SCC.NRG.AI4ME

Self-optimising distributed encoding networks

Thomas Swarbrick
PhD Candidate t.swarbrick@lancaster.ac.uk

What is an object in object based media?

- Customisation of Characteristic, but the meta characteristics remain constant.
- Large customisable overlap, but not computationally feasible on the client-side.

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XO

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Theorem

let position be time-series like such that.

$$A = \{S_0^A \cdots S_n^A\}, B = \{S_0^B \cdots S_m^B\}$$

where for a given object S_x assume.

$$S_x \in A, S_x \in B$$

$$A = \{S_x|\Sigma_1\}, B = \{S_x|\Sigma_2\}$$

such that.

$$\Sigma_1 \not\subset B, \Sigma_2 \not\subset A$$

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But how do you identify S_X? No idea.

Theorem

Assume S_x is identified, and we remove signal S_x from the sets.

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$$B = \Sigma_2 = \{S_y | \Sigma_3\}, C = \{S_y | \Sigma_4\}$$

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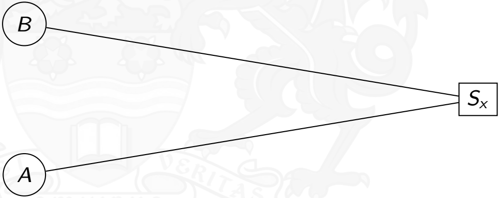
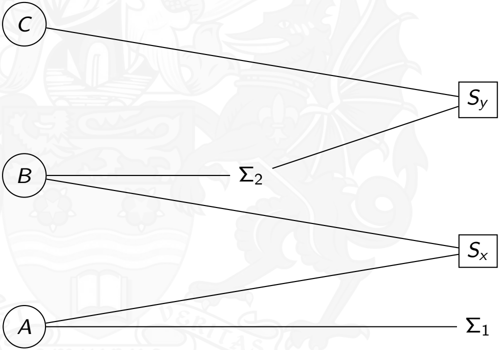
Figuring out if S_y is not in A or S_x? No Idea.

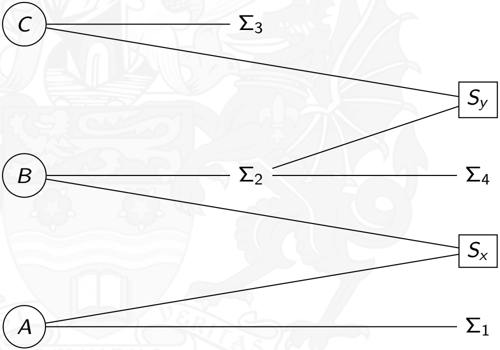

B
A
S_x

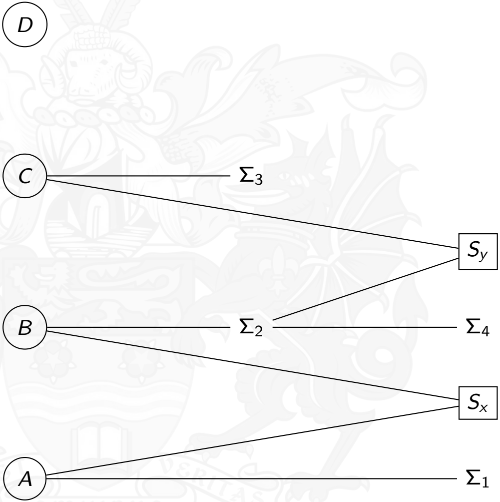


C
B
A
S_y
S_x
Σ_2
Σ_1

High Level Overview

Self-Optimising Objects





D
C
Σ_3
S_y
B
Σ_2
Σ_4
S_x
A
Σ_1

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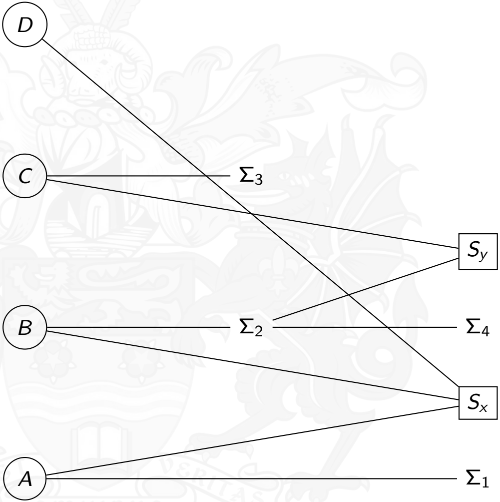

