

# Hyperconnected Transportation Hub Design and Operation

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Moderator: Kevin Gue, University of Louisville

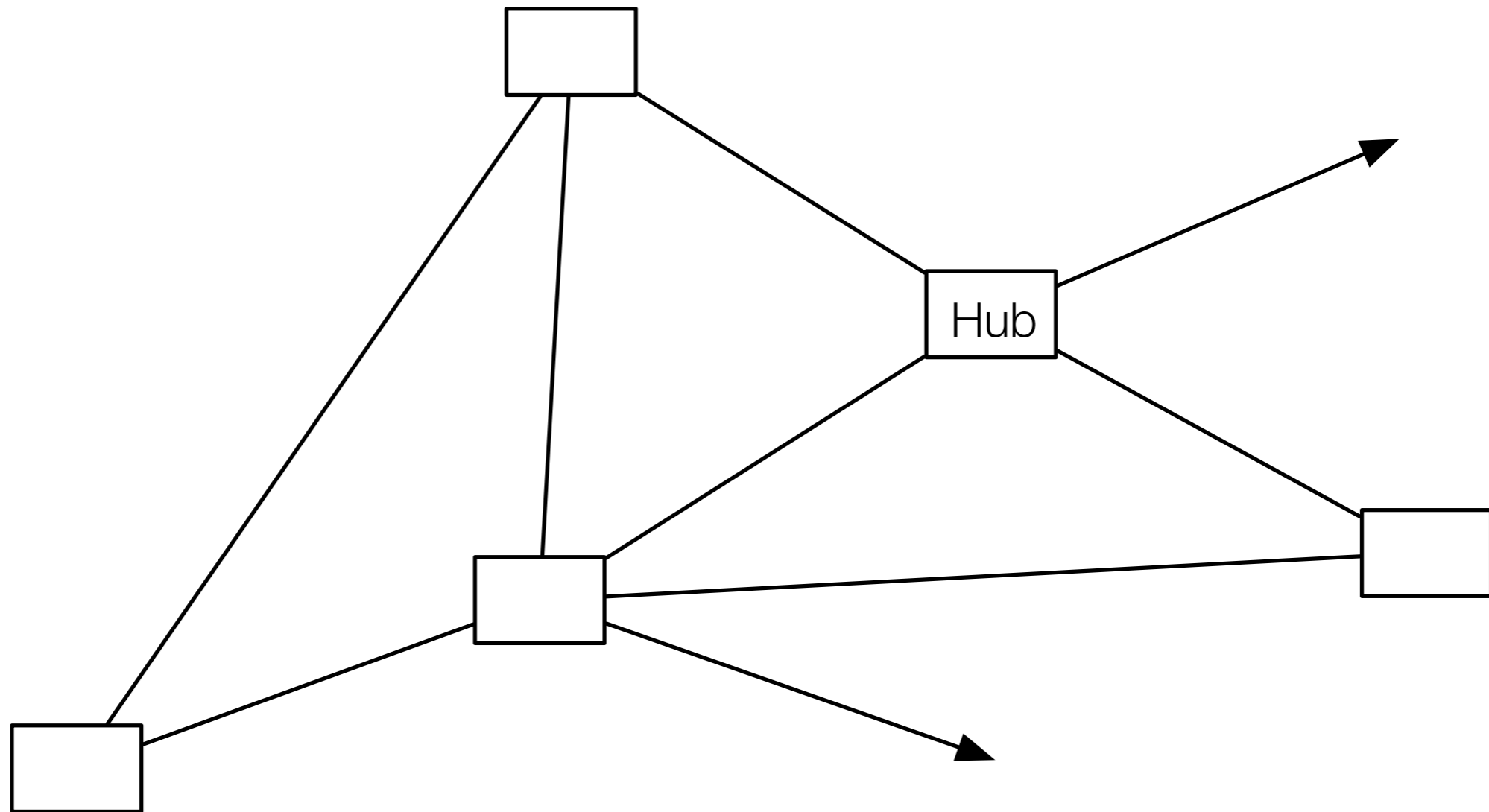
# A Two-Sided, High-Density Rail-Rail Hub

