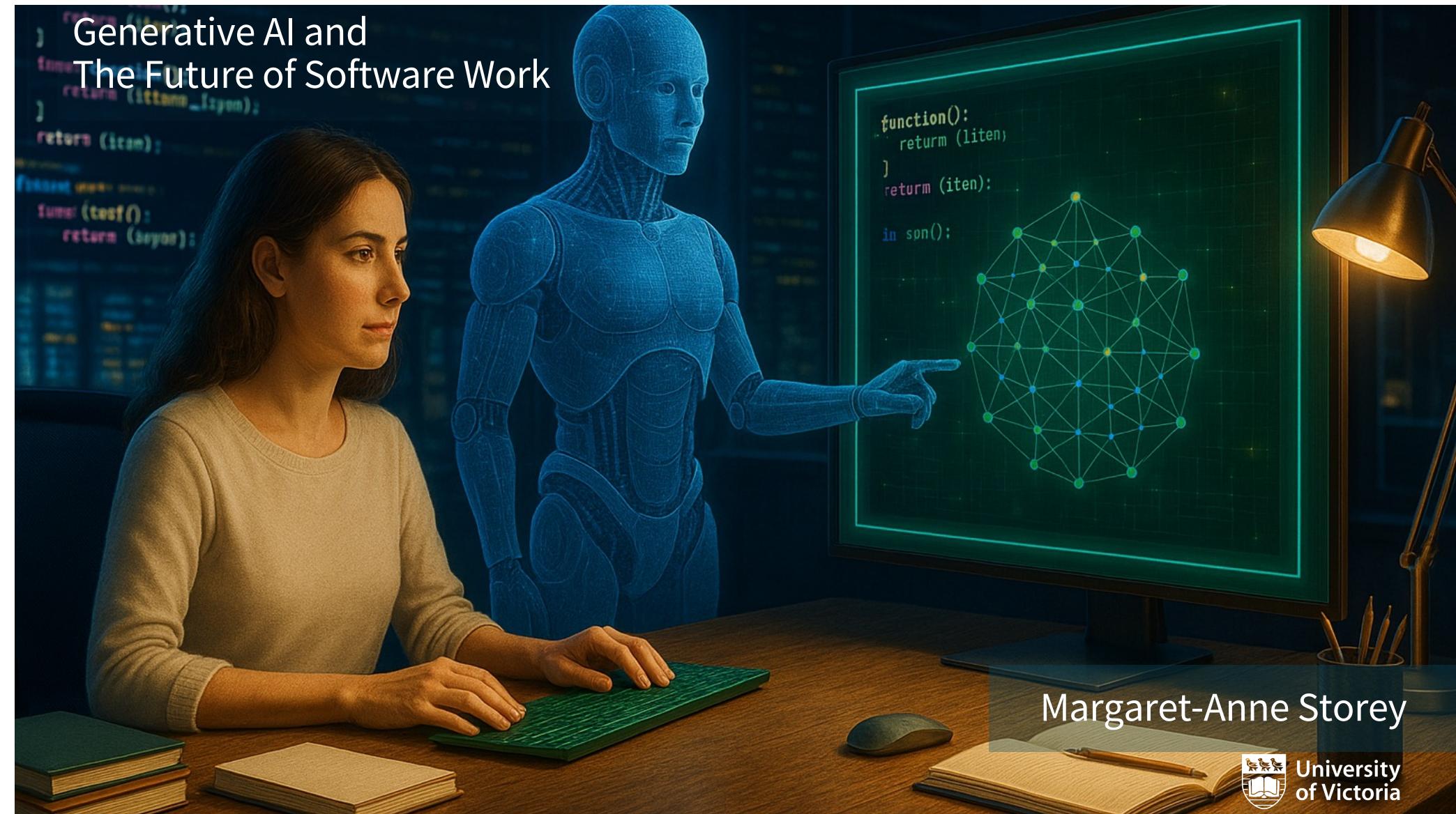


Generative AI and The Future of Software Work



Margaret-Anne Storey

Dublin, 1980's

