

welcome

Daniel Jackson · Autodesk Oslo Workshop · August 25-26, 2025

introducing
myself

my career in buildings



Physics at Oxford



Programmer for Logica UK

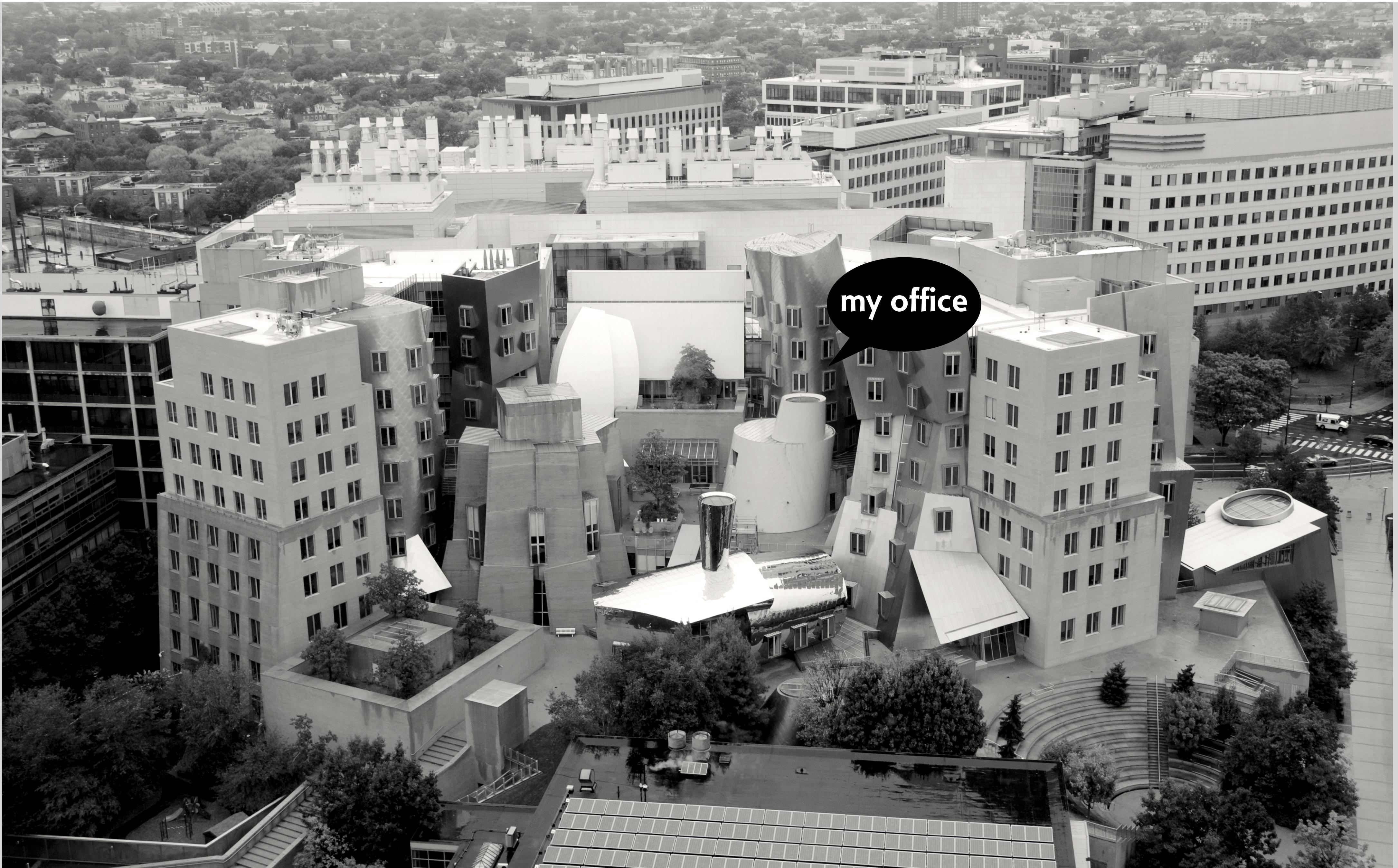


Computer science PhD at MIT

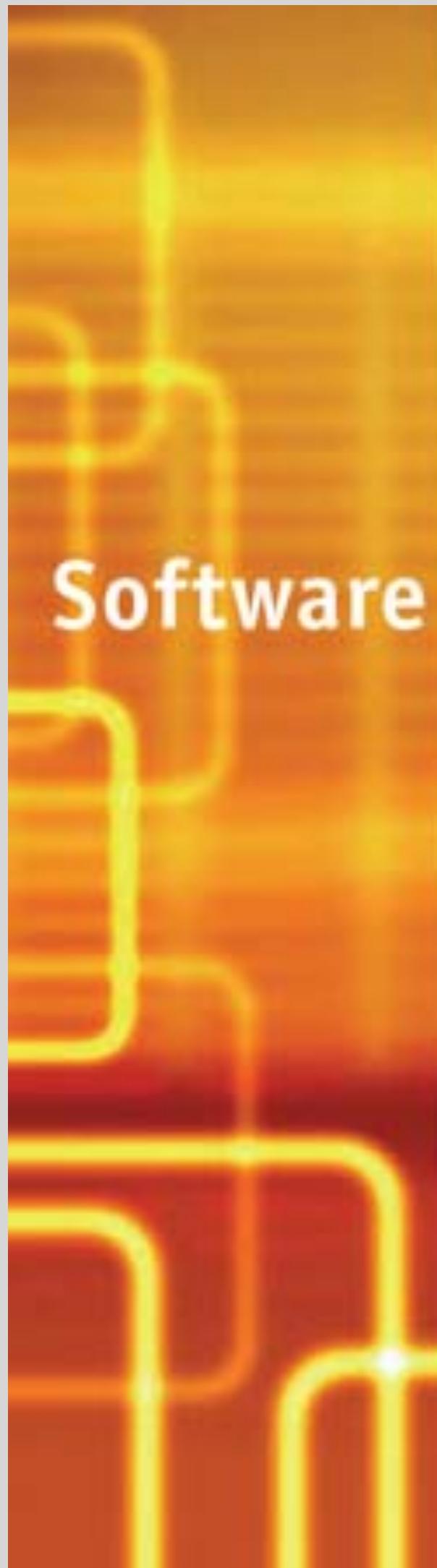


Assistant prof at CMU

where I work now



alloy: a lightweight, analyzable modeling language



```
1 abstract sig EndPoint { }
```

```
2 sig Server extends EndPoint {
```

```
3   causes: set HTTPEvent
```

```
4 }
```

```
5 sig Client extends EndPoint { }
```

```
6 abstract sig HTTPEvent {
```

```
7   from, to, origin: EndPoint
```

```
8 }
```

```
9 sig Request extends HTTPEvent {
```

```
10  response: lone Response
```

```
11 }
```