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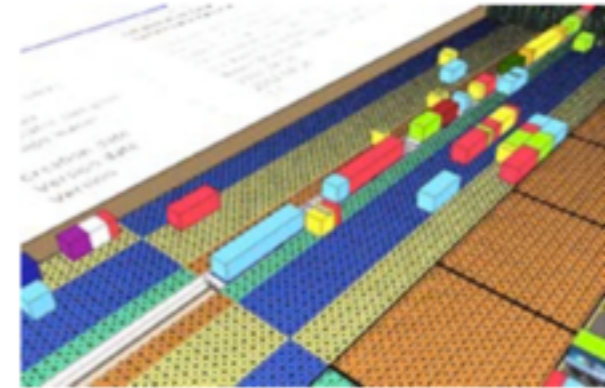
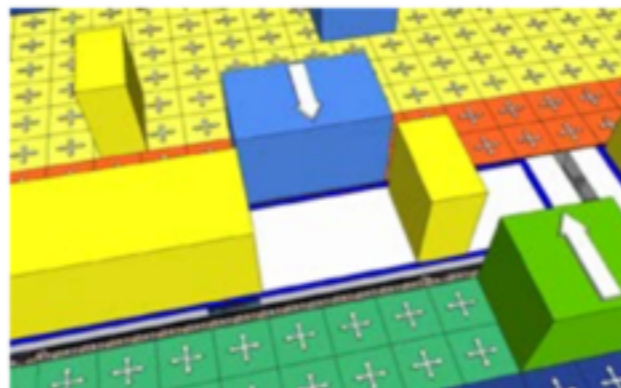
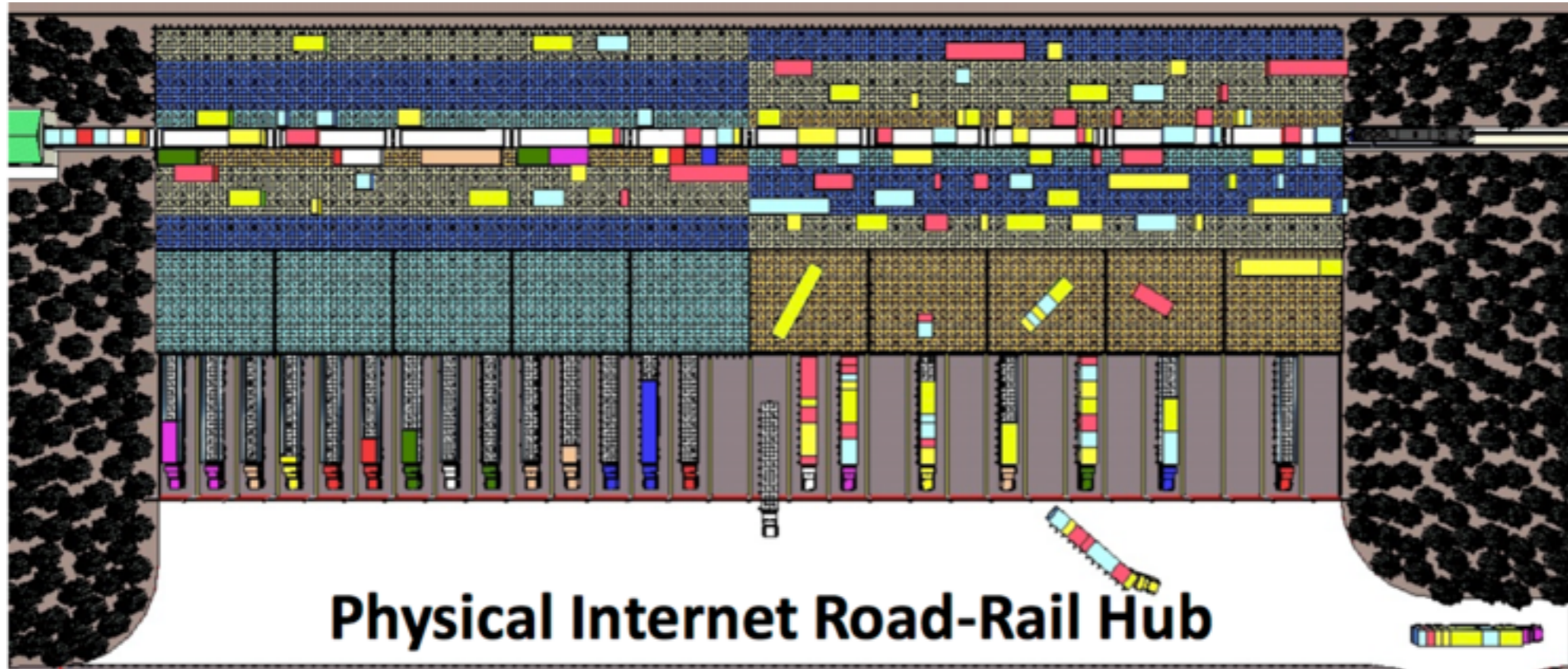
# System Perspective