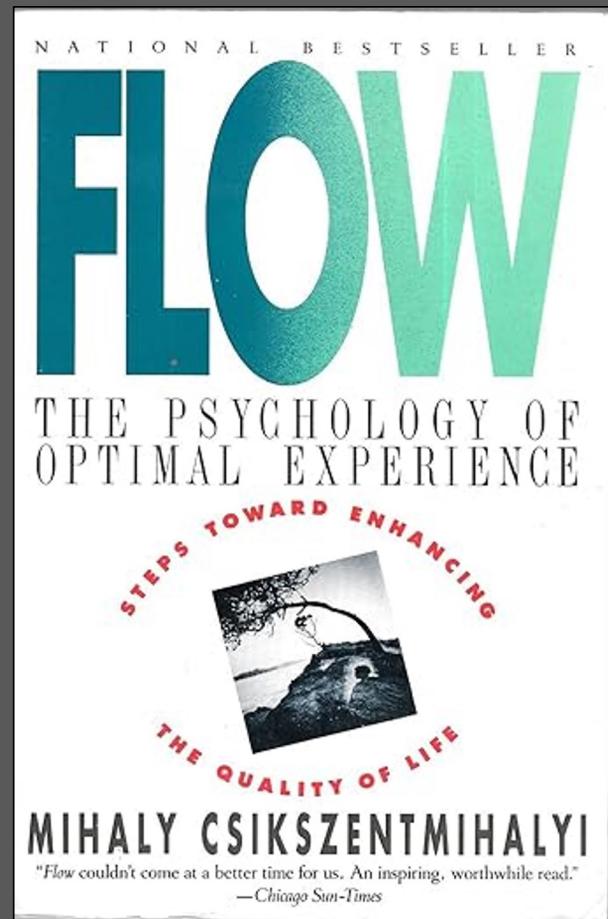


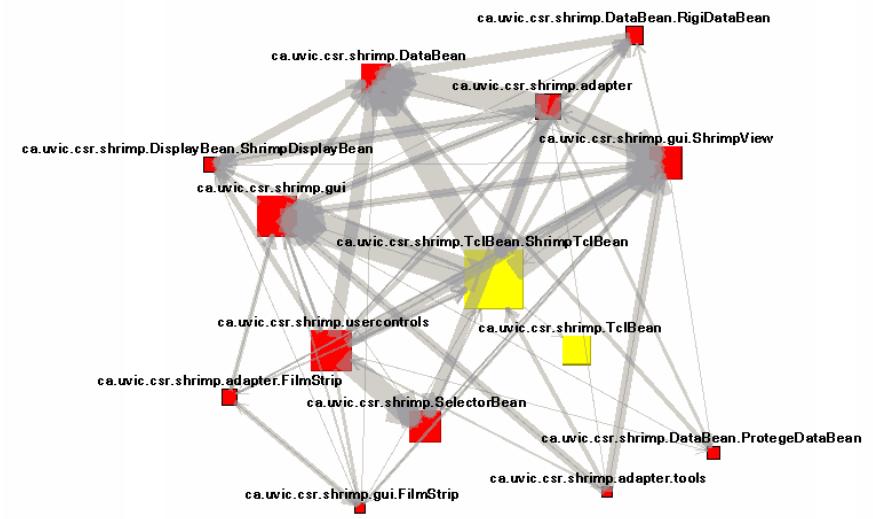
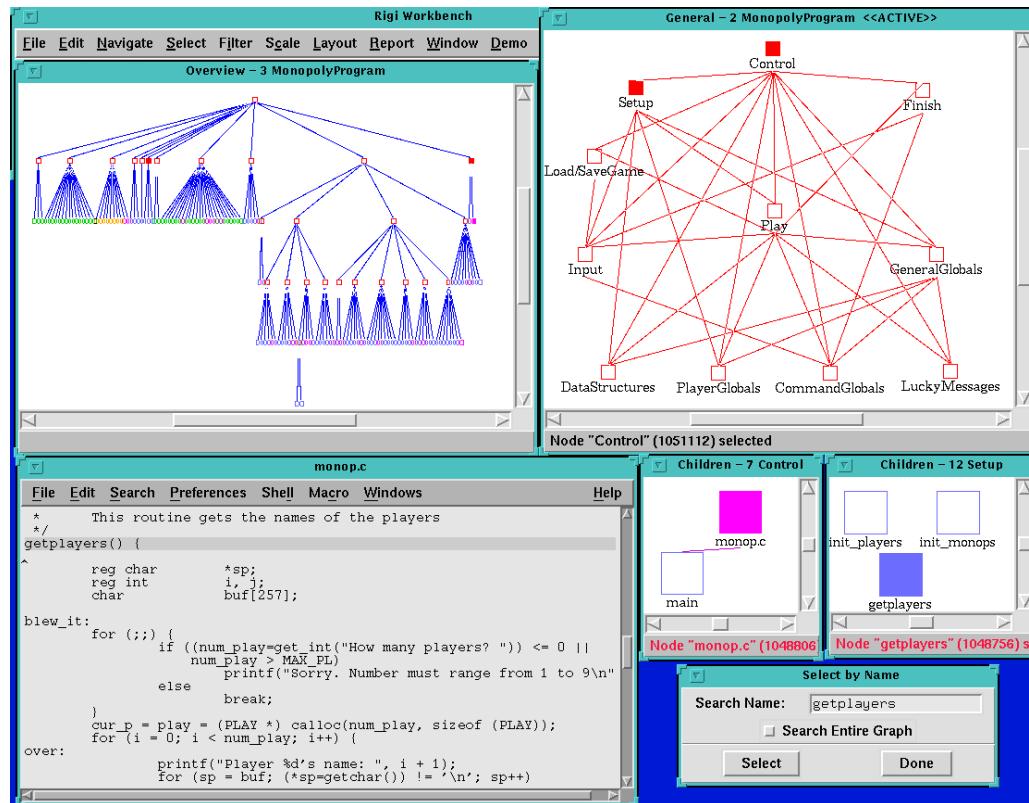
Dublin, 1980's



