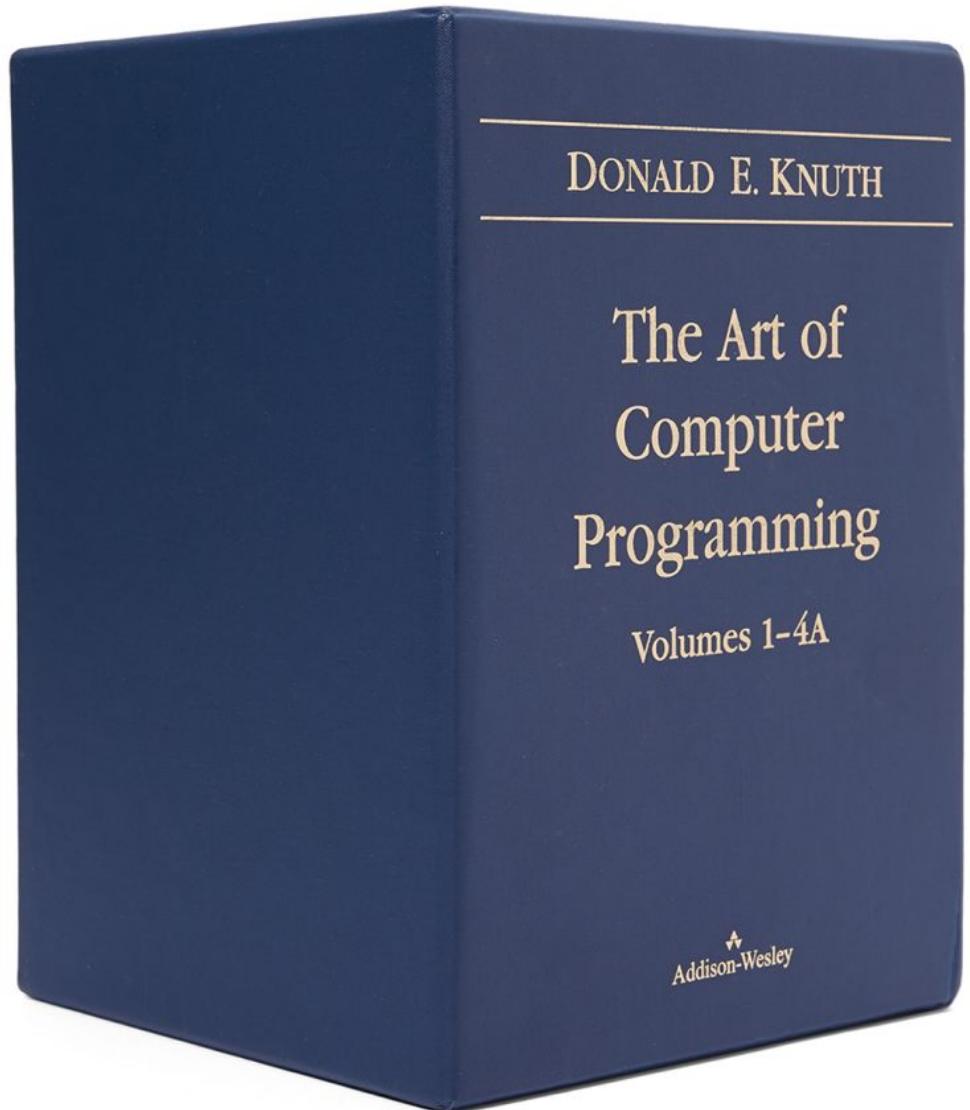


# Developers are (Conceptual) Designers

Mathieu François - March 2022

<https://digitalstoic.io/>

*Is programming science or art?*



**This is the most mythical  
programming book ever**

**Written by a computer *scientist***

(acknowledged by [Bill Gates himself](#))

*“Paul Graham’s prose is brimming with contrarian insight and practical wisdom.”*

