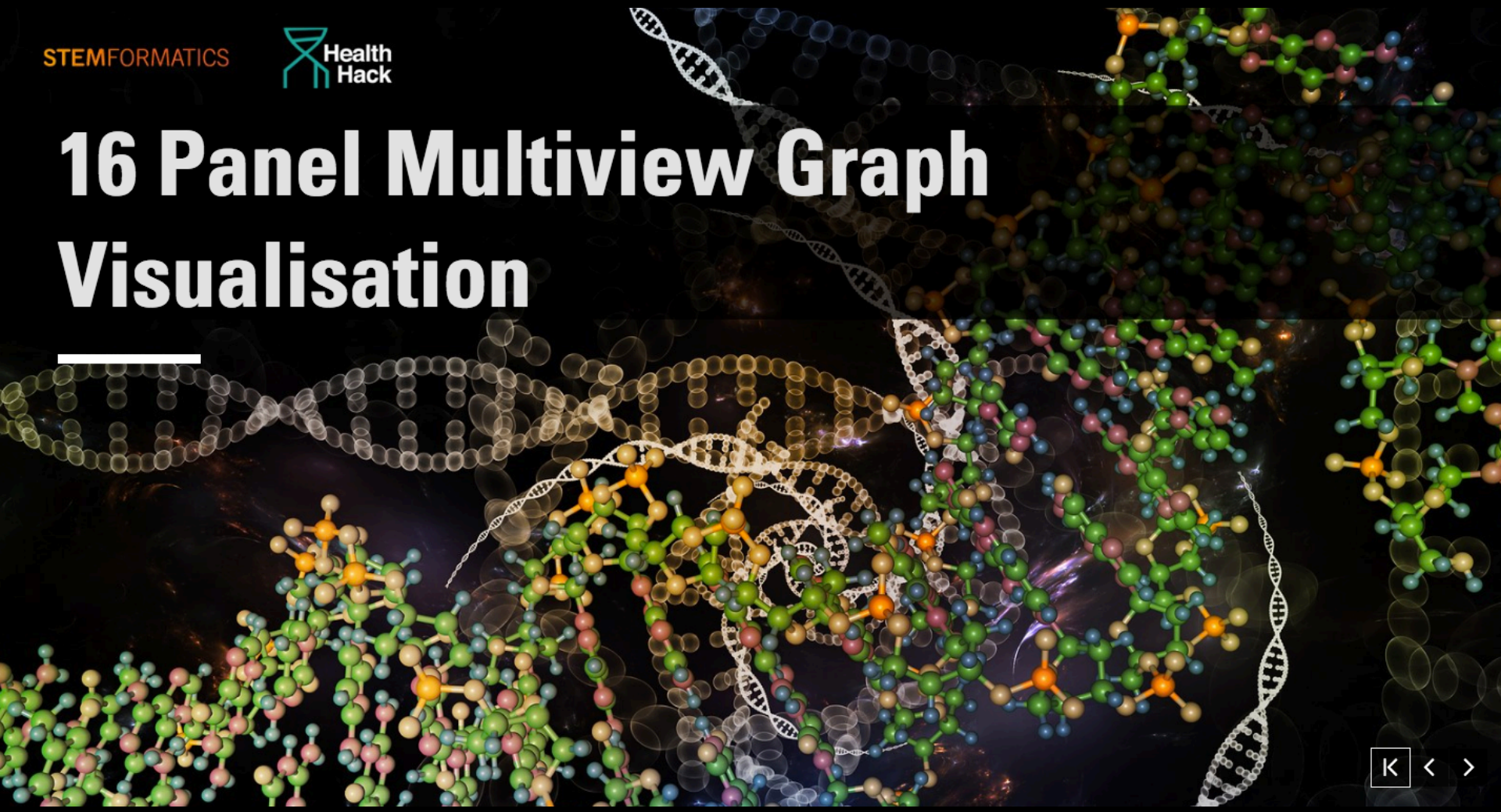
STEMFORMATICS

Health Hack

16 Panel Multiview Graph Visualisation



Problem and Success Criteria

Problem

- **Multi-omics datasets** are the "Big data" of expression data. As there is currently no practical way of integrating these datasets, the data must be displayed side by side.
- **Multiview** was designed for this purpose (at last year's Health Hack!), however it's time consuming for users to open more than 4 graphs and switch between open pages to draw correlations between data.
- **The graphs** are currently rendered server side which hinders the potential to dramatically improve application functionality and performance.
- **The limitations**: graphs are restricted to the one same viewing size, a maximum of only four graphs can be displayed at a given time, and rendering time can be slow even with only four graphs.