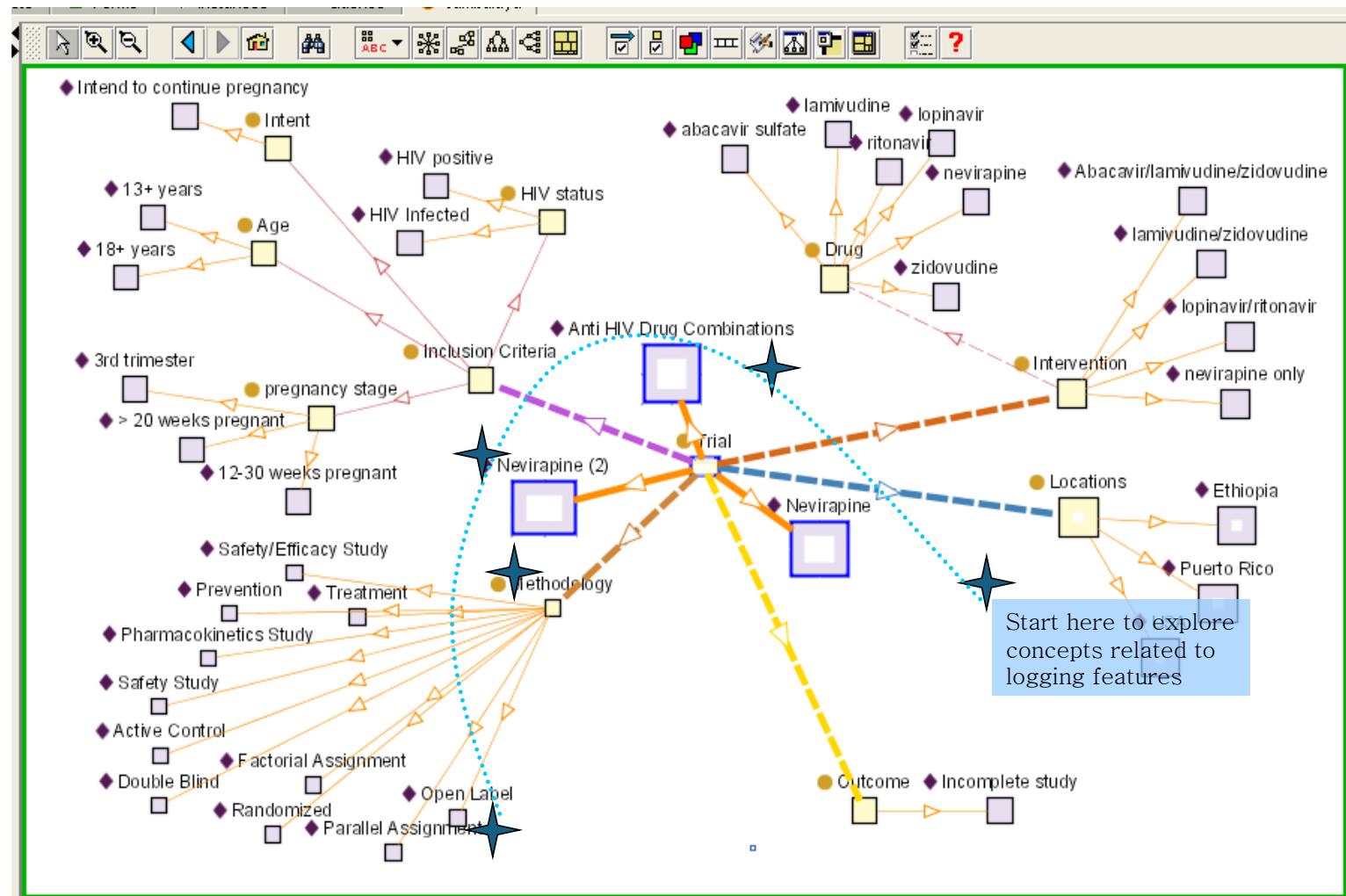
Software brings ideas to life!