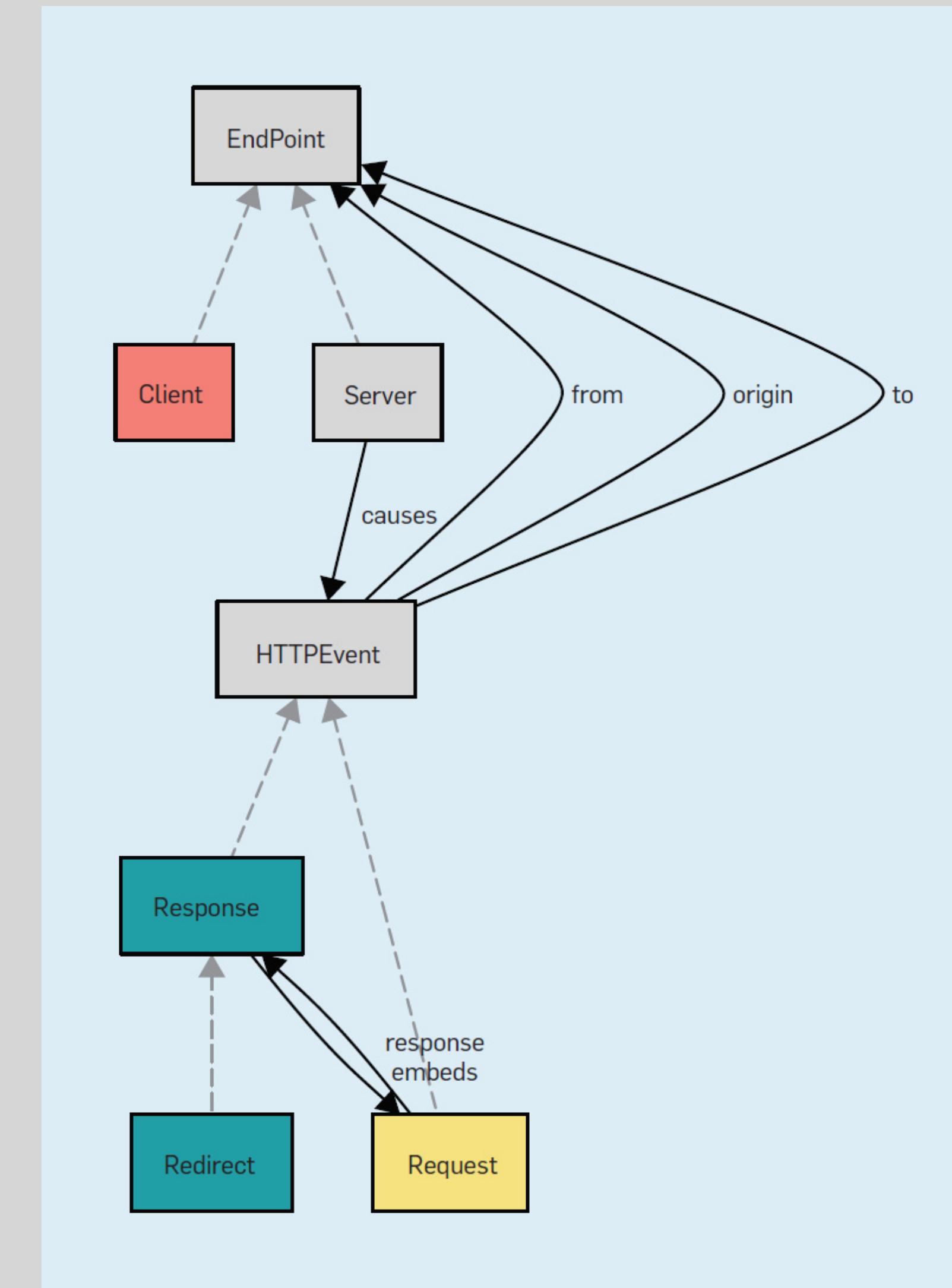
```
12 sig Response extends HTTPEvent {
```

```
13  embeds: set Request
```