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# Early Conceptual Design

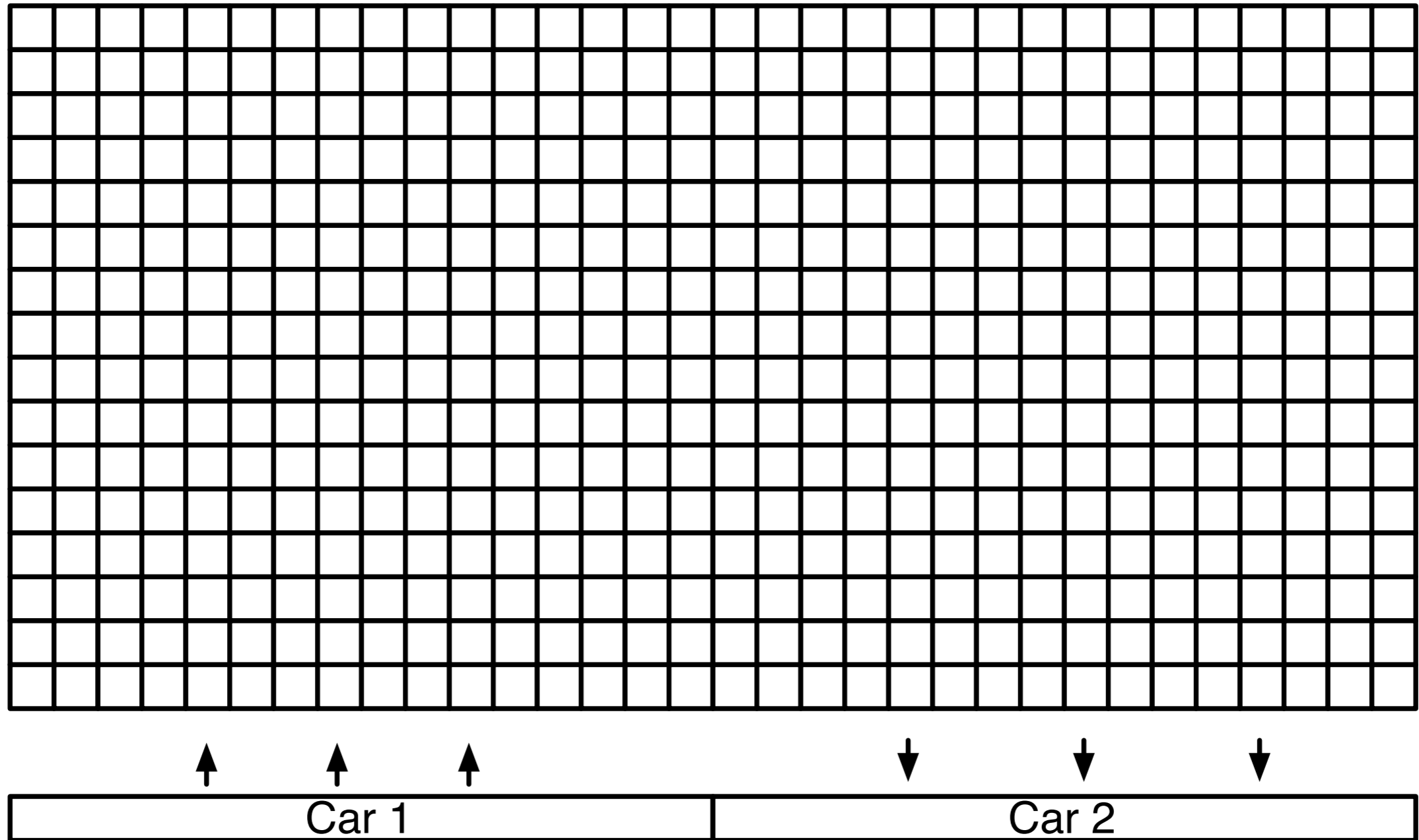
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Source: Physical Internet Manifesto, Benoit Montreuil

