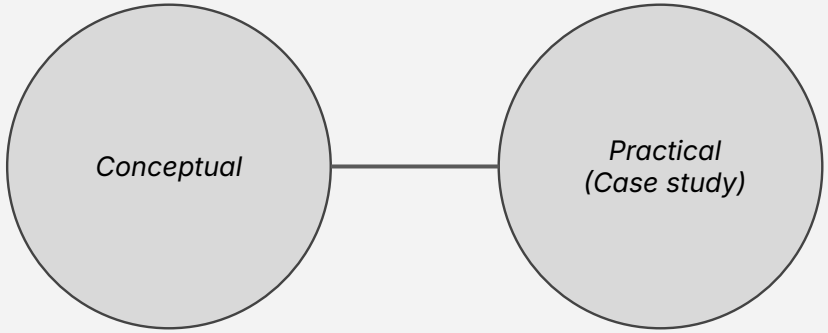
Learning Design in the age of AI.

Danyal Sarfraz 🇵🇰
Researcher / Designer at IID Lab, UNIST
Danyalportfolio.com

How to learn design?

Main Challenge: *Design is evolving so fast that it's really difficult to keep up.*

Presentation mostly covers personal perspective and speculation rather than fact or advice.



Presentation Flow

PART ONE

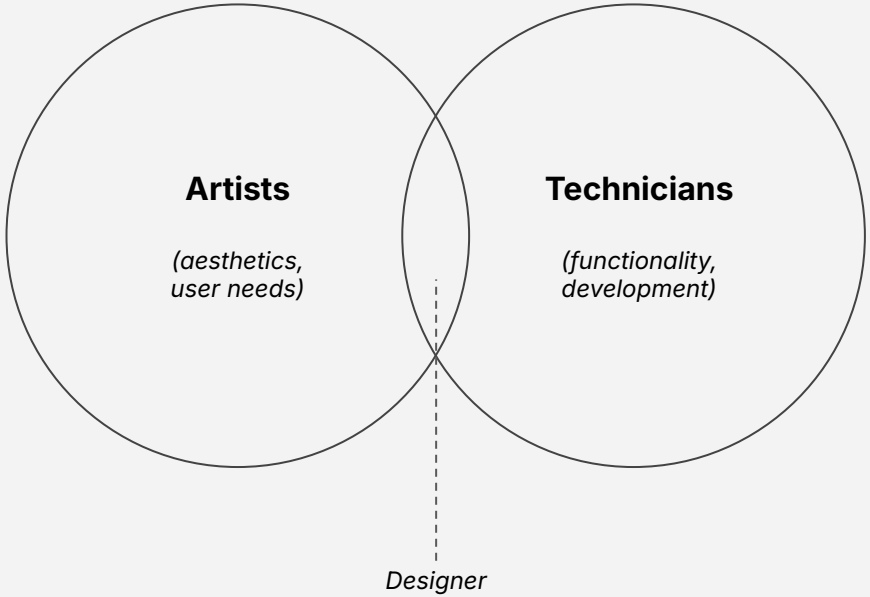
Conceptual

Two conventional approaches, and how AI impacts each.

What is ‘designing’ in practice today?

Design is a skill based domain.

Provide solutions based on user needs.



Designer is a modern craftsman.

Designers take a problem and try to find a solution based on user needs.

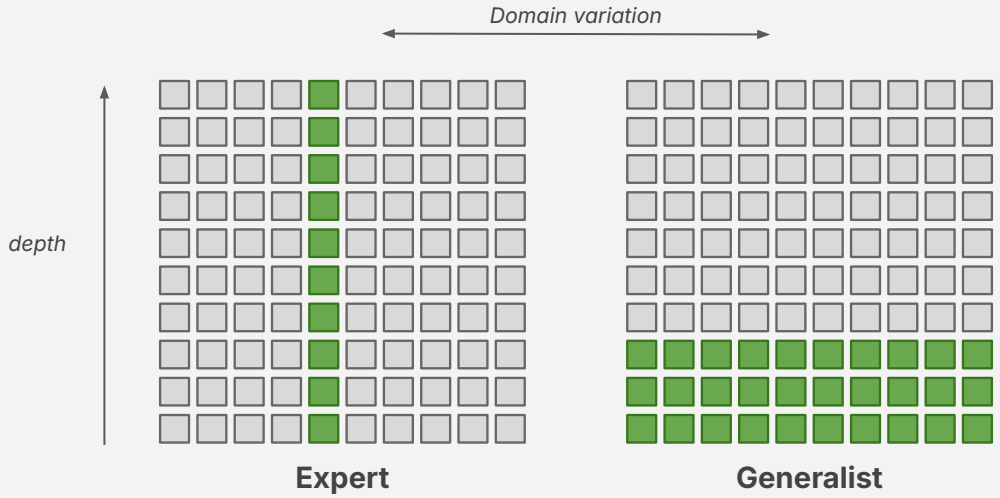
How is a designer similar to craftsmen?

Take specifications and then provide an end product customized to that.

Craftsmen combine art and functionality.



