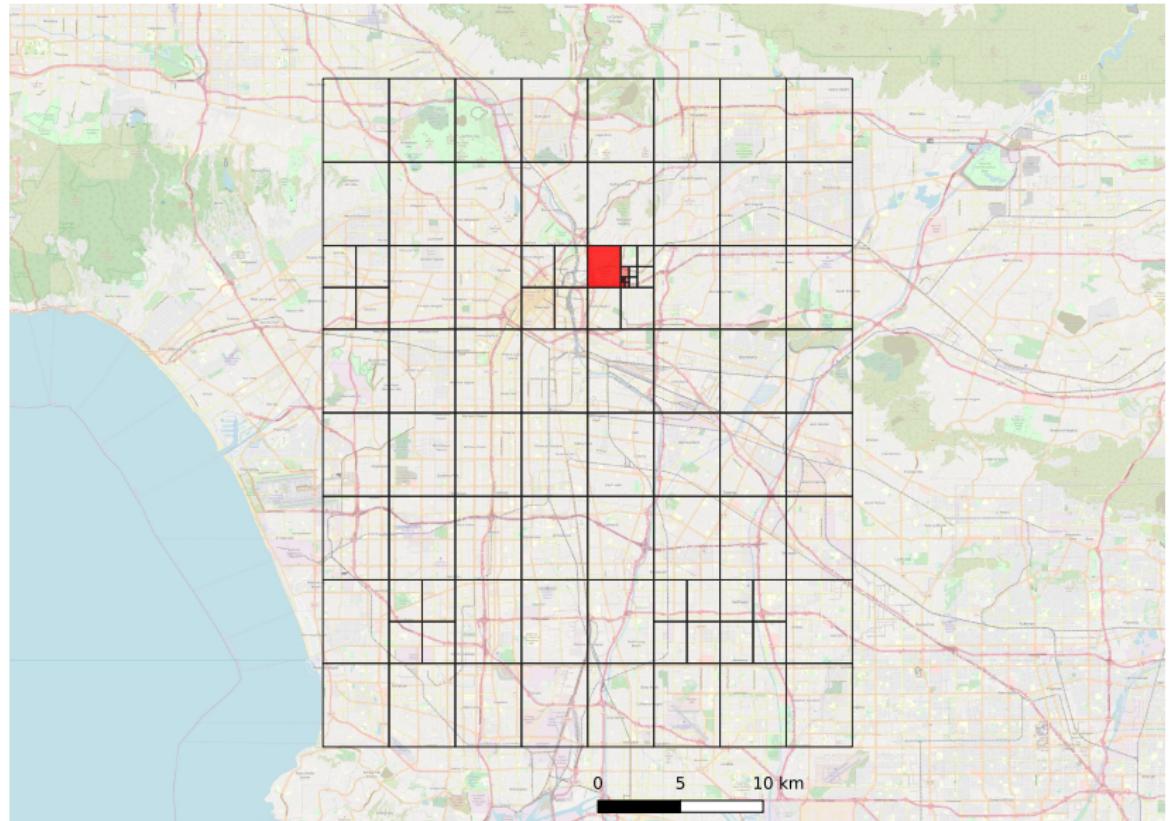
PFLOCK Report

Andres Calderon

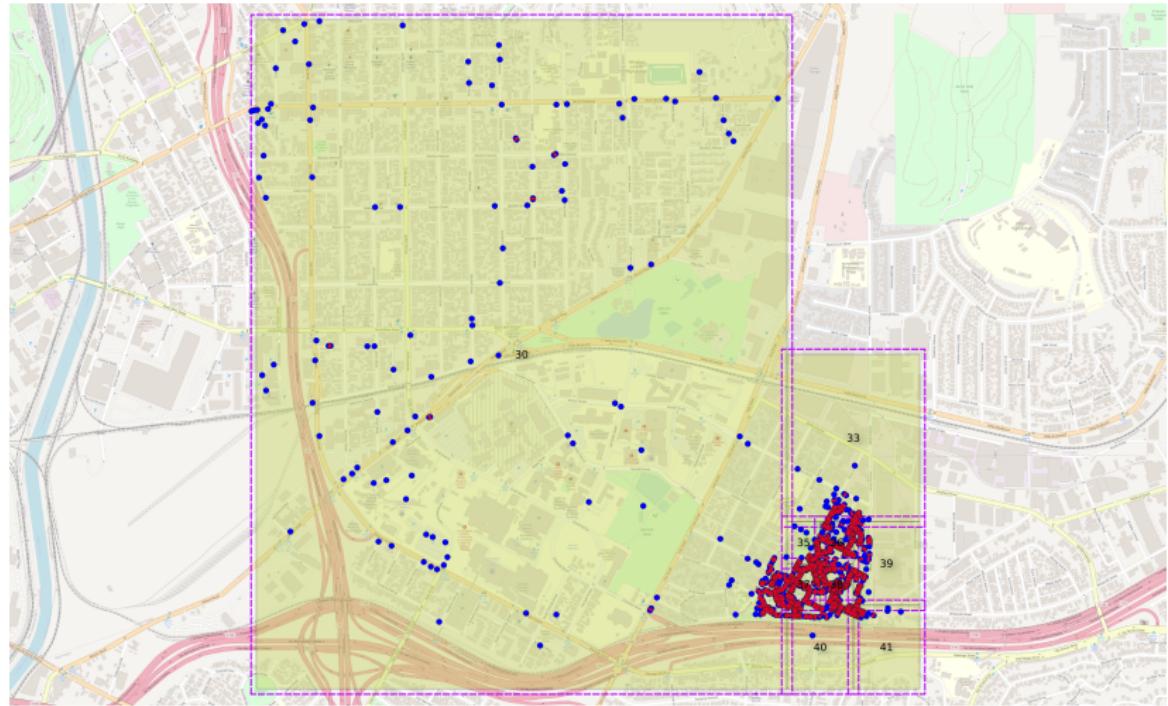
University of California, Riverside

February 15, 2023

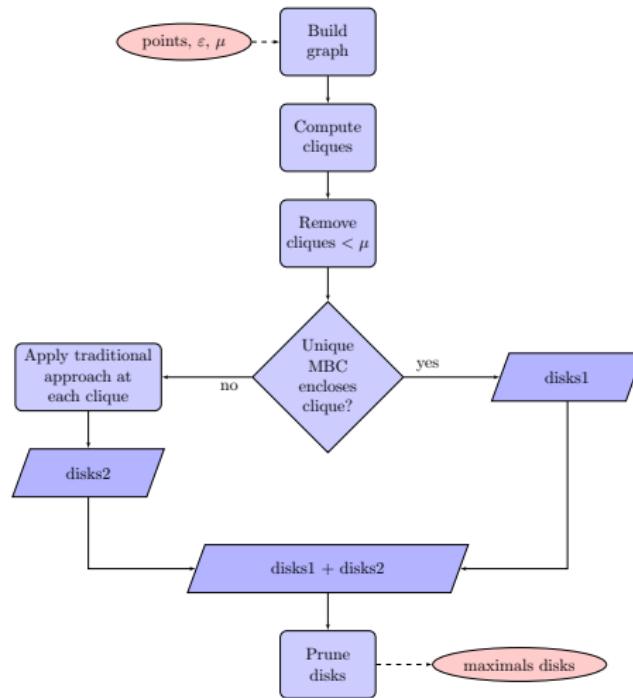
The problem...



The problem...



Reducing the number of disks...



Approach...

Measuring three alternatives:

- ▶ Collect: apply BFE once over all the remained points.
- ▶ Each: apply BFE many times with the points of each disk.