# Rail-Rail Hub

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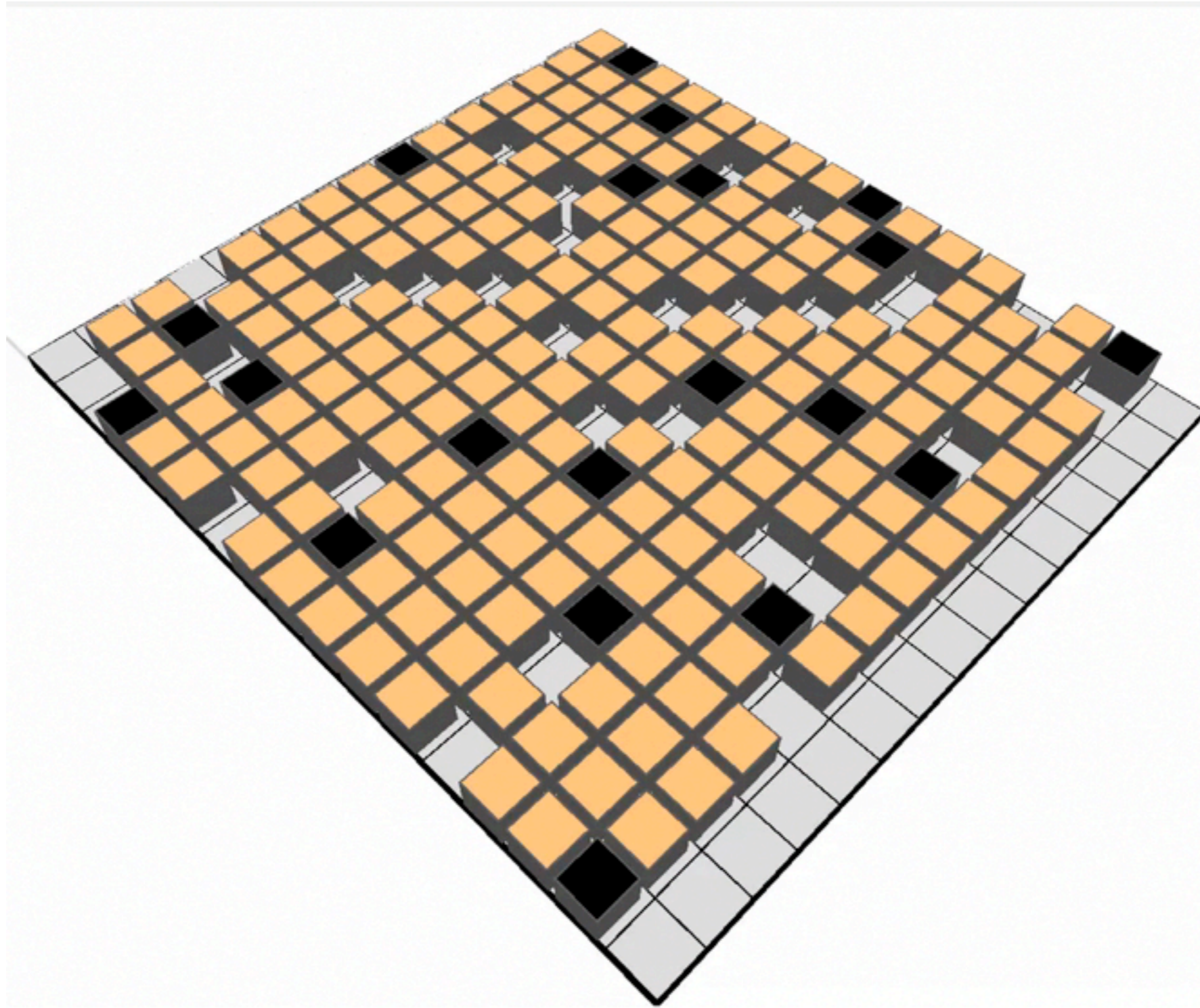