—Andy Hertzfeld, co-creator of the Macintosh computer

PAUL GRAHAM

# HACKERS & PAINTERS

BIG IDEAS FROM THE COMPUTER AGE



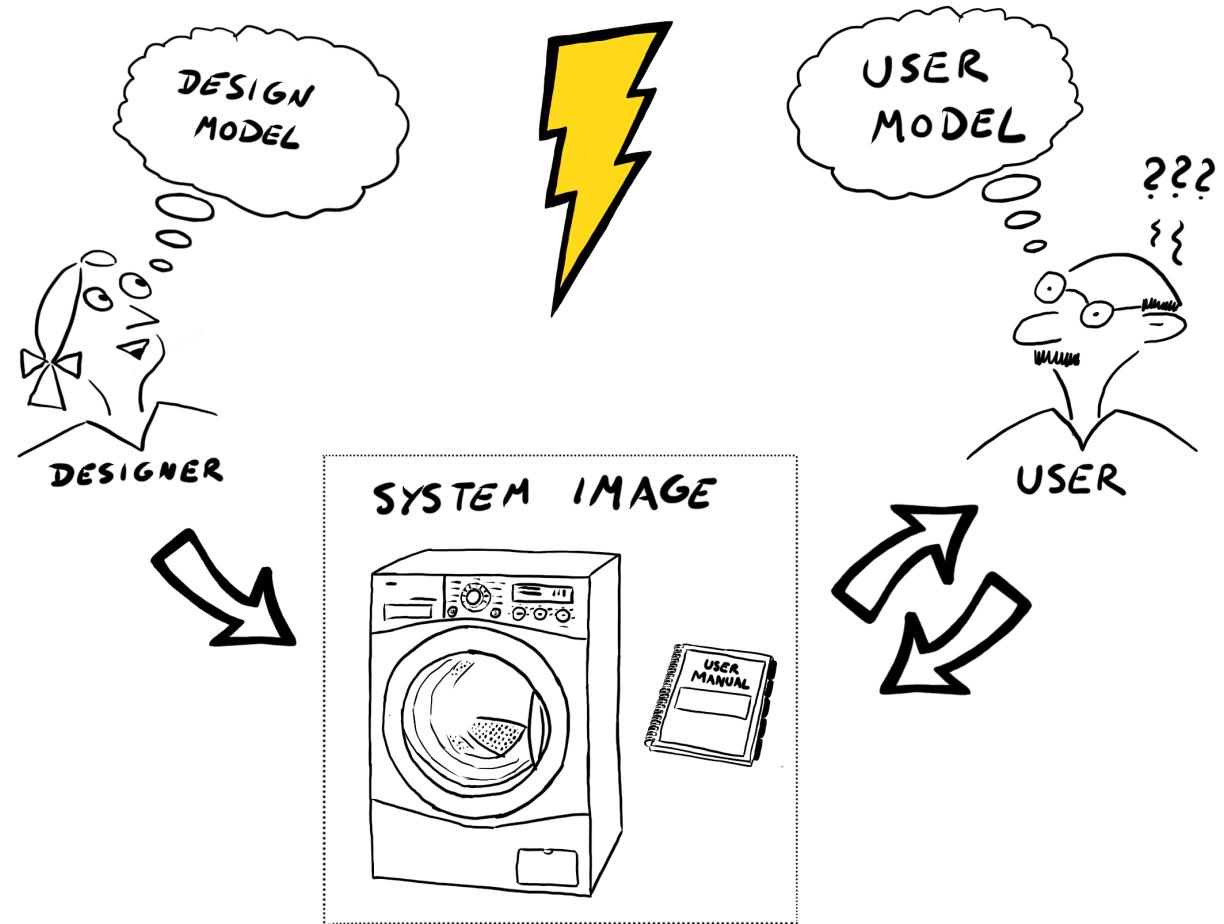
The founder of Y combinator  
shares a similar vision

*Why do experts emphasize creativity in  
programming?*

# It's all about mental models

Good developers:

- Turn into reality conceptual models, in a clear and safe manner that meets the users' expectations and world view
- Are good at mental models of mental models