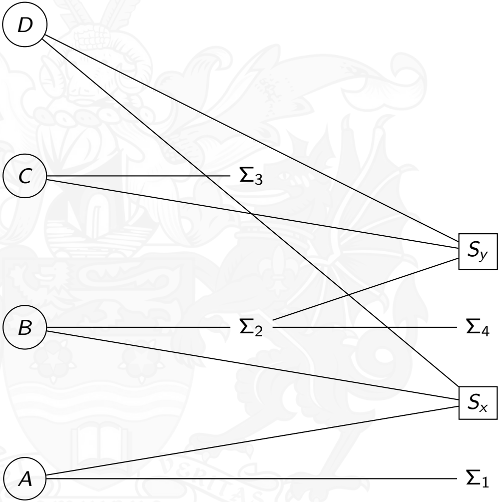
D
C
Σ_3
S_y
B
Σ_2
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A
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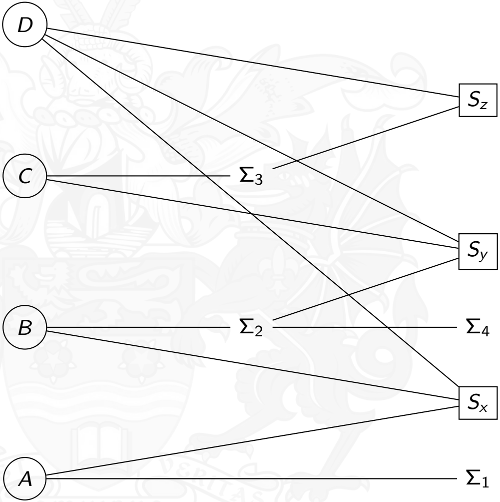
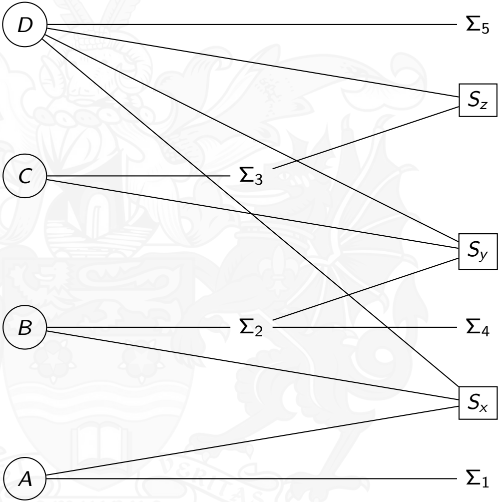
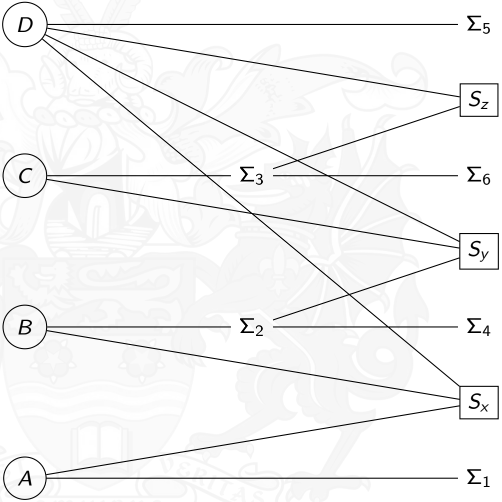