Types of learning



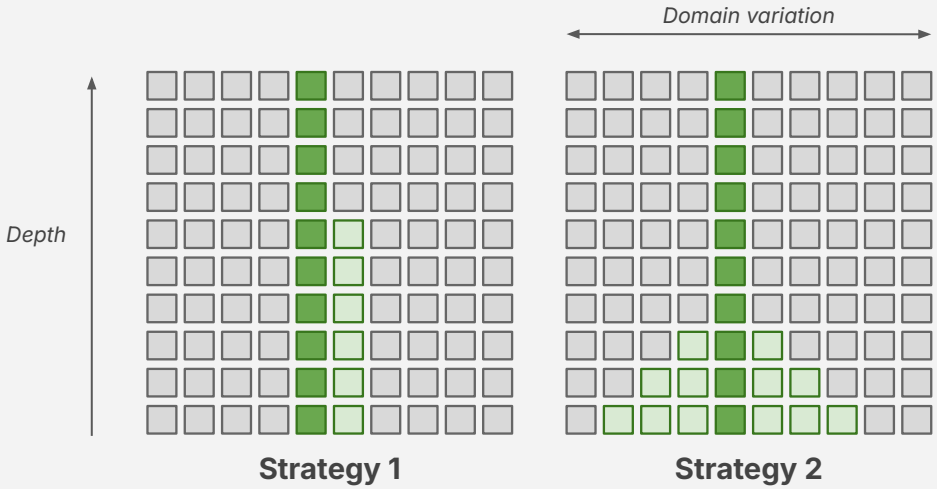
Domain specific Expert

Two examples:

1. *Design PhDs*
2. *Specialized education (i.e. texture artists)*

Two strategies used by domain specific experts in later career:

1. *Parallel specialization*
2. *Generalized skill development*



Generalist

Bachelor's education

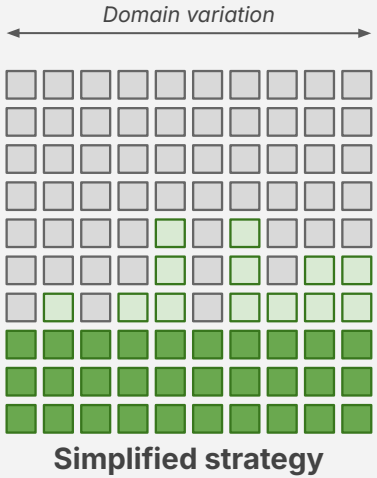
Learning multiple design / systems
(application in early career)

Generalist in mid-career to professional:

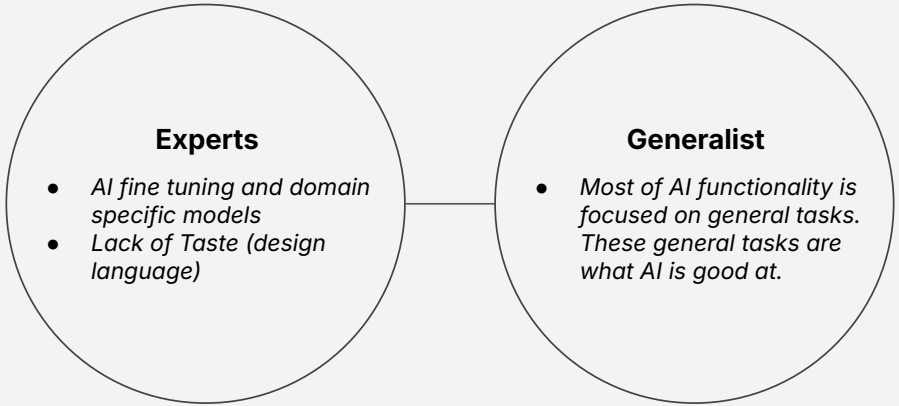
1. *Develop in-depth knowledge over time*
2. *Develop distinct taste (design language)*

Prior to AI, Generalist > Domain specific designer

'A jack of all trades is a master of none, but oftentimes better than a master of one'



Current Limitations of both approaches



Hayao Miyazaki

Japanese illustrator and animator, founder of Studio Ghibli.

Craftsman of the highest order

Dilemma: ChatGPT can now replicate his distinctive style on demand.





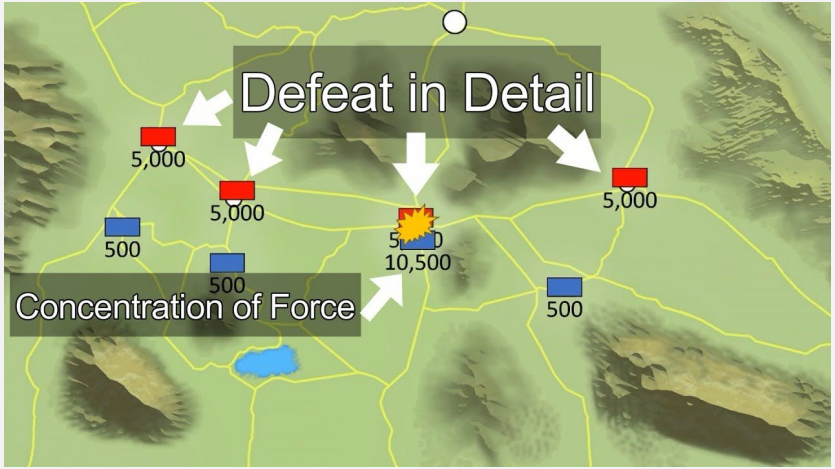


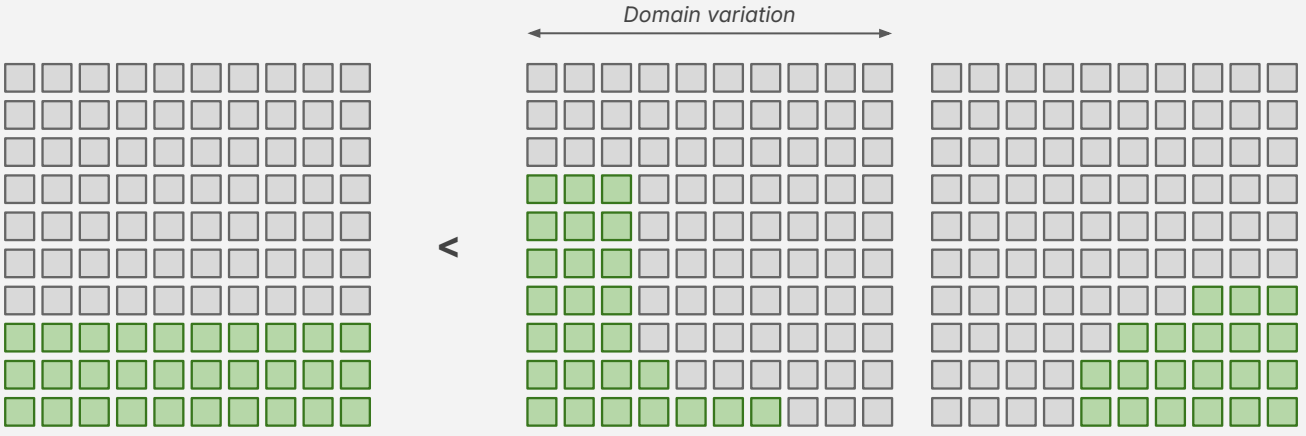


Defeat in detail

Military tactic that involves concentrating a large portion of your own force to attack and destroy smaller, separated enemy units one after another, rather than fighting the entire enemy army all at once.