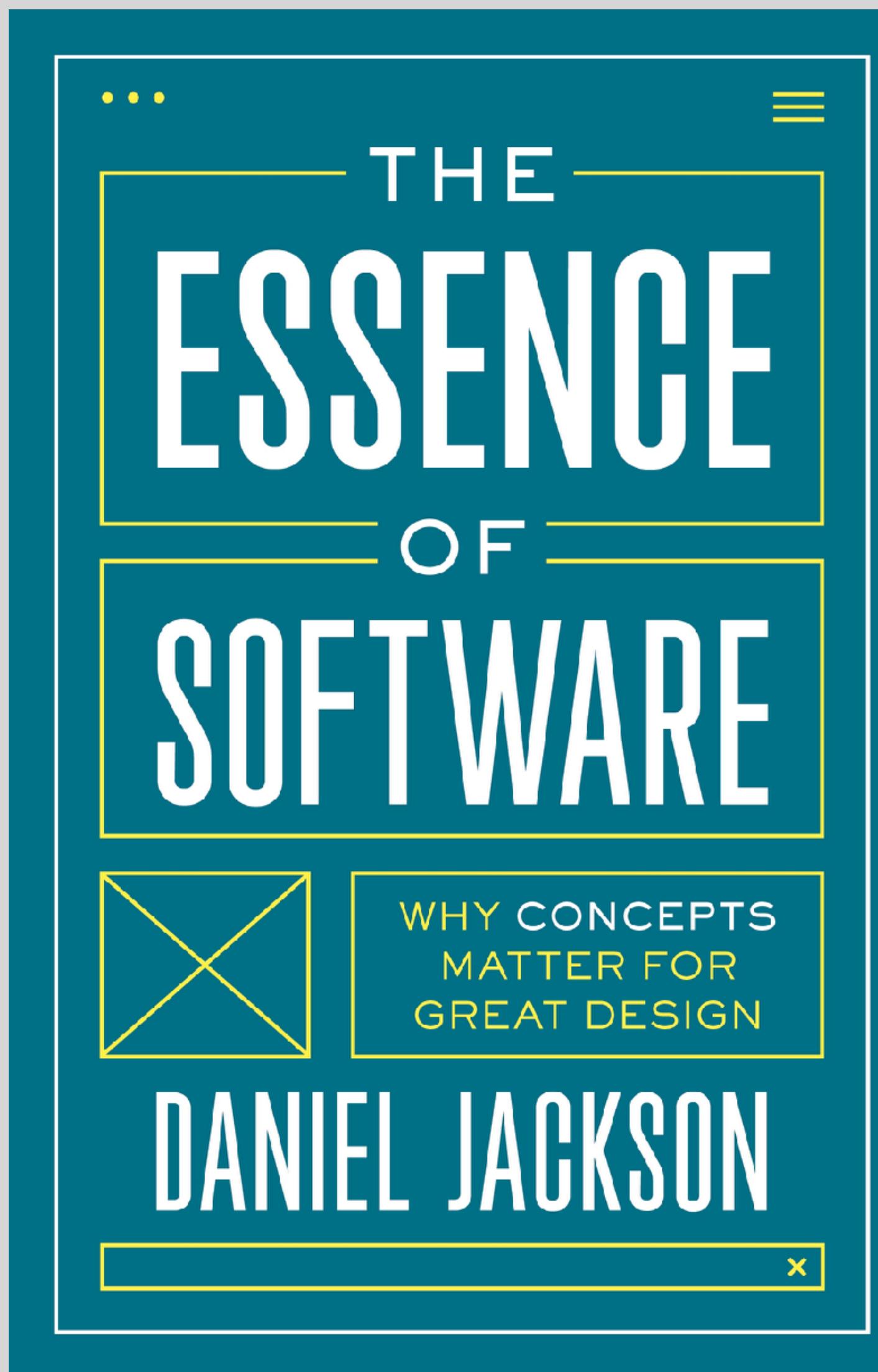
```
14 }
```

```
15 sig Redirect extends Response {
```

```
16 }
```



concepts: a new approach to software design



when I'm not working



workshop plans & goals

workshop goals

offer you a fresh viewpoint

find new insights & joy in your work, whatever your role

give you a language to articulate design ideas

capturing and articulating what great designers (already) do
a shared language for UX, engineering, marketing, etc

support application of concept design at Autodesk

strategic goal of integration of tools in cloud platform
maintaining simplicity & clarity as function grows even richer
concept catalog as a place to evolve & record design wisdom

experts and leaders

hoping some of you will become experts to help teach concepts
unified design team is central to integration effort

have fun and learn

looking forward to our time together & learning a lot from you!