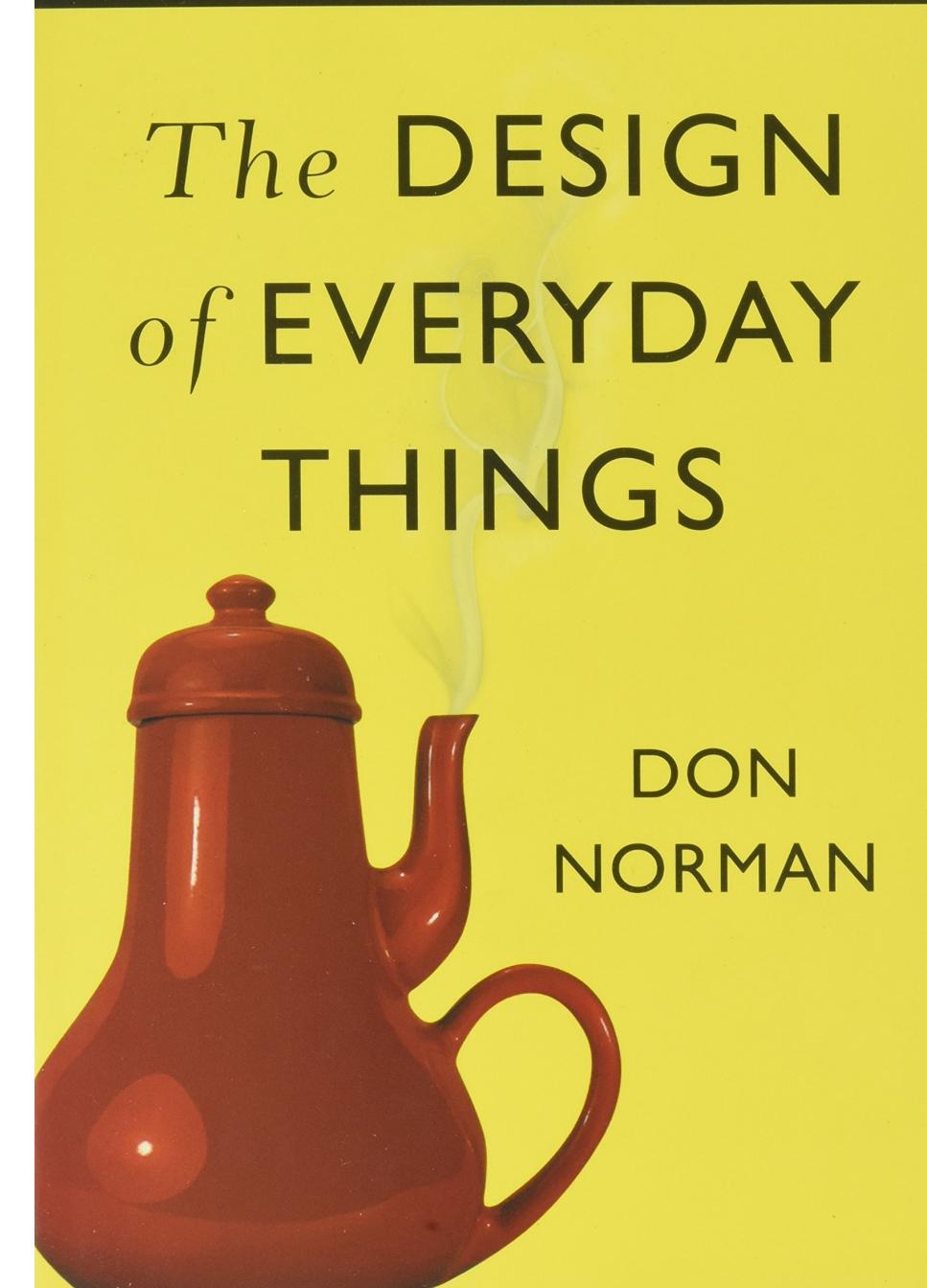


# This is *real* design

Principles from the best design book ever:

- Visibility, affordance, **system image**, ,  
**mental models**, (natural) mapping,  
feedback

Sir Fred Brooks: [The Design of Design](#) (nothing  
new since the IBM 360 in the 60s)