Application to design?

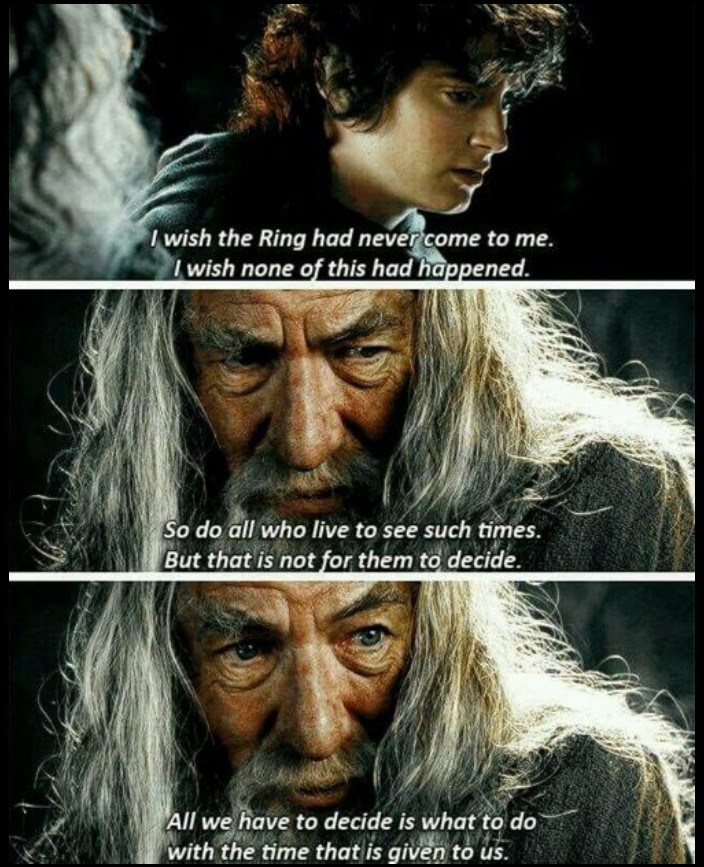




"A single AI model can't cover all domains that a generalist does, but can definitely cover certain parts with more precision. "

So is design dead?

Not really, but...



Design's soul is dead

Craftsmanship is no longer required.

In industrial revolution, transition of craftsmen to factory worker took place.

In the age of AI, designer role ***will become increasingly managerial*** *(i.e how the AI system is working, prompt machines.)*

Then how to succeed in the new "AI based industrial revolution"



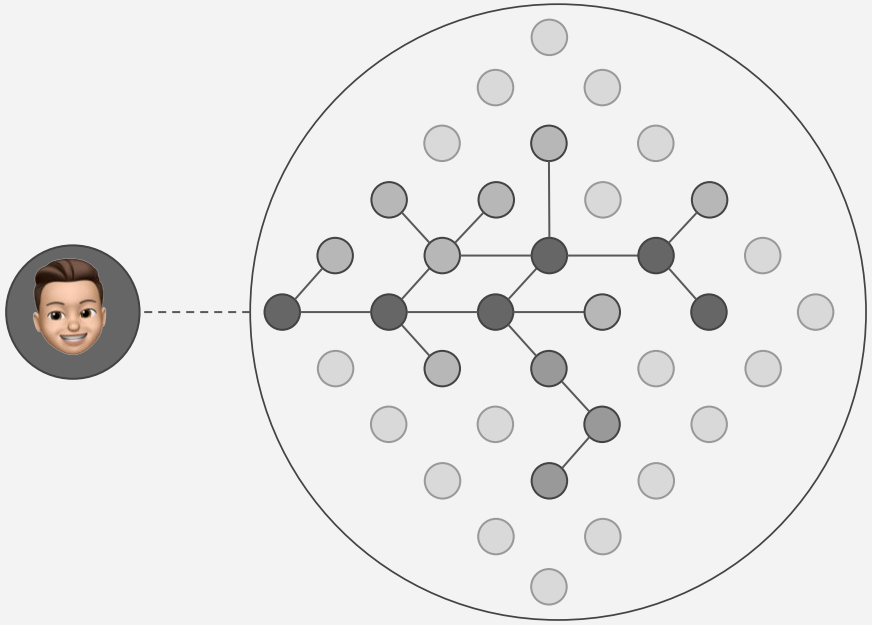
Deep Generalist

Rather than expanding to cover a whole domain, you expand in a certain region, at a greater depth.