Workshop Schedule

Time	Monday	Tuesday
9:00	Welcome (slides , goals poll , sw poll)	Presentations (continued)
9:30	Introducing concepts (slides)	Designing systems (slides)
11:00	Break	Break
11:10	Exercises (slides , comparisons)	Exercises (slides , reading , writing)
12:00	Lunch	Lunch
1:00	Presentations	Presentations
1:30	Designing concepts (slides)	Autodesk concept reviews
3:15	Break	Break
3:30	Exercises (slides , reading , writing)	Autodesk design exercise
4:30	Presentations	Presentations
4:45	End of day reflections	End of workshop reflections (survey)
5:00	Adjourn	Adjourn

schedule, slides, etc

<https://essenceofsoftware.com/autodesk>

how about you?

in one or two words, what do you hope for in this workshop?



in one or two words, what's the biggest software challenge autodesk faces?



how this project began
(almost 20 years ago)

a simple task: sign and return

Field Trip Permission Form

Dear Parents:

Ms. Frizzle will again be taking her second grade class on an exciting field trip. Please sign and return the permission slip below.

Thank you!

Yes, I give permission for my child to go on the second grade "Touch and Feel" trip on Friday February 13th to the NastyCo Nuclear Dump. I understood that my child may encounter the normal risks of childhood play, including grazed knees, hurt feelings and exposure to toxic waste.

