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# Kyle Rosenmeyer

Design Lead, VHB



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# The Future of Design



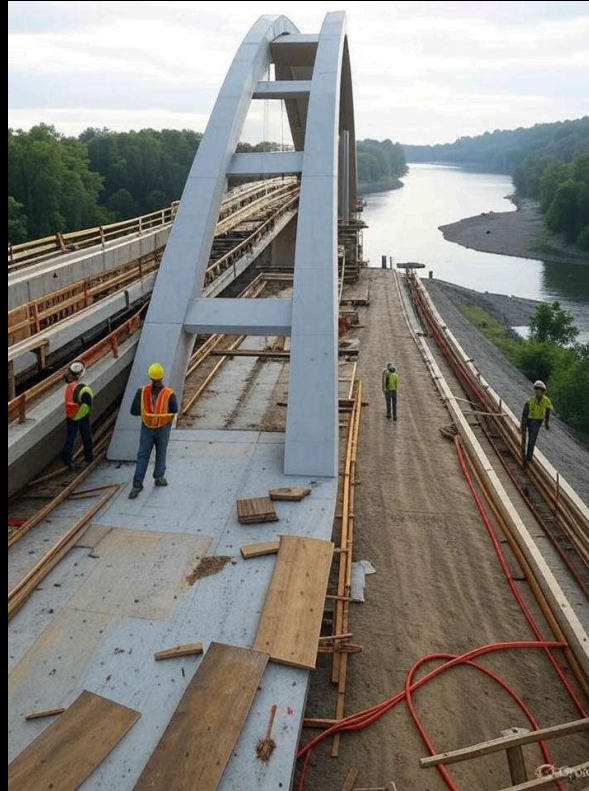
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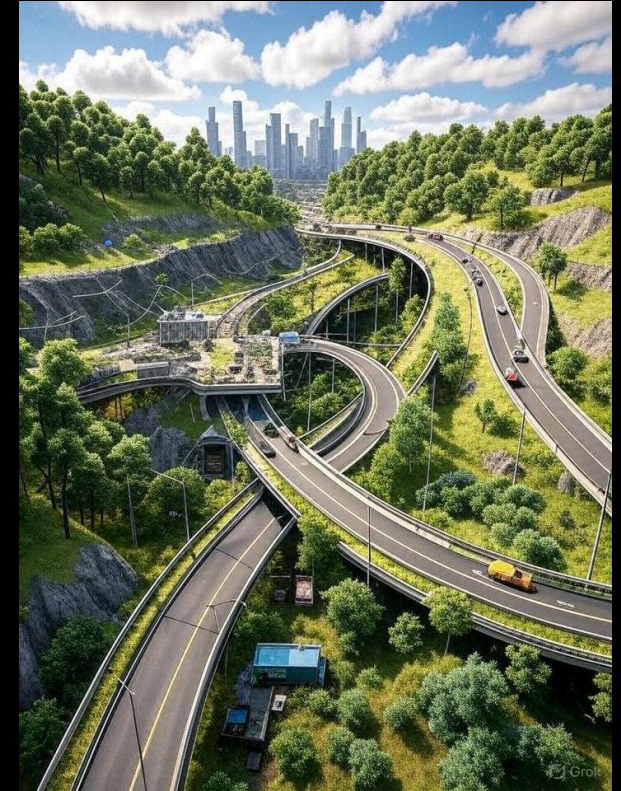
# "Generative AI is Shaping the Future of America's Civil Infrastructure Systems!"

— Amir. H. Alavi, PhD, Associated Professor at University of Pittsburgh



## Realities of today

- Resource intensive materials
- Project delays & Cost Overruns
- Frequent repairs due aging infrastructure



## AI's potential for the future

- Material efficiency and sustainability
- Better planning & execution
- Structural Durability and optimized maintenance

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# The Future of Design with AI