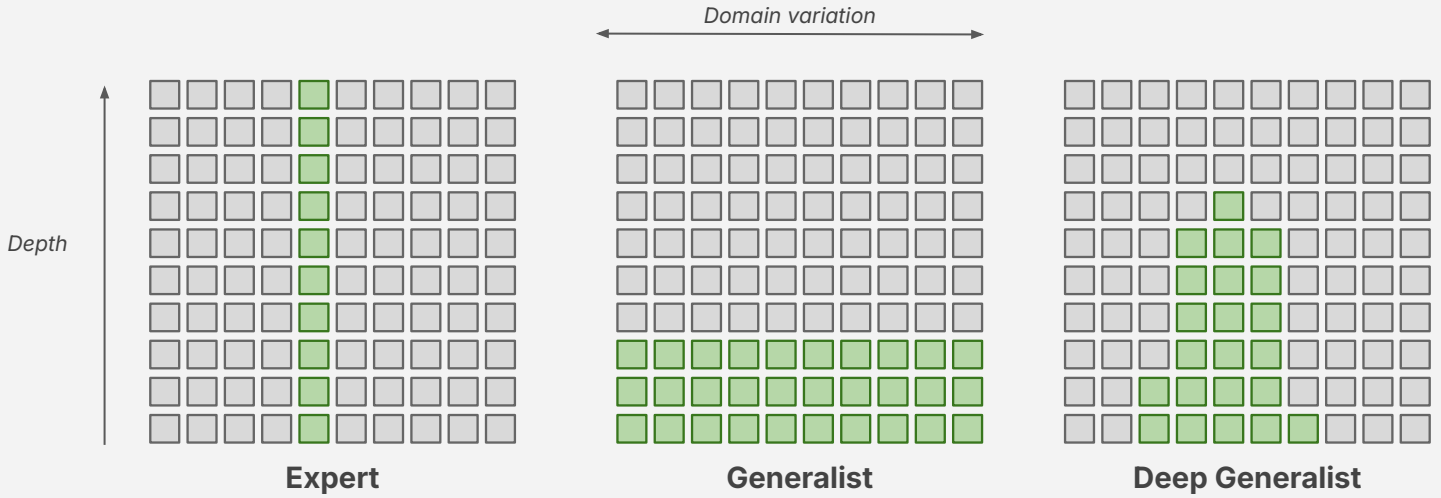
Two approaches for the deep generalist:

1. *Neighbouring domains*
   (extremely proficient individuals)

2. *Distinct domains*
   (revolutionary individuals)



Types of learning



How to become a Deep Generalist?

Martec's Law: *technology changes exponentially, but organizations change only logarithmically.*

Structural inertia*: large organizations are built for reliability and accountability, and that makes them resist change. Smaller, newer players adapt faster.*

Tech giants vs startups

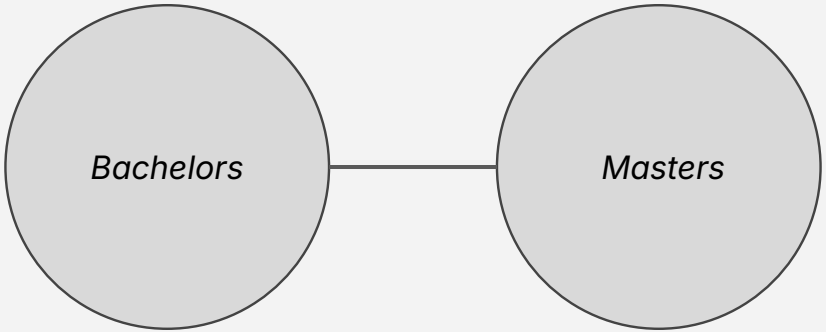
What does it mean for students?

1. *Don't depend on just the coursework.*
2. *Accept smaller defeats for bigger wins.*

PART TWO

Practical Application

Myself as a Case Study


Bachelors
Masters

	First Year	Second Year	Third Year	Fourth Year	Fifth Year
Extra Curricular	*Video Editing*	*Photography*	*Visual 3D*	*Freelance Experience (Over 70 projects)*	
Bachelors Grades					

Some 3D Renders from Portfolio...













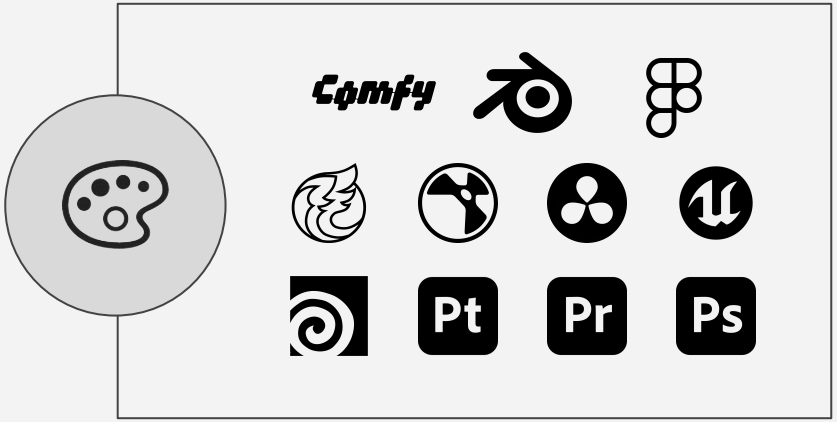


Challenge

Focus: *Visual design*

AI image generation went mainstream in 2023: *DALL-E 3, Midjourney, Stable Diffusion XL*

Future focus: *Idea of Deep Generalist with in Neighbouring domains (extremely proficient individuals).*



Masters

Main Objectives:	**Expert Benchmark**	**Main To do**
1. *Focus on **research** and publications as an alternative to uncertain job situations.*	*Prof. KwanMyung Kim, Ulugbek Ismatullaev*	*Am I their peer? Is my research output / quality close to theirs?*
2. *Deeper more **technical** knowledge / shift away from visuals as image generation models matured (late 2023)*	*Prof. Jaeyeon Lee (CSE Dept.)*	*Can I pass CSE classes? Can I graduate with a CSE committee member?*

Unreal Engine
(Game Design)



Blender
(Polygonal, Visual Design / CGI)



Computer Graphics
(Photography, Motion design)



Meta VR
(Based on UE5)

Unreal Engine
(Game Design)