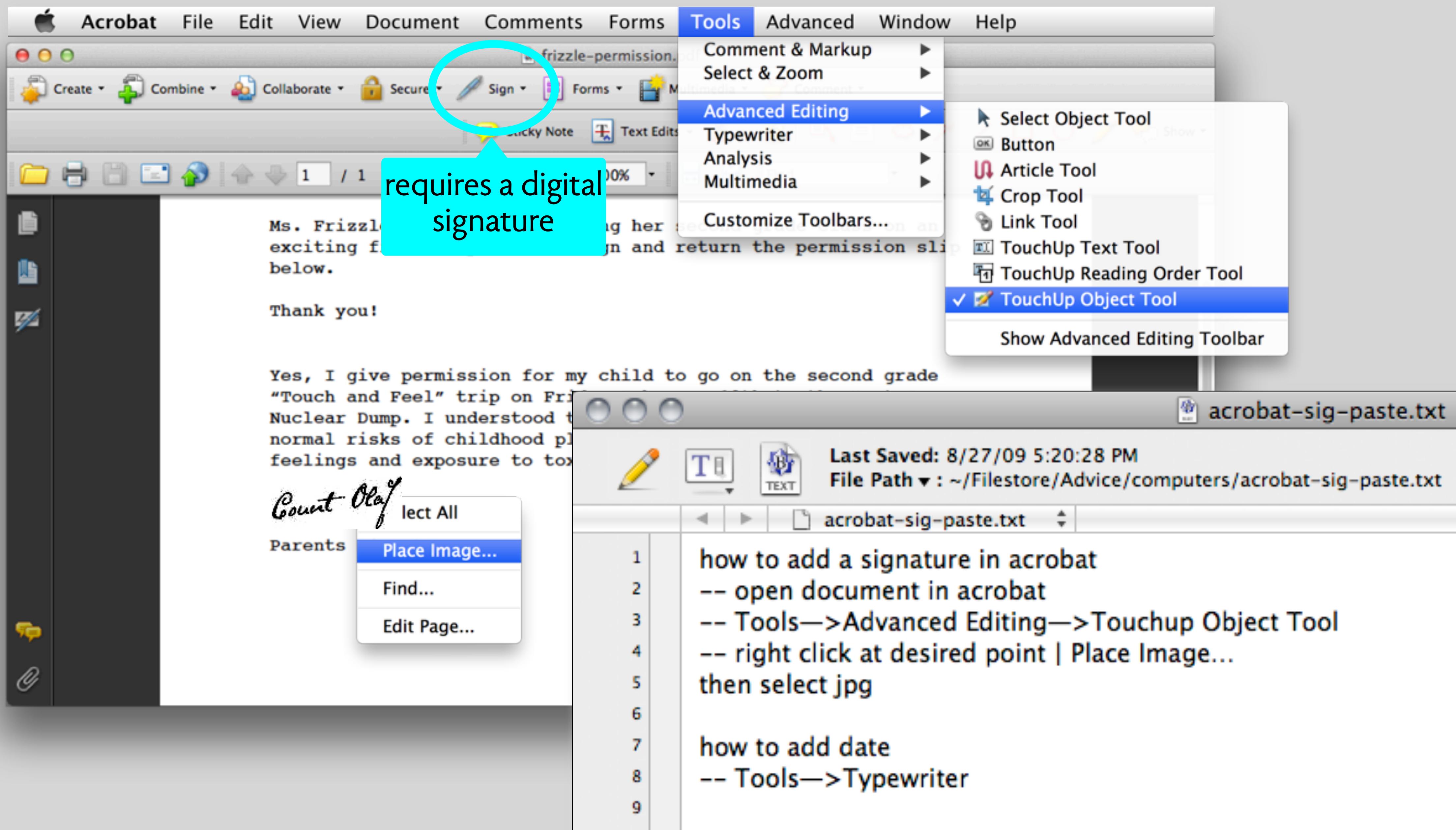
Count Olaf

Dec 12, 2009

Parents signature

Date

acrobat to the rescue?



not just me ...



what kinds of problems are these?



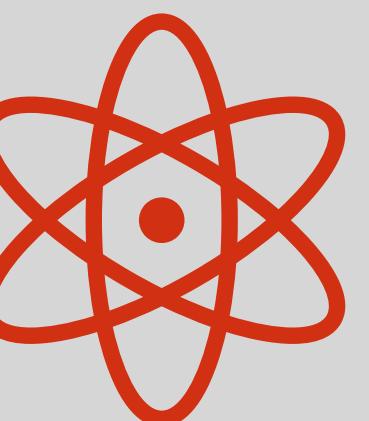
not human errors



not bugs in the code



not UI design flaws



not lack of technology

if only...

we could figure out...

what makes some apps slick and easy-to-use and some clunky?

why some products take off and others gather dust?

how to design apps to make them flexible, powerful and simple?

then we might...