- ▶ Hash: organize the disks in groups (according to points in common) and apply BFE at each group.

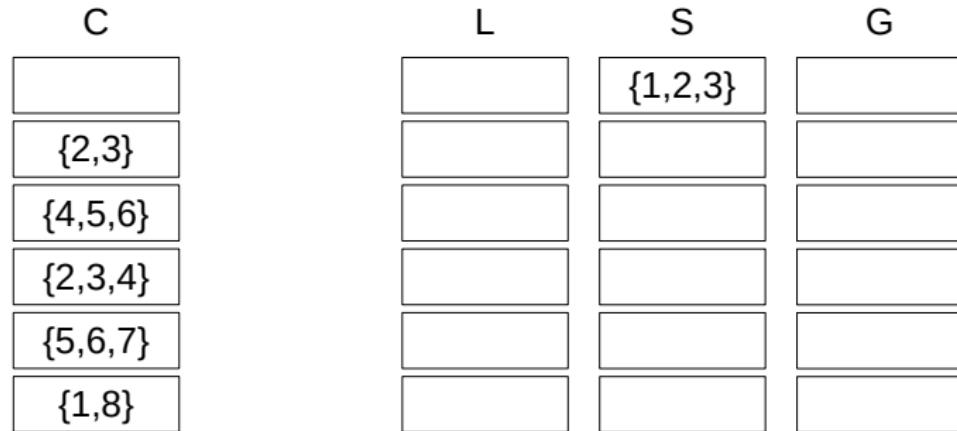
Hash Variant...

Logic

C	L	S	G
{1,2,3}			
{2,3}			
{4,5,6}			
{2,3,4}			
{5,6,7}			
{1,8}			

Hash Variant...

Logic



Hash Variant...

Logic

C	L	S	G
	1:{2,3}		1:{1,2,3}
			1:{2,3}
{4,5,6}			
{2,3,4}			
{5,6,7}			
{1,8}			

Hash Variant...