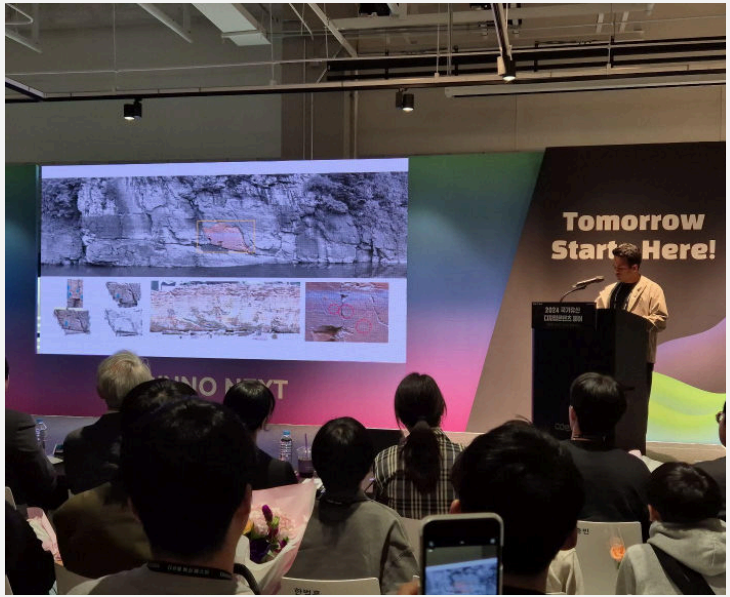
Blender
(Polygonal, Visual Design / CGI)

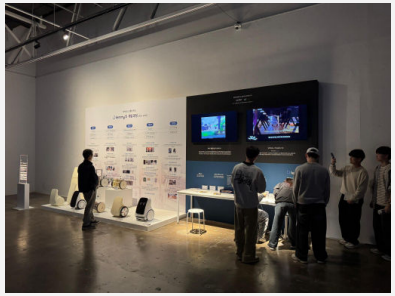
Solidworks
(Parametric, Product Design)

AI assisted development

Computer Graphics
(Photography, Motion design)