improve the quality of software & people's lives

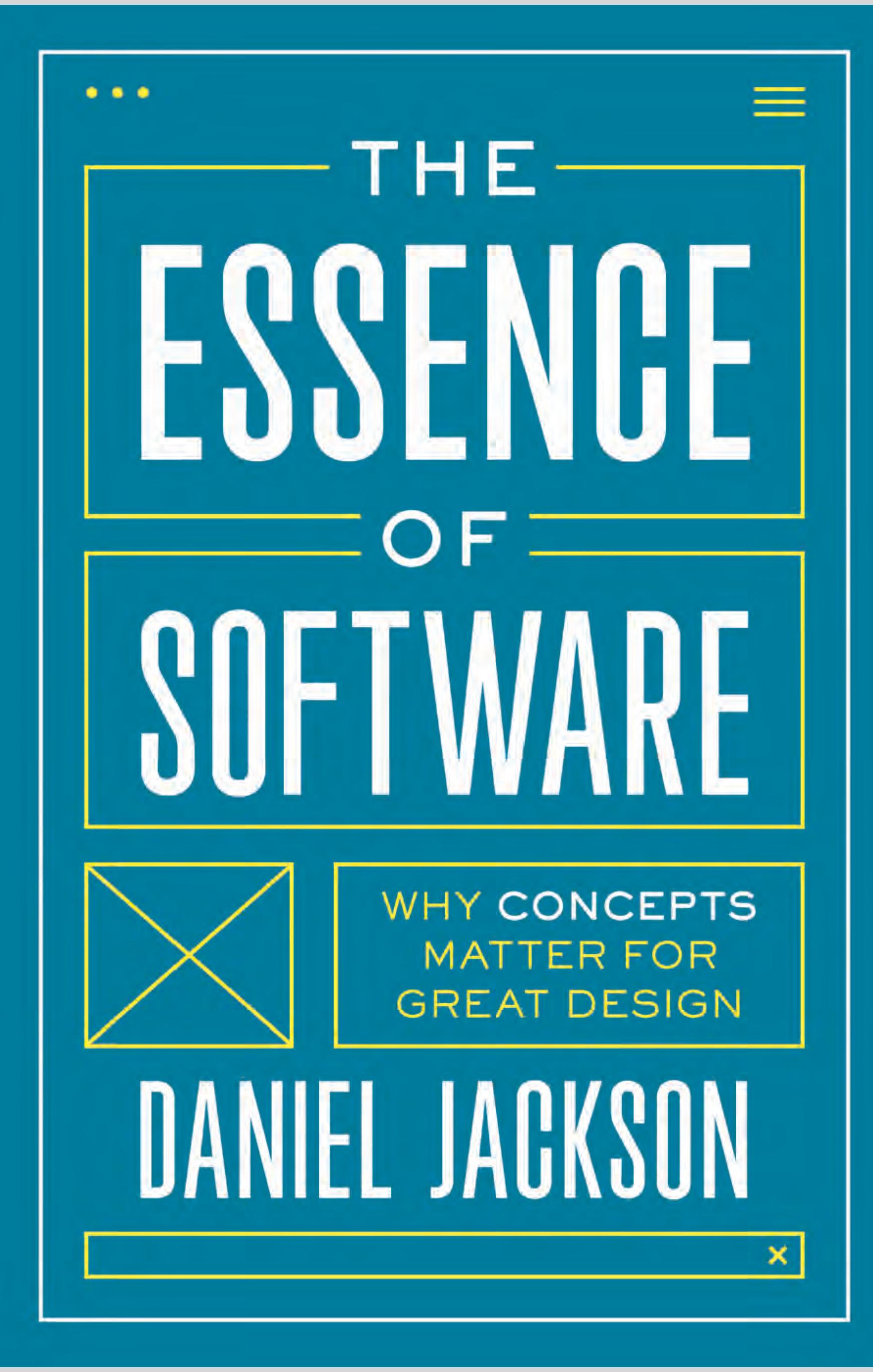
know how to design successful products

reduce complexity for users & developers alike

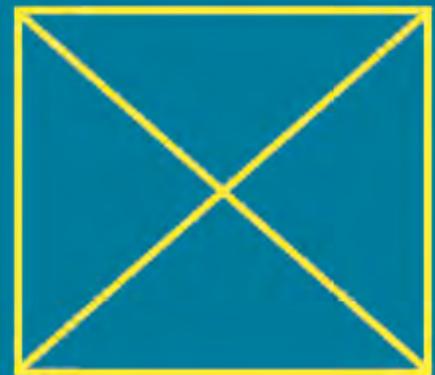
another way to put it

what do the best designers know?

can we formulate it systematically?



THE ESSENCE OF SOFTWARE



WHY CONCEPTS
MATTER FOR
GREAT DESIGN

DANIEL JACKSON

analyzed about 100 software apps
what makes them good? what causes problems?
best not worst: Adobe, Apple, Google, Microsoft, etc

evolved approach to concept design
a way to describe & structure functionality
simple & applicable design principles
showed how violations lead to bad experiences

half the book is end notes
organized as standalone mini-essays
where the substance is (including my best pasta recipe)

what's next?

introducing concepts

why do concepts matter?

how can concept design help?

where do concepts come from?