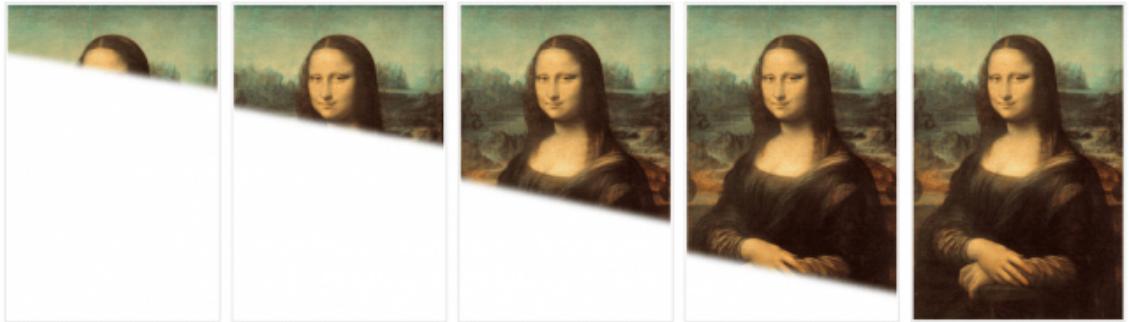
# Waterfall development

Needed by space engineering



# Corporate Agile

Iterative only is not enough



# *Real* Agile = Sketching

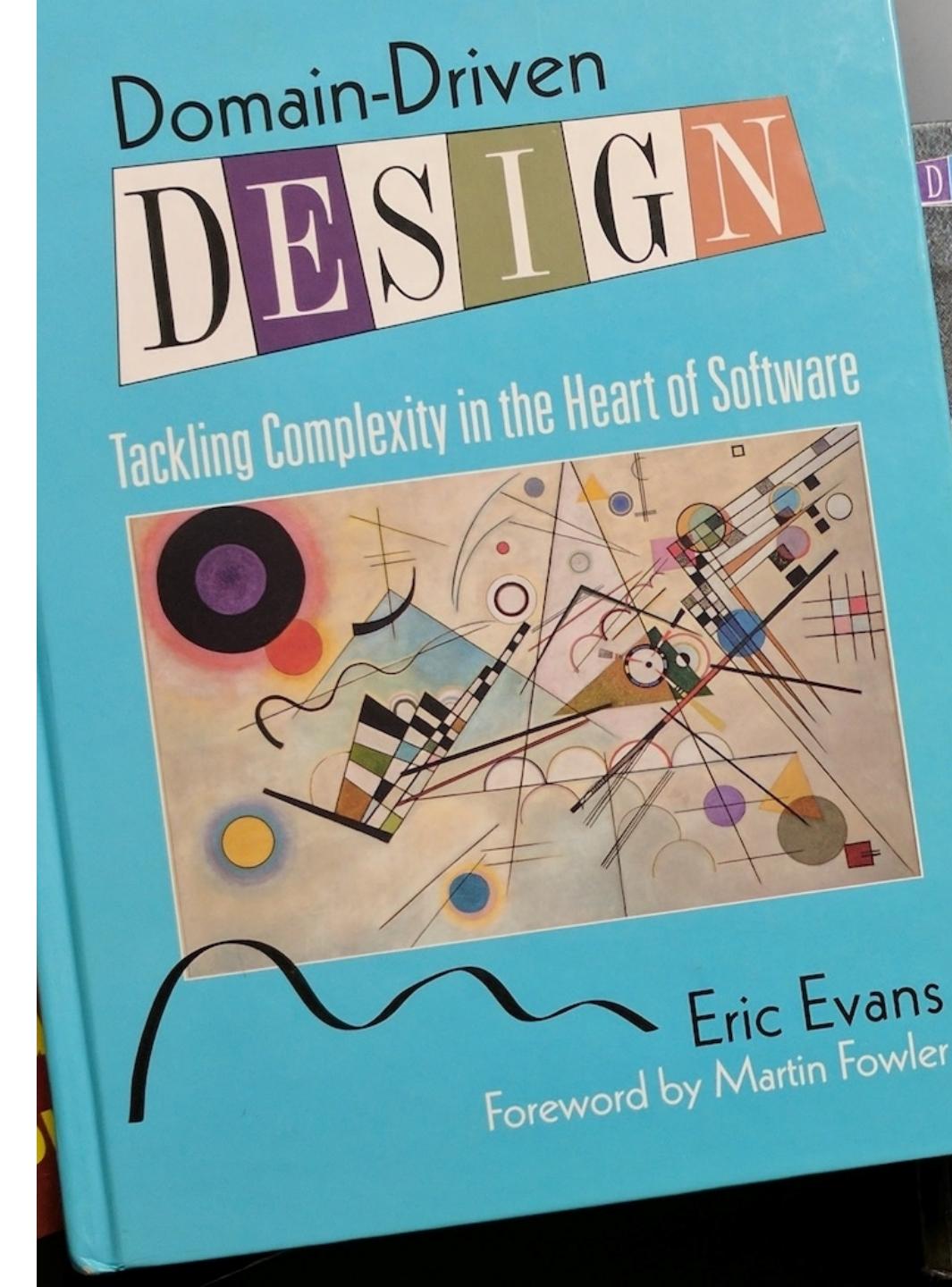
Refine over time the conceptual model



# Many methodologies around the corner

Design Thinking, Domain-Driven Design,  
Design Sprints, etc...