1st Position at Korea Heritage Competition

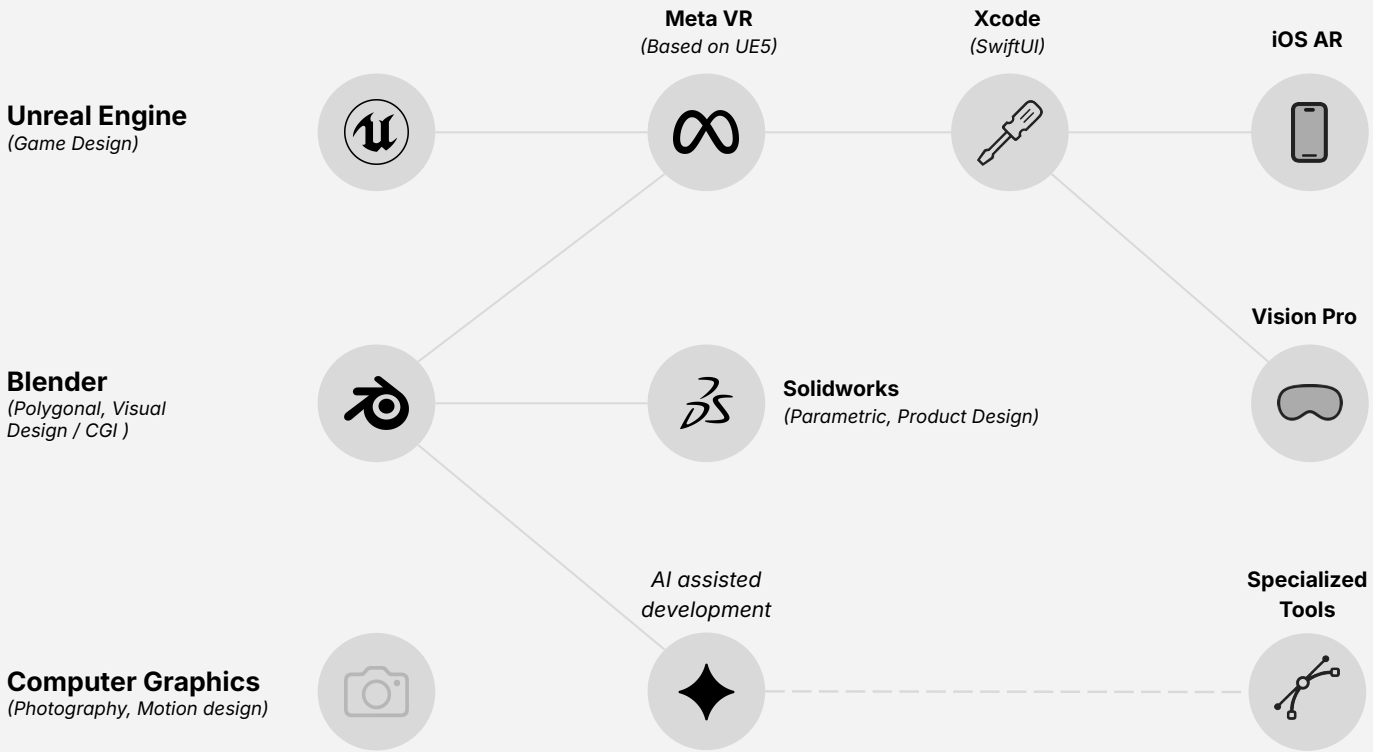


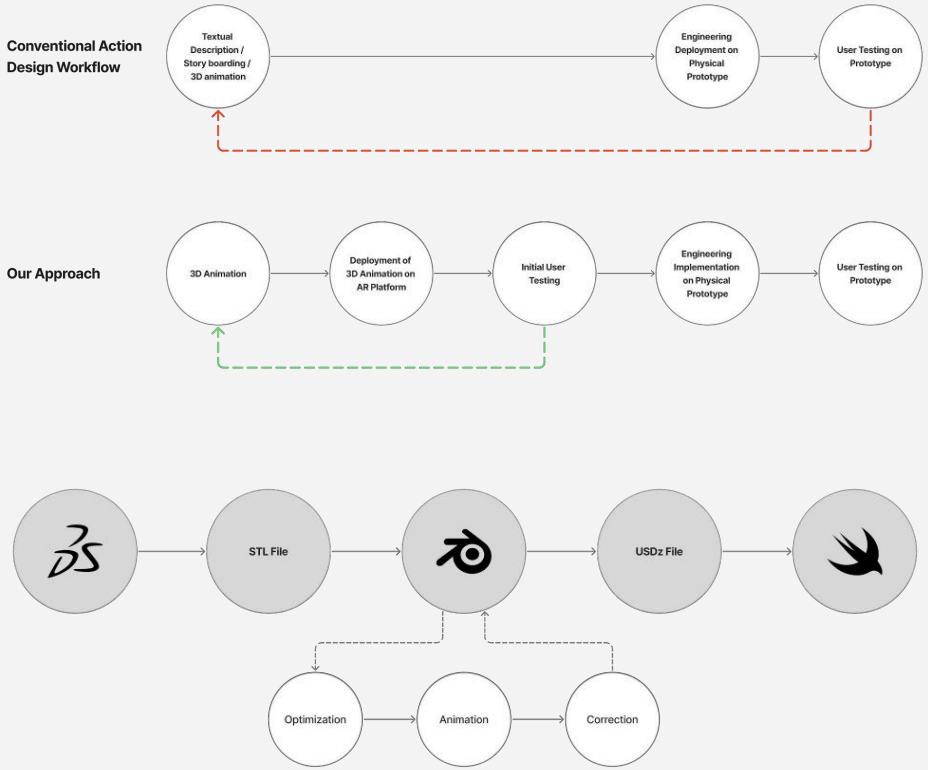


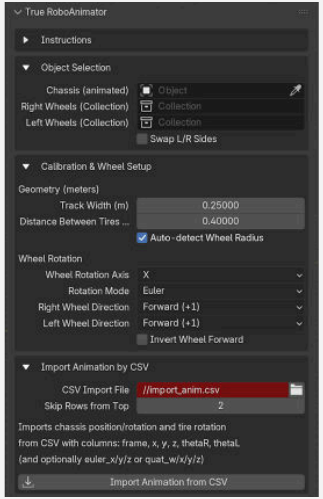


Lemmy at CES and Gwangju Design Biennale

First year: *Advanced Information Visualization + Spatial Computing*
Research output: Zero *(3 submissions, 3 rejections)*


Meta VR
(Based on UE5)
Xcode
(SwiftUI)
iOS AR
Unreal Engine
(Game Design)
Vision Pro
Blender
(Polygonal, Visual Design / CGI)
Solidworks
(Parametric, Product Design)
AI assisted development
Specialized Tools
Computer Graphics
(Photography, Motion design)

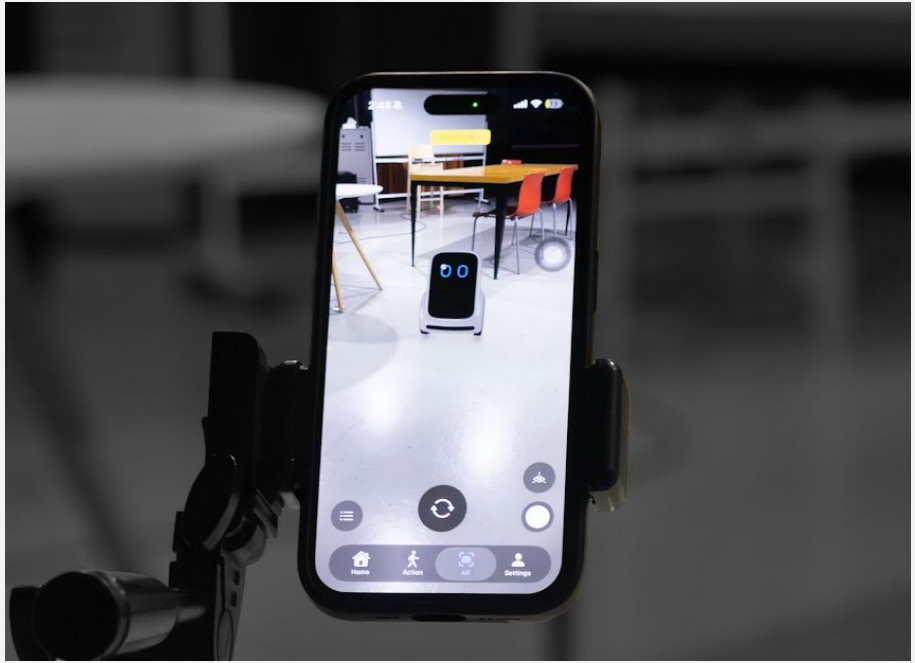

Conventional Action Design Workflow
Textual Description / Story boarding / 3D animation
Engineering Deployment on Physical Prototype
User Testing on Prototype
Our Approach
3D Animation
Deployment of 3D Animation on AR Platform
Initial User Testing
Engineering Implementation on Physical Prototype
User Testing on Prototype
STL File
USDz File
Optimization
Animation
Correction





Blender Addon

For animation correction, to match real world motion.