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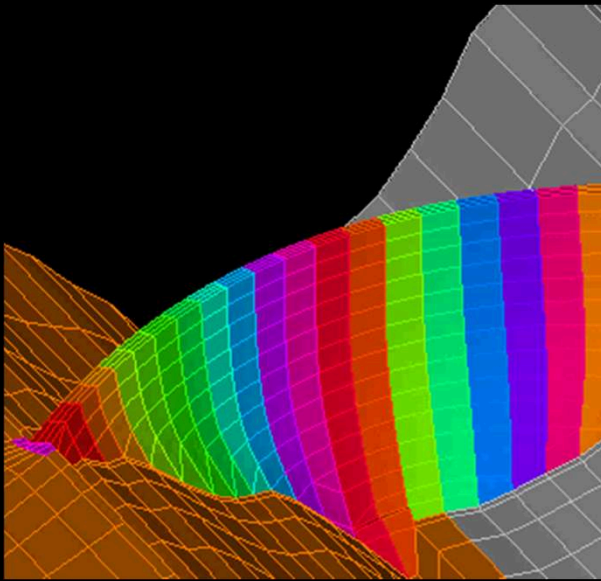
# Dustin Parkman

Vice President, Industry Solutions

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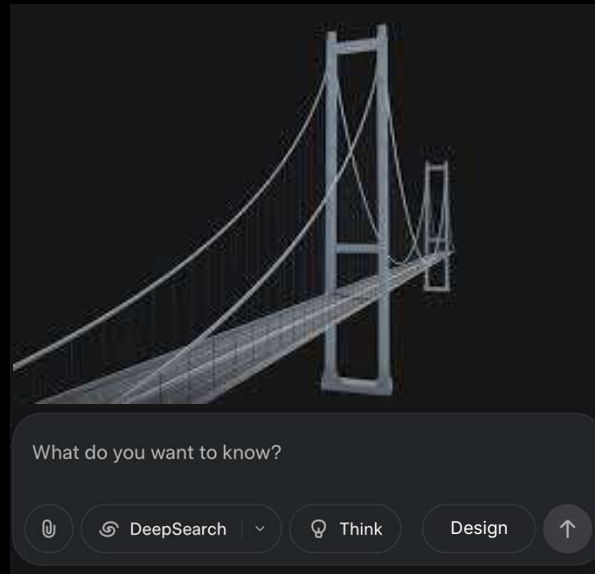
# The future of design with AI

The Past  
How We Arrived Here



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The Present  
Where are with AI