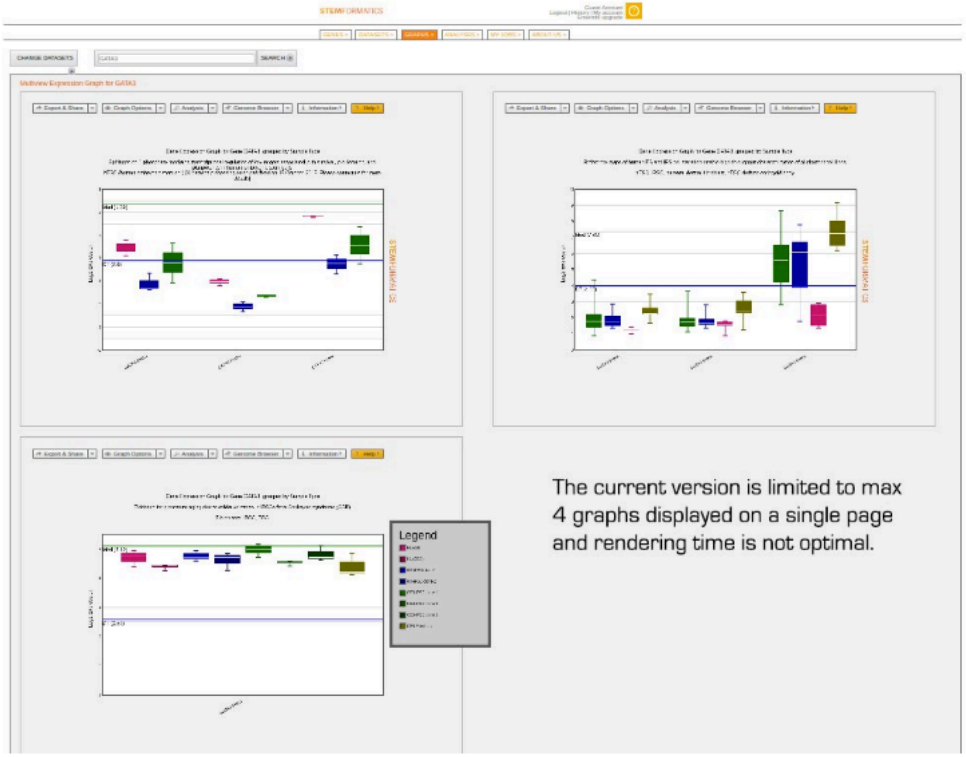
Problem and Success Criteria

Solution Success Criteria

1. Allow users to view up to 18 graphs on the one page and display a chosen graph larger than the rest - *Achieved*
2. Increase the speed and quality of rendering multiple graphs - *Achieved*
3. Optimise backend architecture to leverage the cloud to be more efficient - *Achieved*

1. Allow users to view up to 18 graphs on the one page and display a chosen graph larger than the rest…

Stemformatics Before



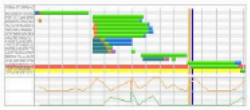
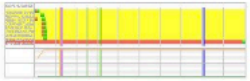
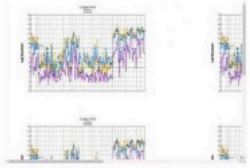
The current version is limited to max 4 graphs displayed on a single page and rendering time is not optimal.

Enhanced by Stemflow

2. Increase the speed and quality of rendering multiple graphs - *Achieved*

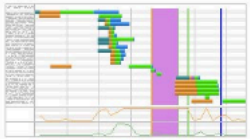
Stemformatics Before
3 seconds to load 4 graphs

						Document Complete			Fully Loaded			
	Load Time	First Byte	Start Render	Speed Index	DOM Elements	Time	Requests	Bytes In	Time	Requests	Bytes In	Cost
First View	2.258s	0.763s	-	0	31734	2.258s	15	192 KB	3.001s	16	250 KB	$----
Repeat View	4.035s	0.099s	1.584s	2879	31734	4.035s	8	3 KB	4.999s	9	3 KB	