AR App

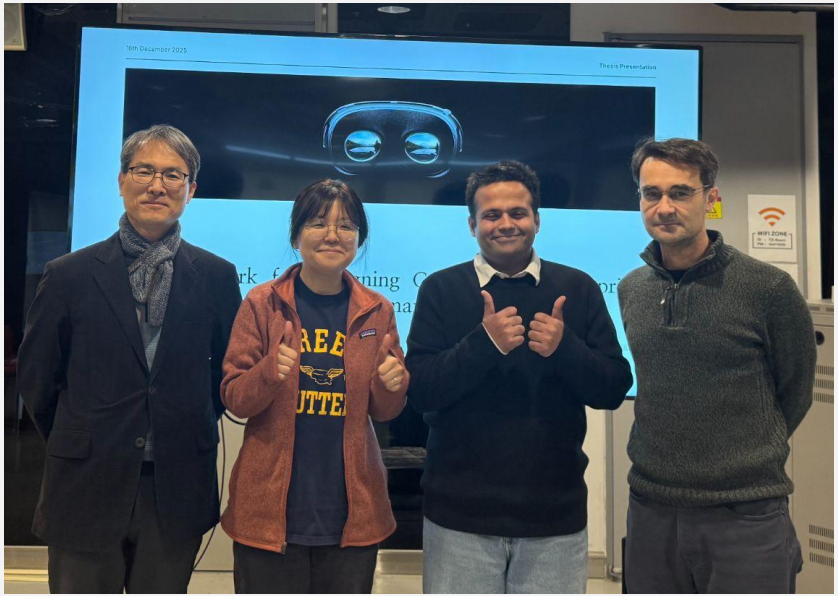
For contextual inquiry before functional hardware exists.

Thesis defense

Prof. KwanMyung Kim (Expert in Engineering Design)

Prof. Jaeyeon Lee (Expert in HCI)

Prof. James Self (Expert in Design Research)







IASDR

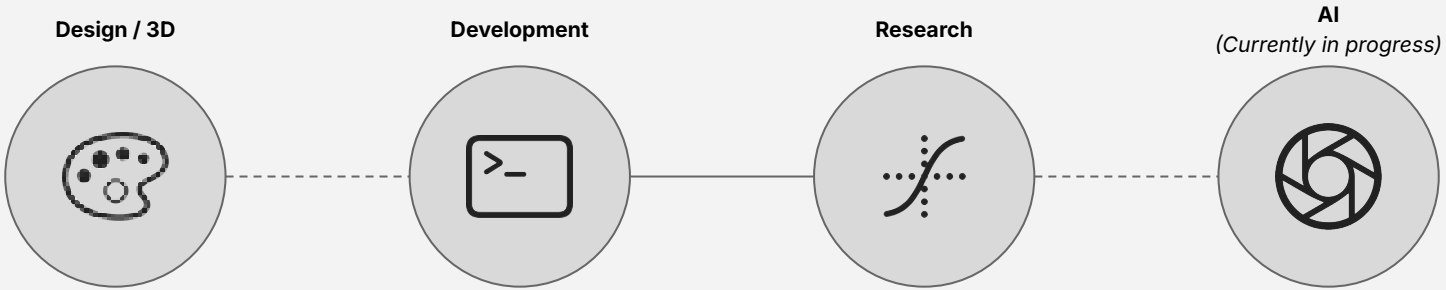
(2 Papers)

Final Year Courses: *Advanced Human Computer Interaction, Innovation Management*
Research output: *Three papers based on thesis: KSDS, IASDR, CHI (interim)*