The Future  
The Next Horizon for AI



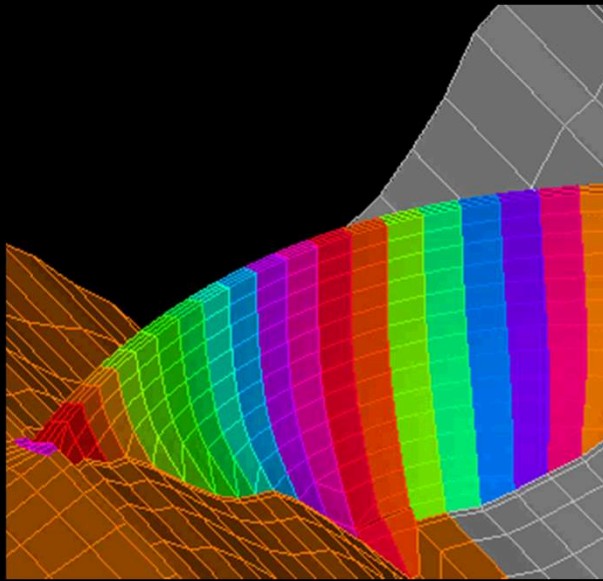
## Slide 7

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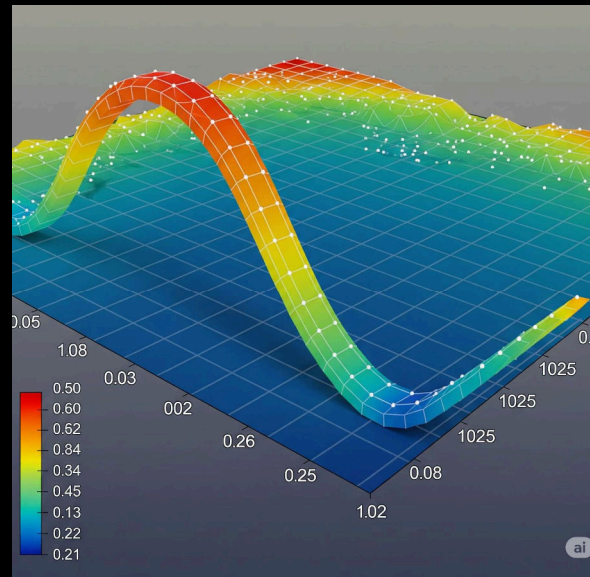
- DP1** If we have a better image in stock to communicate the future of agentic AI, or design helpers please replace.  
This was just an AI generated mockup.  
Dustin Parkman, 2025-06-18T20:18:11.171

# The past – how we arrived here

### Finite element method



### Linear optimization algorithm



### Expert systems



## Slide 8

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**DP1** If we have better image that illustrates automations rules please replace. I just mocked this one up

Dustin Parkman, 2025-06-18T21:07:56.850

**DP2** Can we make the background for this image black?

Dustin Parkman, 2025-06-18T21:14:16.325

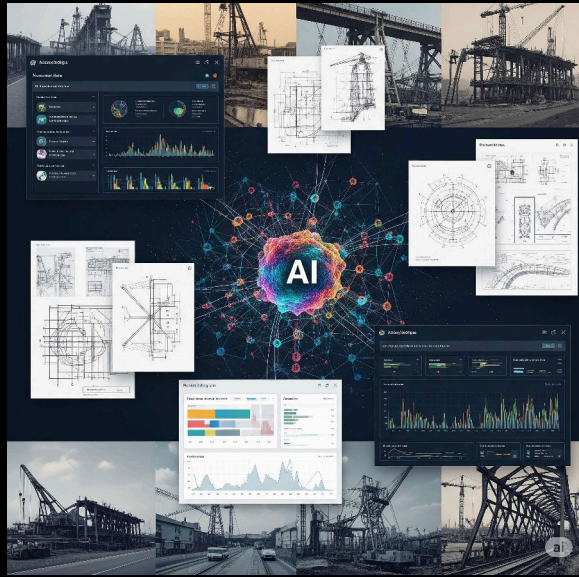
# The present – where we are with AI

## Machine learning – site conditions



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## Unlocking insights from project data



## Generative design



## Slide 9

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**DP1**

This slide needs to be finished. I pull the graphics from the AI slides that you created for us previously.

Dustin Parkman, 2025-06-18T22:28:46.759

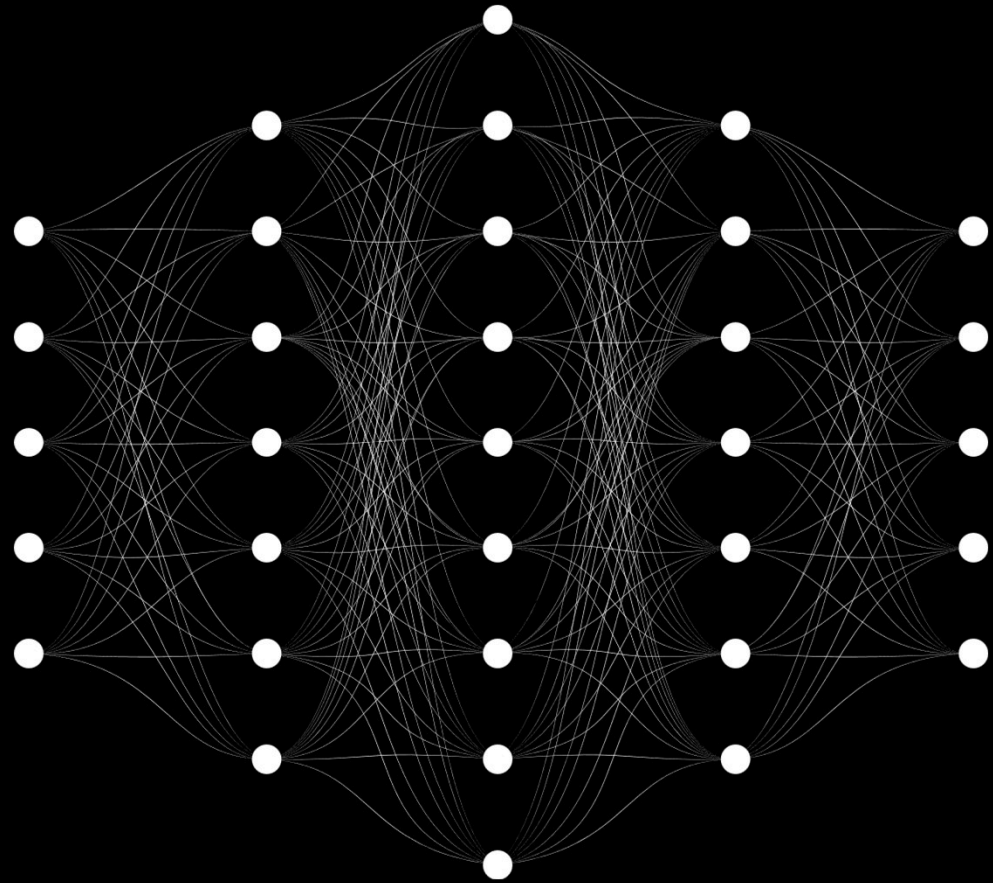
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# Kyle Rosenmeyer