But we're far from satisfactory practices. As an industry, software is still *immature*



# The dangers of bad design

It's not a process failure, it's a **design failure**:

- As a Maker, *what am I supposed to do?*
- As a Checker, *am I sure how the system work? Will there be side effects?*

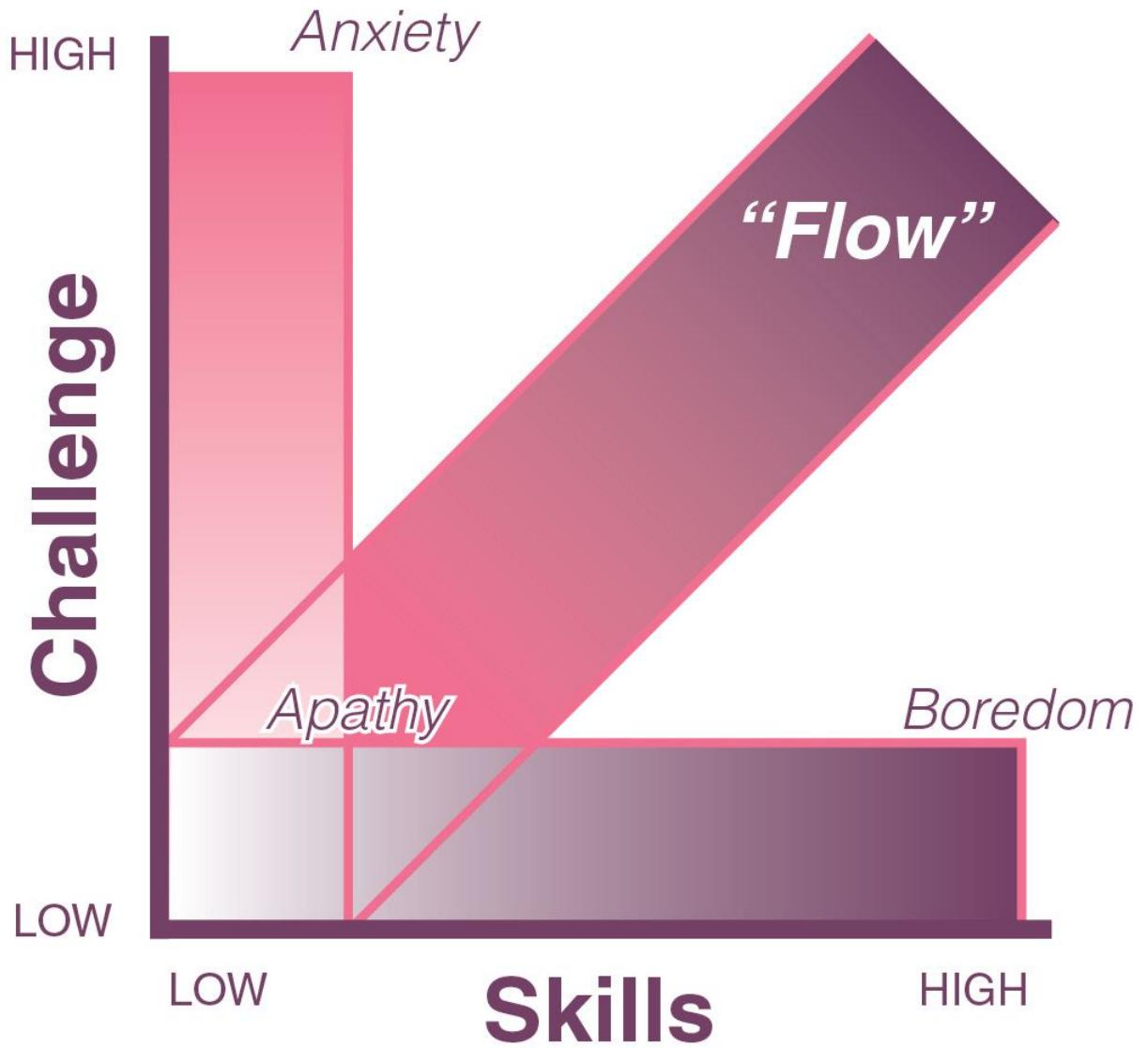
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*So what should we do?*

# Foster good design

It's not about fancy office and post-its. What matters:

- Build **shared understanding**
- Protect the **flow of developers**
- Enable safe experiments[  
... and good **Agile philosophy**



# The future of programming: better design

# **Low Code is for those who are afraid of code**

Nothing new: "Everything besides assembly language is low-code"

Well managed clear code is an asset, not a liability

# **Can't Code? No Problem**

We'll show you how to build your business without code – Just tell us what you want to create

Or check out our free resources below!