# GridStore

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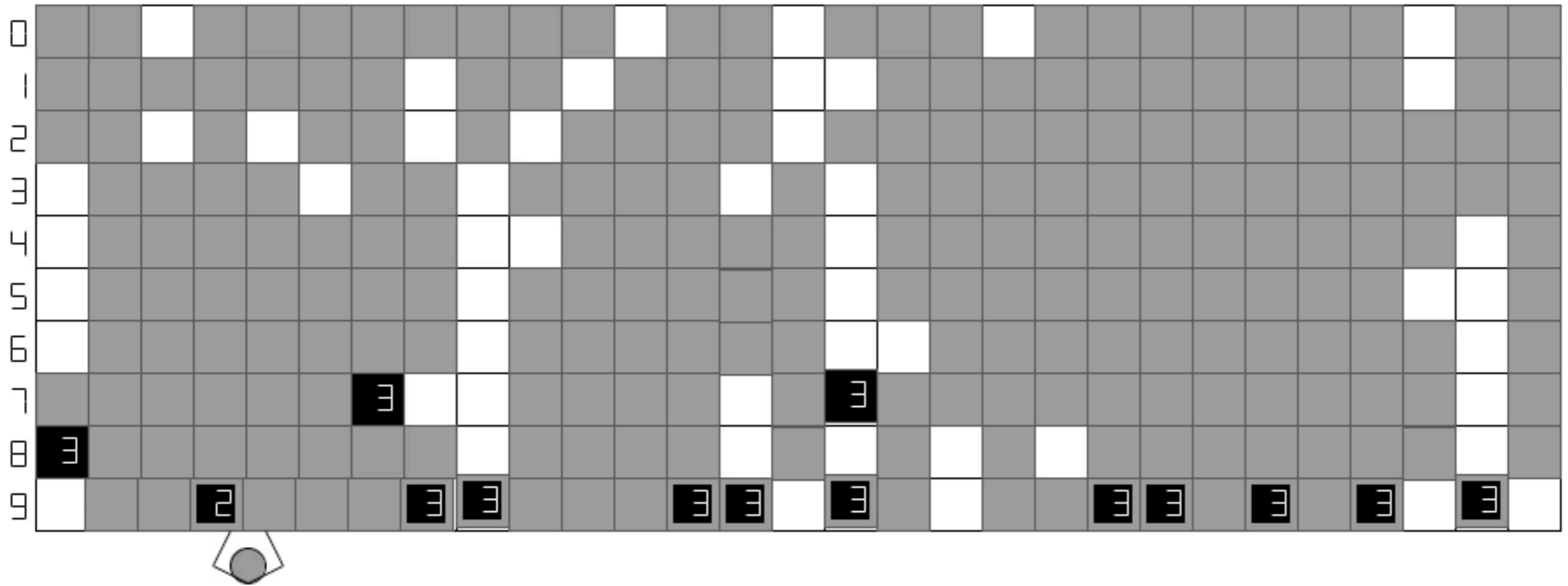