P.E., Model Based Design Leader, VHB

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**AI neural nets are  
like human ones.**



## Slide 11

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**ES1** I suggest going a bit simpler and tidier. All those images have a certain style and timestamp; looking at them makes the idea murky, hard to grasp, they are too vague and encourages disassociation: I am trying to find mistakes and patterns in them, instead of listening to the point.

Egle Stoniene, 2025-06-20T10:58:29.997

# Human vs. AI

Working memory	=	Context window
Memory	=	State
Energy	=	Computation
Fatigue	=	Constraints
Execution function	=	Iteration



## Slide 12

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**DP1** Can we find a better illustration and layout for this slide  
Dustin Parkman, 2025-06-20T02:40:34.193



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## Today:

AI neural networks expand human neural networks.

AI neural networks improve exponentially faster.

## Tomorrow...

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## Slide 14

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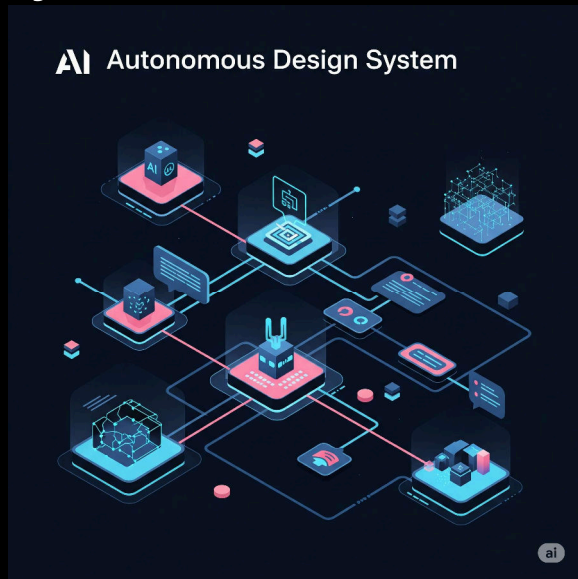
**DP1**

Can we come up with a better layout and replace abbreviations of NN's with Neural Networks.

Dustin Parkman, 2025-06-20T02:41:05.857

# The future – the next horizon for AI in infrastructure design

## Autonomous design systems



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## AI-human collaboration



## Sustainable and resilient infrastructure



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# The Future won't wait

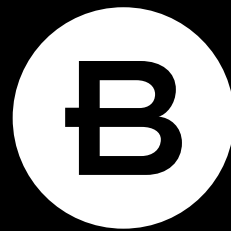
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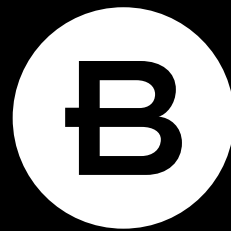
# Thank you!

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