Online Store

Application

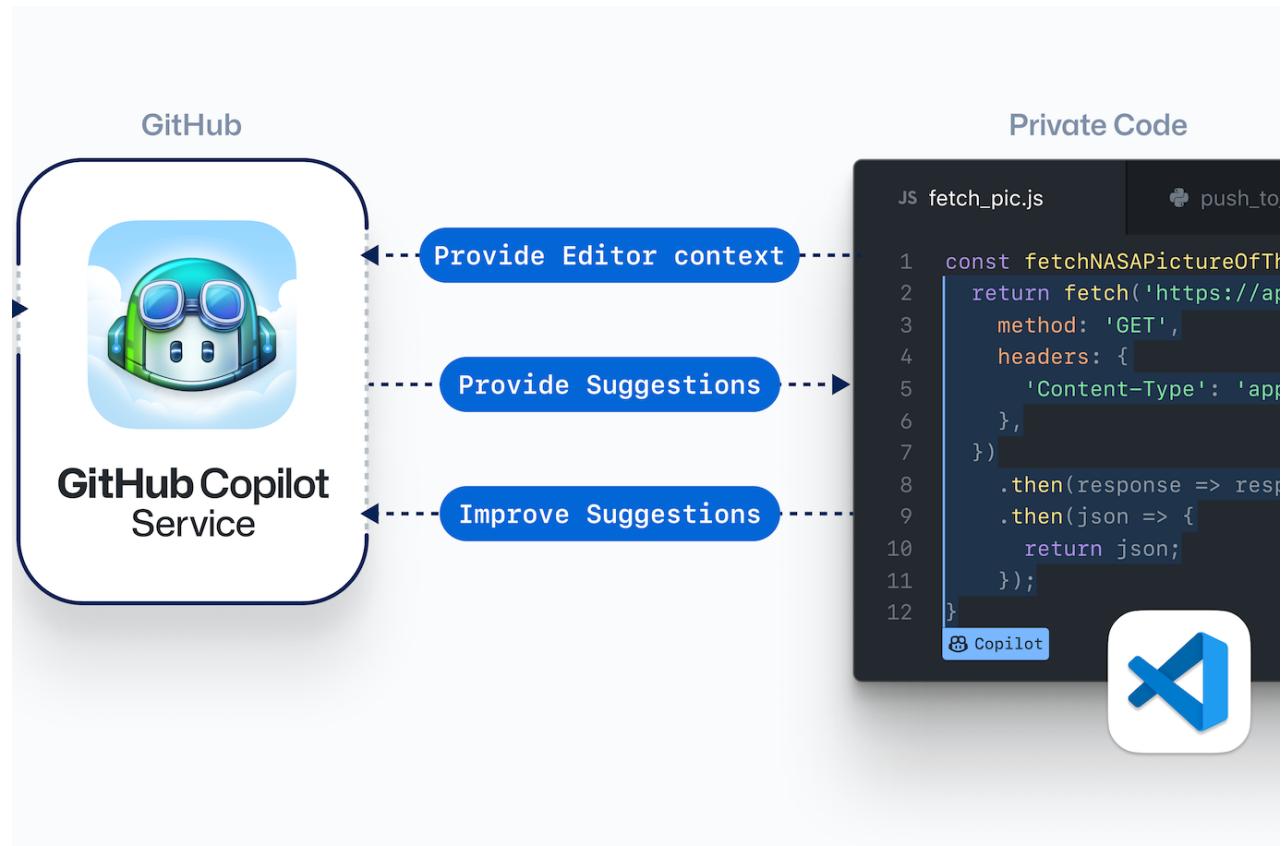
Newsletter

Landing Page

# AI as developers?

GitHub Copilot is an impressive start  
but it mostly generates boilerplate

AI generating conceptual models of  
"real world" will be close to general  
intelligence



# Higher and higher level languages

Promising (but not new) techniques,  
especially from FP:

ADT ([Algebraic Data Type](#)), DSL  
([Domain Specific Language](#)), Literate  
programming ([Knuth again](#)),  
declarative languages, etc



**Let's spread ❤️ and good (conceptual) design**

PUSH

PUSH



PULL

PULL