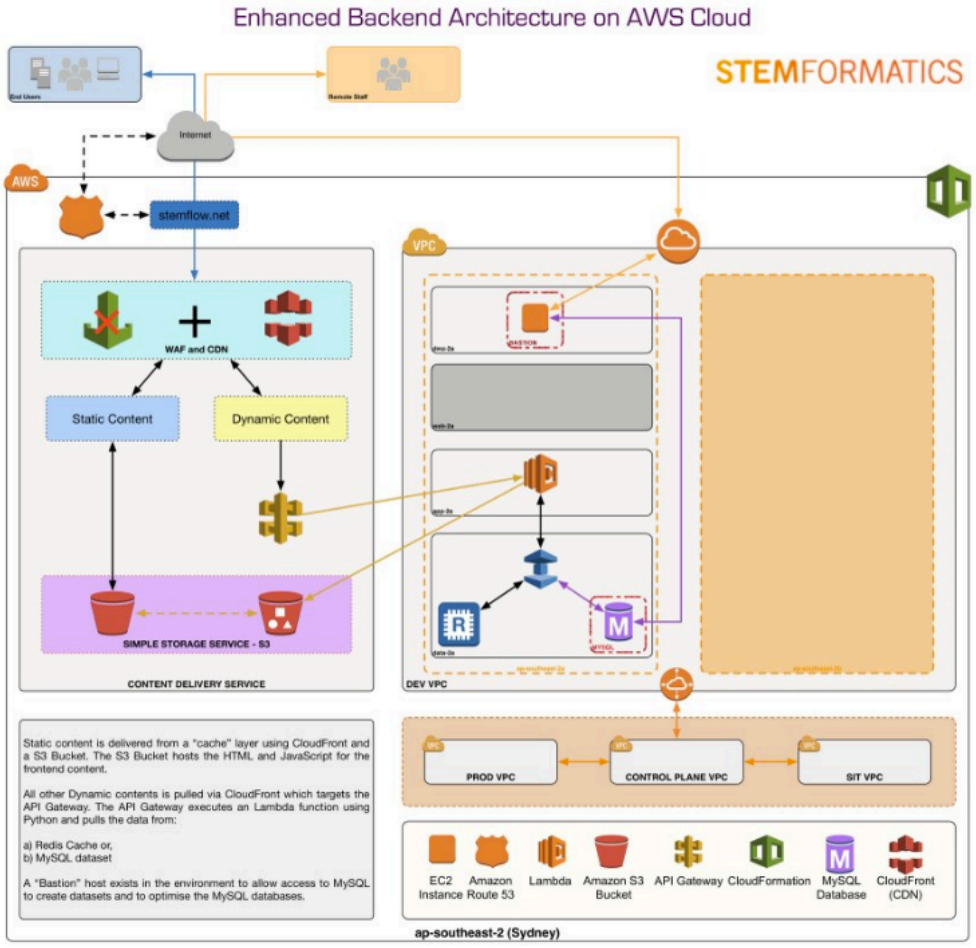
	Waterfall	Screen Shot	Video
First View (2.258s)			Filmstrip View - Watch Video
Repeat View (4.035s)			Filmstrip View - Watch Video
Content Breakdown			

Enhanced by Stemflow
3 seconds to load 18 graphs

						Document Complete			Fully Loaded			
	Load Time	First Byte	Start Render	Speed Index	DOM Elements	Time	Requests	Bytes In	Time	Requests	Bytes In	Cost
First View	2.914s	0.921s	2.387s	2509	398	2.914s	23	248 KB	3.278s	24	249 KB	$----
Repeat View	2.144s	0.765s	1.899s	1997	398	2.144s	2	25 KB	2.144s	2	25 KB	

	Waterfall	Screen Shot	Video
First View (2.914s)			Filmstrip View - Watch Video
Repeat View (2.144s)			Filmstrip View - Watch Video
Content Breakdown			

3. Optimise backend architecture to leverage the cloud to be more efficient - *Achieved*



We'd like to thank everyone involved in making this Health Hack weekend happen, especially the organisers.

Team Stemflow had a ball!!

STEMFLOW

Ariane Mora, Kevin Wessel, Peita Lin, Thomas Steel, Liam Van der Meer, Shaun Pearse, Nancy Blessing, Matthew Taylor

in demonstration

www.stemflow.net

"Problem solved."

- Ariane Mora, Stemformatics

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