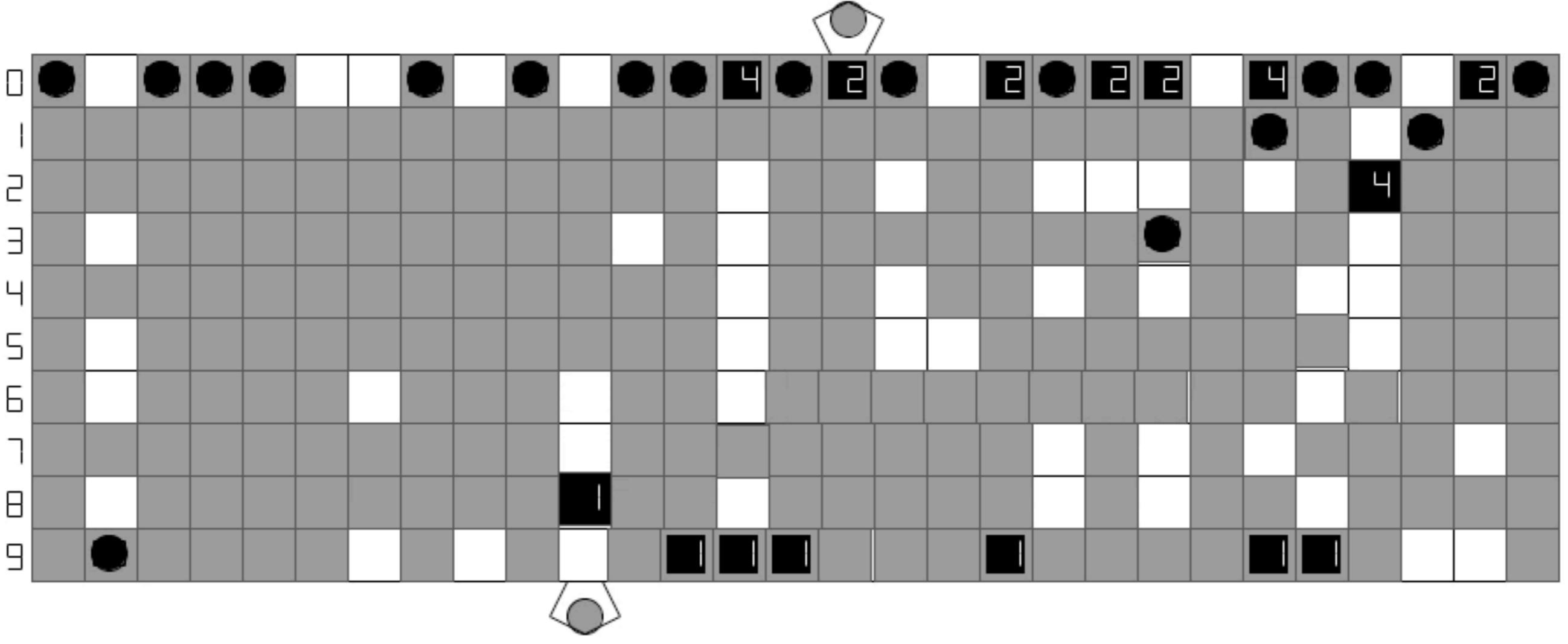




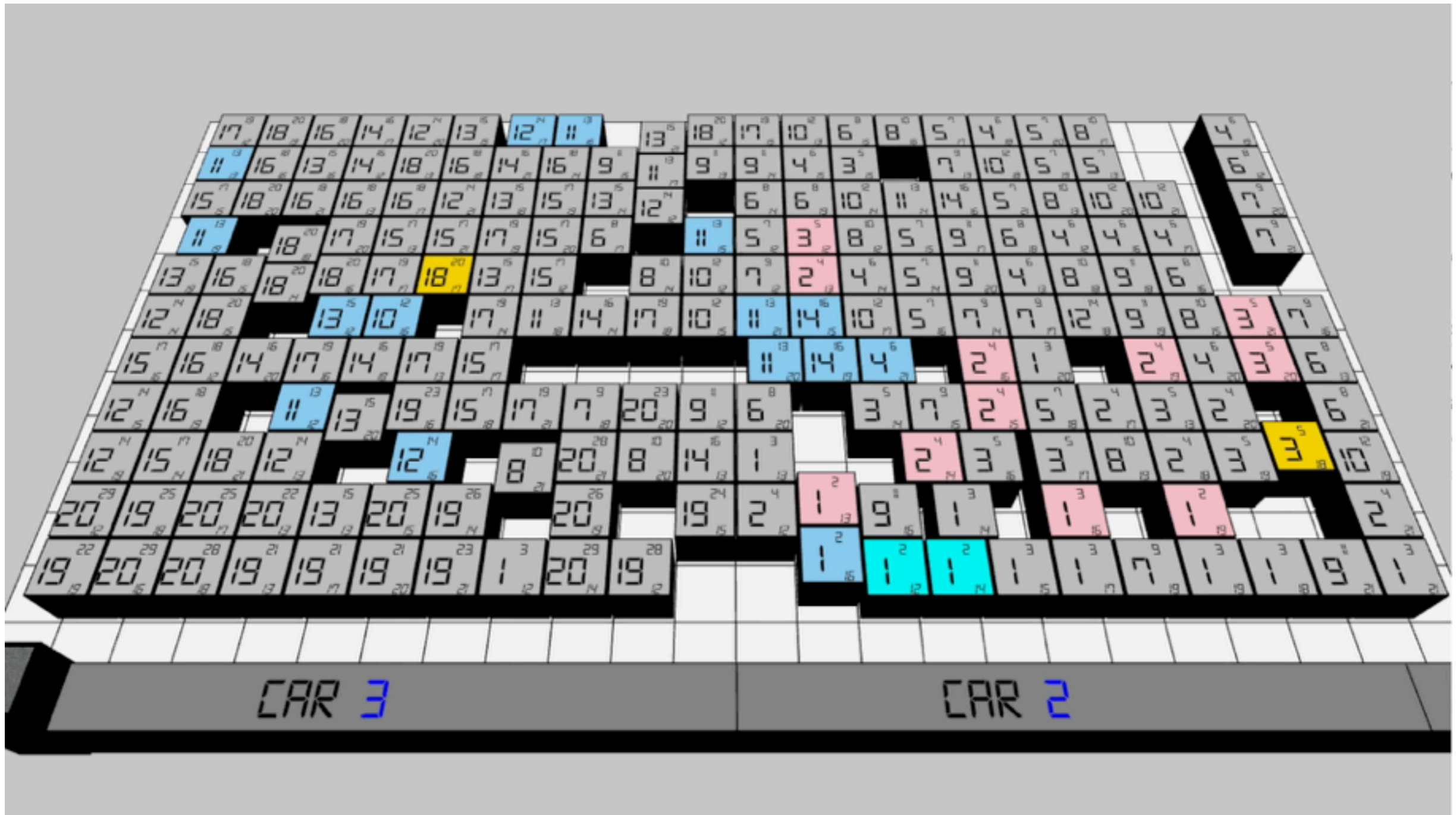
# GridPick

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# A One-Sided PI Rail-Hub



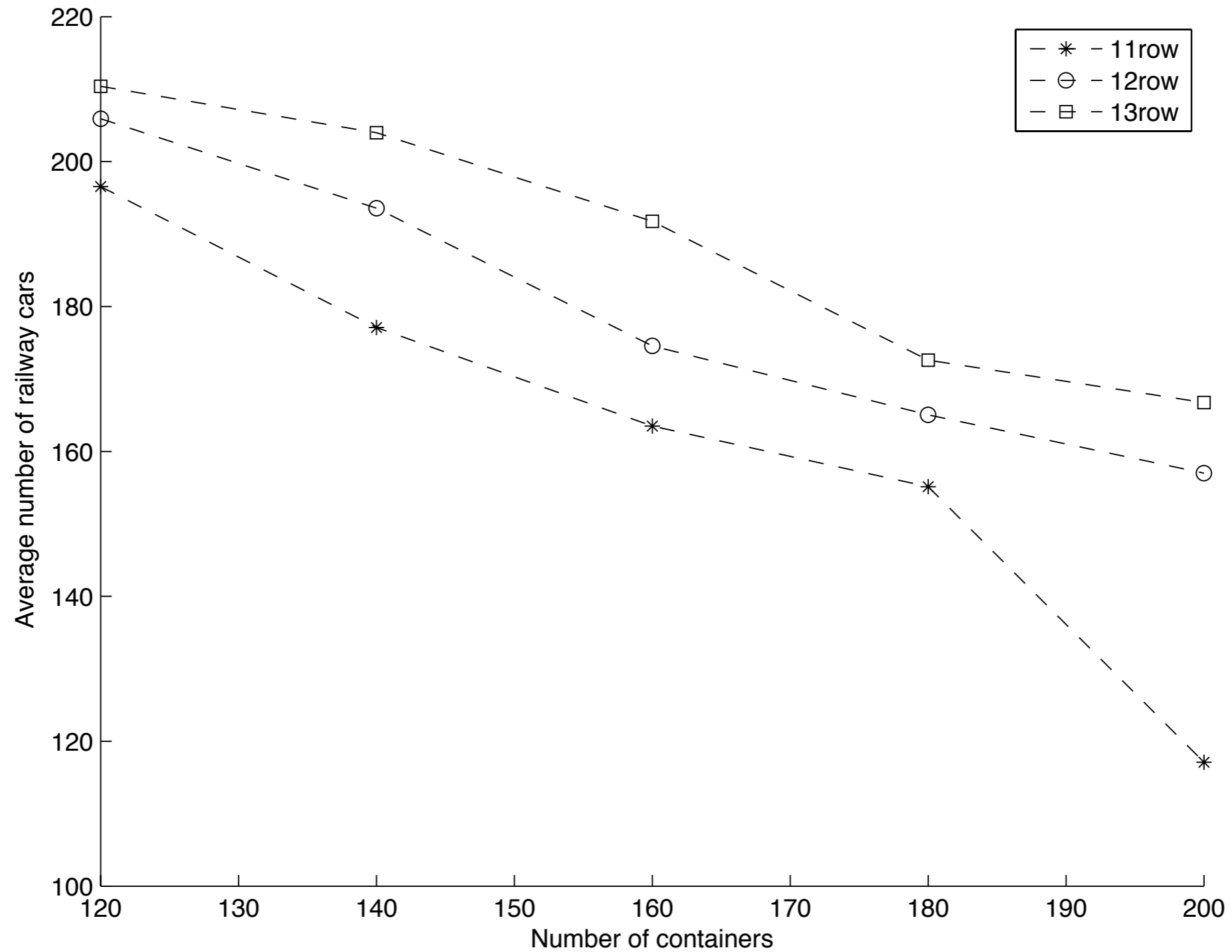


# A Two-Sided PI Rail-Rail Hub

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2	18 16 Δ	24 16 ▽	17 20 Δ	23 12 Δ	23 15 Δ	24 19 ▽	17 16 ▽	24 14 ▽	21 17 ▽	23 12 ▽	24 19 Δ	15 13 ▽	22 20 Δ	15 12 Δ	13 18 Δ	13 20 Δ	12 18 Δ	12 15 Δ	13 21 Δ		12 21 Δ	13 17 Δ	2
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4	17 13 ▽	19 21 Δ	17 15 Δ	18 14 Δ	18 14 ▽	16 20 ▽	15 20 Δ	17 21 ▽	14 14 Δ	13 13 Δ	15 12 ▽	11 13 Δ	16 14 Δ	16 17 Δ		12 16 Δ	12 17 Δ	14 17 ▽	14 20 Δ	15 20 ▽			4
5	15 15 ▽	15 18 Δ	17 15 ▽	18 20 Δ	15 13 ▽	16 16 ▽	13 18 ▽	15 15 Δ		13 12 ▽	17 12 Δ	14 15 ▽	12 13 ▽	13 14 Δ		14 14 Δ	13 19 Δ	14 21 ▽	14 21 Δ		14 18 Δ		5
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# Throughput

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# A Two-Sided, High-Density Rail-Rail Hub

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# Questions

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- Are these systems on the right track, or should we be pursuing more conventional solutions for the PI?
- Given our enormous investments in infrastructure, what does a transition to PI hubs look like?
- Should researchers be working on how to modify existing systems instead?
- Which types of hubs should receive immediate research attention—warehouses, ports, or rail hubs?
- Why do PI hubs have to be different than current hubs?