Logic

C	L	S	G
	1:{2,3}	{4,5,6}	1:{1,2,3}
			1:{2,3}
{2,3,4}			
{5,6,7}			
{1,8}			

Hash Variant...

Logic

C	L	S	G
	1:{2,3}	{4,5,6}	1:{1,2,3}
			1:{2,3}
			1:{2,3,4}
{5,6,7}			
{1,8}			

Hash Variant...

Logic

C	L	S	G
	1:{2,3}		1:{1,2,3}
	2:{5,6}		1:{2,3}
			1:{2,3,4}
			2:{4,5,6}
			2:{5,6,7}
{1,8}			

Hash Variant...

Logic

C	L	S	G
	1:{2,3}	{1,8}	1:{1,2,3}
	2:{5,6}		1:{2,3}
			1:{2,3,4}
			2:{4,5,6}
			2:{5,6,7}

Hash Variant...

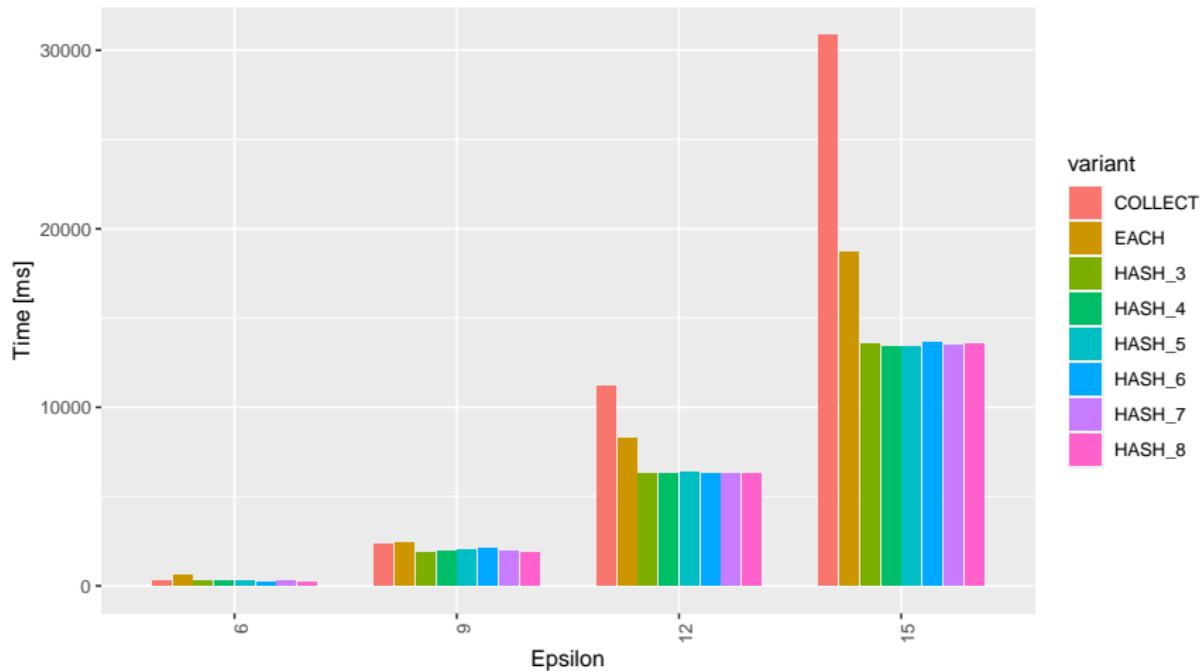
Logic

C	L	S	G
	1:{2,3}		1:{1,2,3}
	2:{5,6}		1:{2,3}
			1:{2,3,4}
			2:{4,5,6}
			2:{5,6,7}
			-1:{1,8}

Experiments...