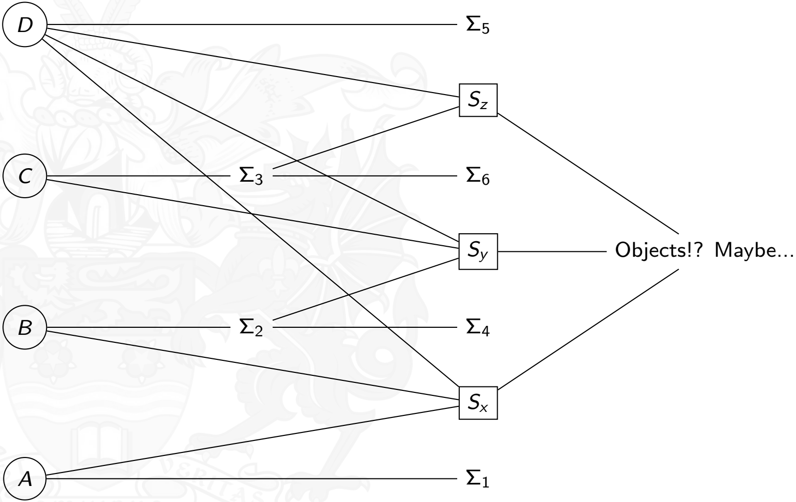
D
S_z
C
Σ_3
S_y
B
Σ_2
Σ_4
S_x
A
Σ_1



D
Σ_5
S_z
C
Σ_3
S_y
B
Σ_2
Σ_4
S_x
A
Σ_1



D
Σ_5
S_z
C
Σ_3
Σ_6
S_y
B
Σ_2
Σ_4
S_x
A
Σ_1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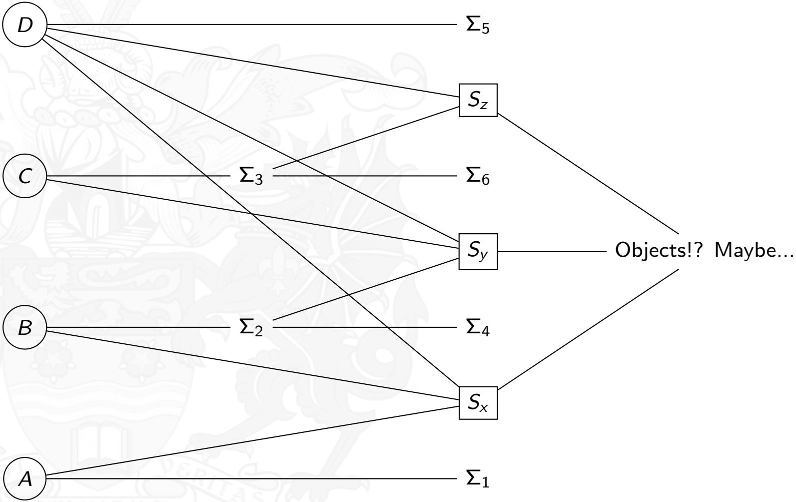
Objects!? Maybe...



How do you optimise the ordering for encoder objects? No idea.

Toy Example
Alice, Bob, Charlie, Dave

Client	Servicing Nodes
A	Σ_1, S_x
B	Σ_4, S_x, S_y
C	Σ_6, S_y, S_z
D	Σ_5, S_x, S_y, S_z

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D	Σ_5, S_x, S_y, S_z

Theorem

assume that if the set is an itemised set of objects.

$$\Sigma_n \to \emptyset$$

Discard Σ_n as remainder Over large number of nodes.

$$A = S_x, B = S_x, S_y \cdots$$

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How to Assess if Σ_n is just artefact or truly unique? No idea.

Similar Encoding properties/objects would be dynamically grouped, and cached to be distributed across a network.

Distributing Nodes
How does sub-division help us?

Similar Encoding properties/objects would be dynamically grouped, and cached to be distributed across a network.

Example

Add a new Client E. Existing parts of E that are already cached closer to the client fetch faster / optimisation to identify similar signals from a lower-quality/partially computed version.

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A	Σ_1, S_x
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E	Σ_7, S_z, S_y

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E	Σ_7, S_z, S_y

But how to identify S_z in E without full render? No idea.

Assuming that both signal A and B are correlated if they contain the same object with a different single change.

- Cross-Correlation?
- Steerable Pyramids?

Current Idea...

Network Distribution

How do you distribute this over a network?

Encoding/Decoding Weights

How do you identify ways to optimise self consumption/propagation