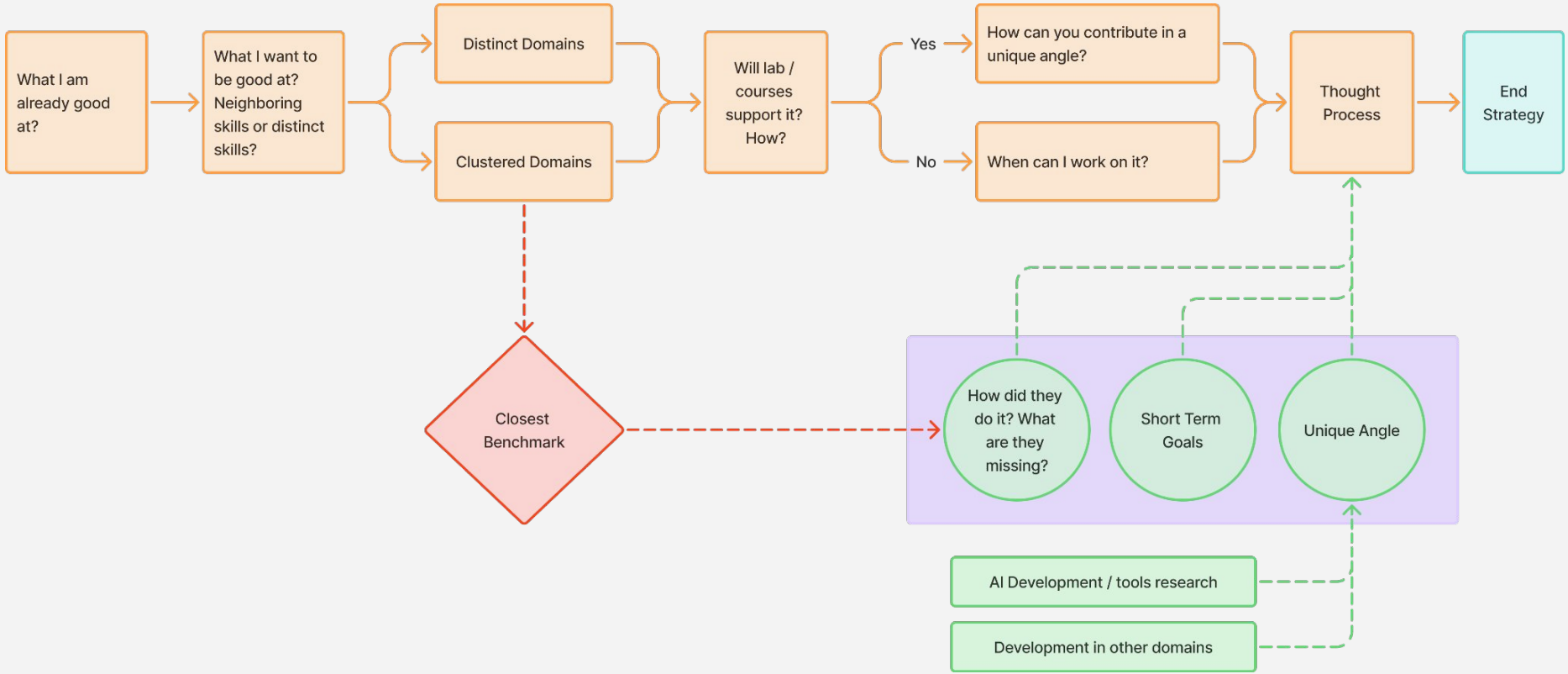
Reflection

Main Objectives:	**Expert Benchmark**	**Main To do**
1. *Focus on **research** and publications as an alternative to uncertain job situations.*	*Prof. KwanMyung Kim, Ulugbek Ismatullaev*	*Am I their peer? Is my research output / quality close to theirs?*
2. *Deeper more **technical** knowledge / shift away from visuals as image generation models matured (late 2023)*	*Prof. Jaeyeon Lee (CSE Dept.)*	*Can I pass CSE classes? Can I graduate with a CSE committee member?*

***None of the goals were fully achieved,** but I'm much closer to them than I would have been without this direction.*



Metamorphosis from 3D Visual / product design to Spatial Computing, Development, and Research


What I am already good at?
What I want to be good at? Neighboring skills or distinct skills?
Distinct Domains
Clustered Domains
Will lab / courses support it? How?
Yes
No
How can you contribute in a unique angle?
When can I work on it?
Thought Process
End Strategy
Closest Benchmark
How did they do it? What are they missing?
Short Term Goals
Unique Angle
AI Development / tools research
Development in other domains

EXTRA - I

Beyond being Proficient

How to be more than a ‘worker’?

Deep Generalist from Distinct Domains

Connects distinct domains to find a unique solution.

Examples:

1. *Wright brothers and bicycle*
2. *Steve Jobs and calligraphy*
3. *Google's PageRank (Larry Page borrowed from academic citations)*



How do I identify the Distinct Domains?

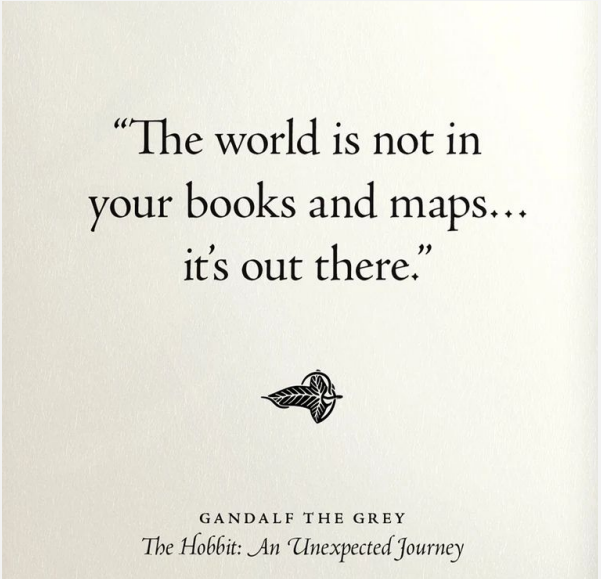
You can't!

*It's **'natural mutation'** that later becomes a 'revolutionary' leader (i.e. desired trait).*

Best way to increase your chance is to explore as many unique experiences as possible.

- *Learn unrelated skills / tools / techniques*
- *Go on hikes*
- *Talk to people*

Why is this important?



AI's limitations on discovery

- *The architecture behind systems like ChatGPT mathematically caps their creativity at 0.25 on a standard scale of 0 to 1, placing them only at the threshold between amateur and professional performance.*
- *AI systems remix statistical patterns rather than originating unfamiliar or effective ideas.*

Cropley (2025, Journal of Creative Behaviour)

EXTRA - II

Future of AI driven design

What might happen?

Long term Impact of AI

As discussed earlier, designers become more managerial.

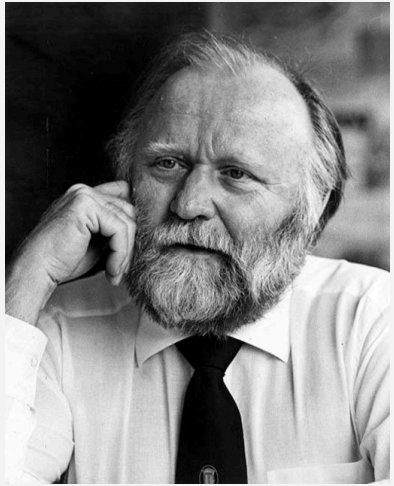
More productive though loss of actual skill.

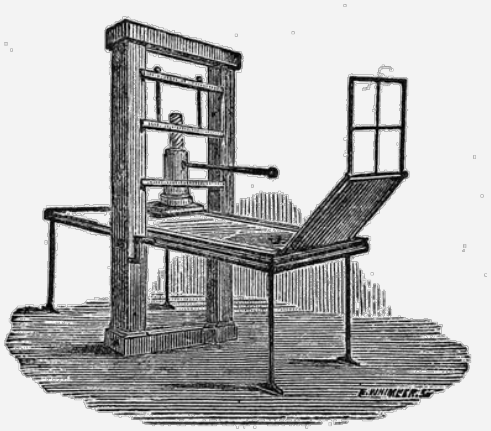
Already happened with theoretical fields where cost of learning in depth is the actual the skill and expertise.



“Once men turned their thinking over to machines in the hope that this would set them free. But that only permitted other men with machines to enslave them.”

-Frank Herbert (Author of DUNE)





Possible Design Renaissance

Previously, being "Steve Jobs" like revolutionary was optional, but (after AI) being one is essential. Same example as Painting after photography, writing after printing press, horses after WW2.

DANYAL SARFRAZ

Thanks for listening!

Open to Discussion



See more work or download presentation at my website!