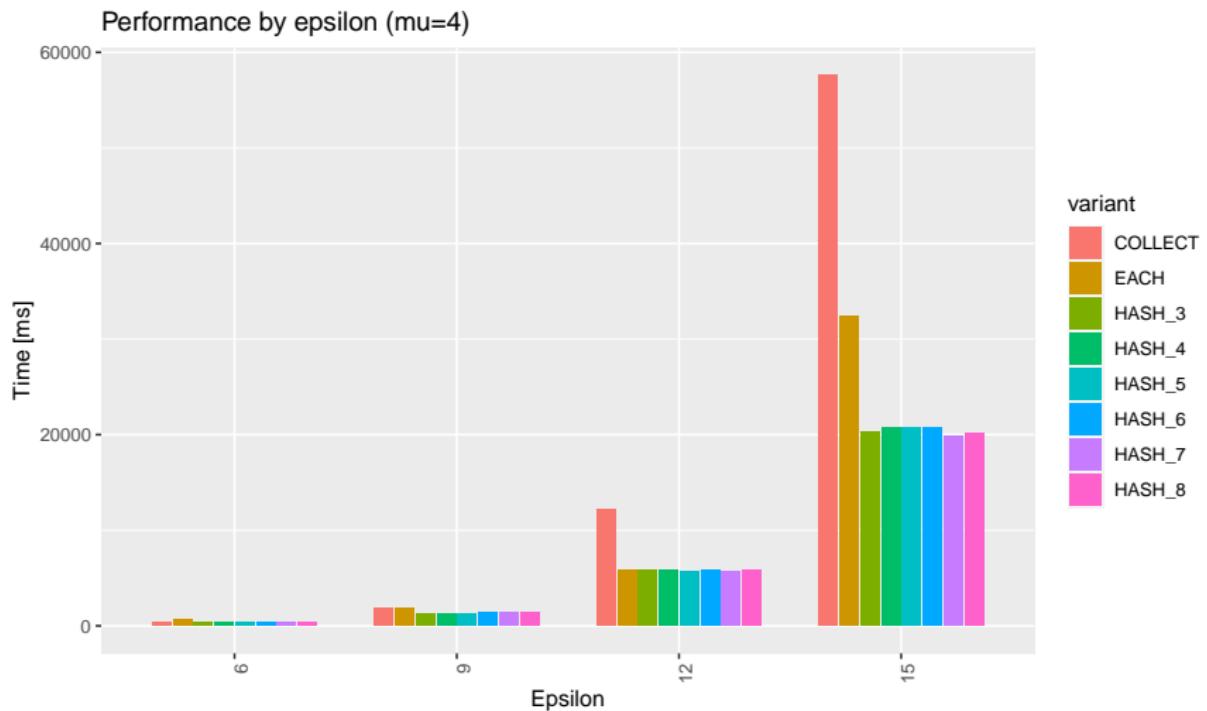
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Performance by epsilon ($\mu=4$)



Experiments...

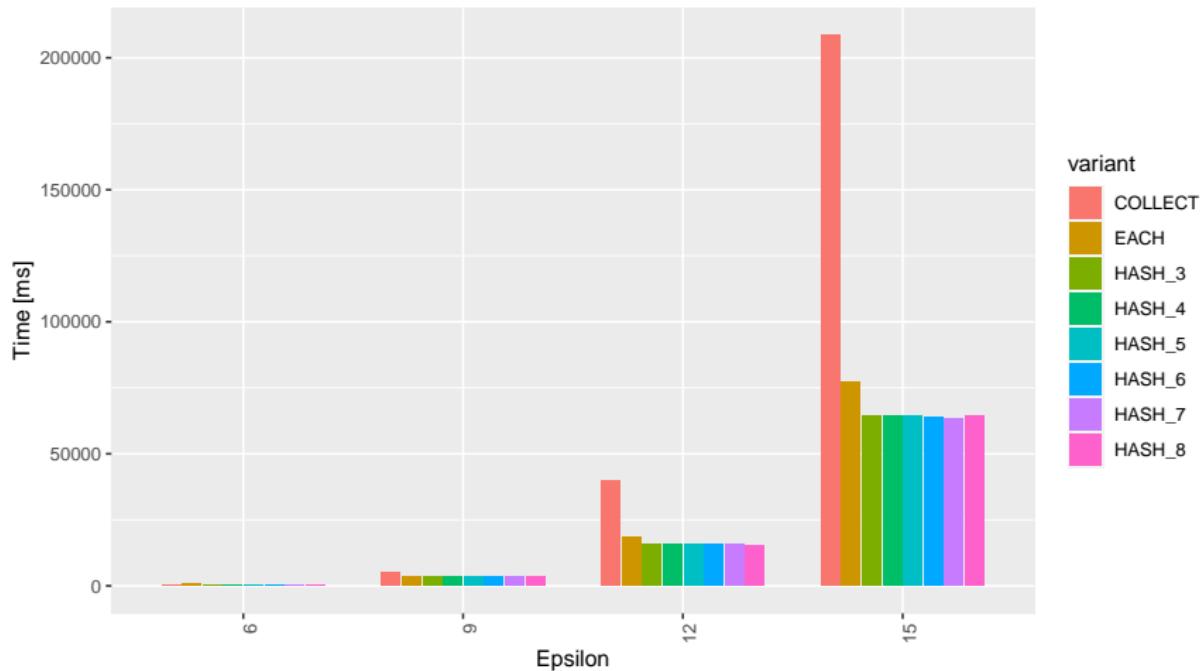
[Cell: 94]



Experiments...

[Cell: 95]

Performance by epsilon ($\mu=4$)



Experiments...

[Cell: 96]

Performance by epsilon ($\mu=4$)