Balance of skill and challenge
Intense concentration
Sense of control over one's actions
Distorted temporal experience
Activity is intrinsically rewarding
Team flow enhances creativity, joy,
motivation, social connection

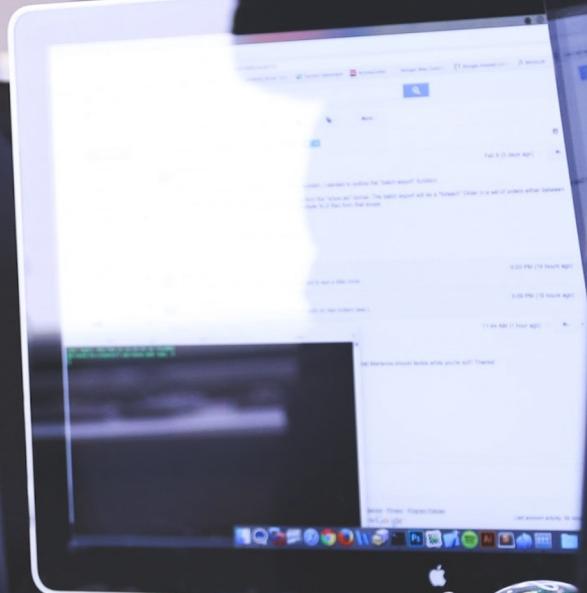




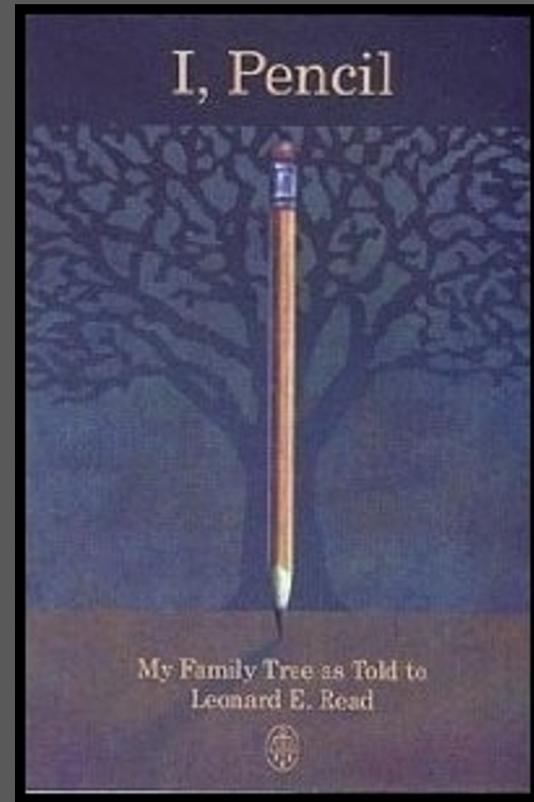
Software Visualization



Software developers are the **knowledge workers** of tomorrow...



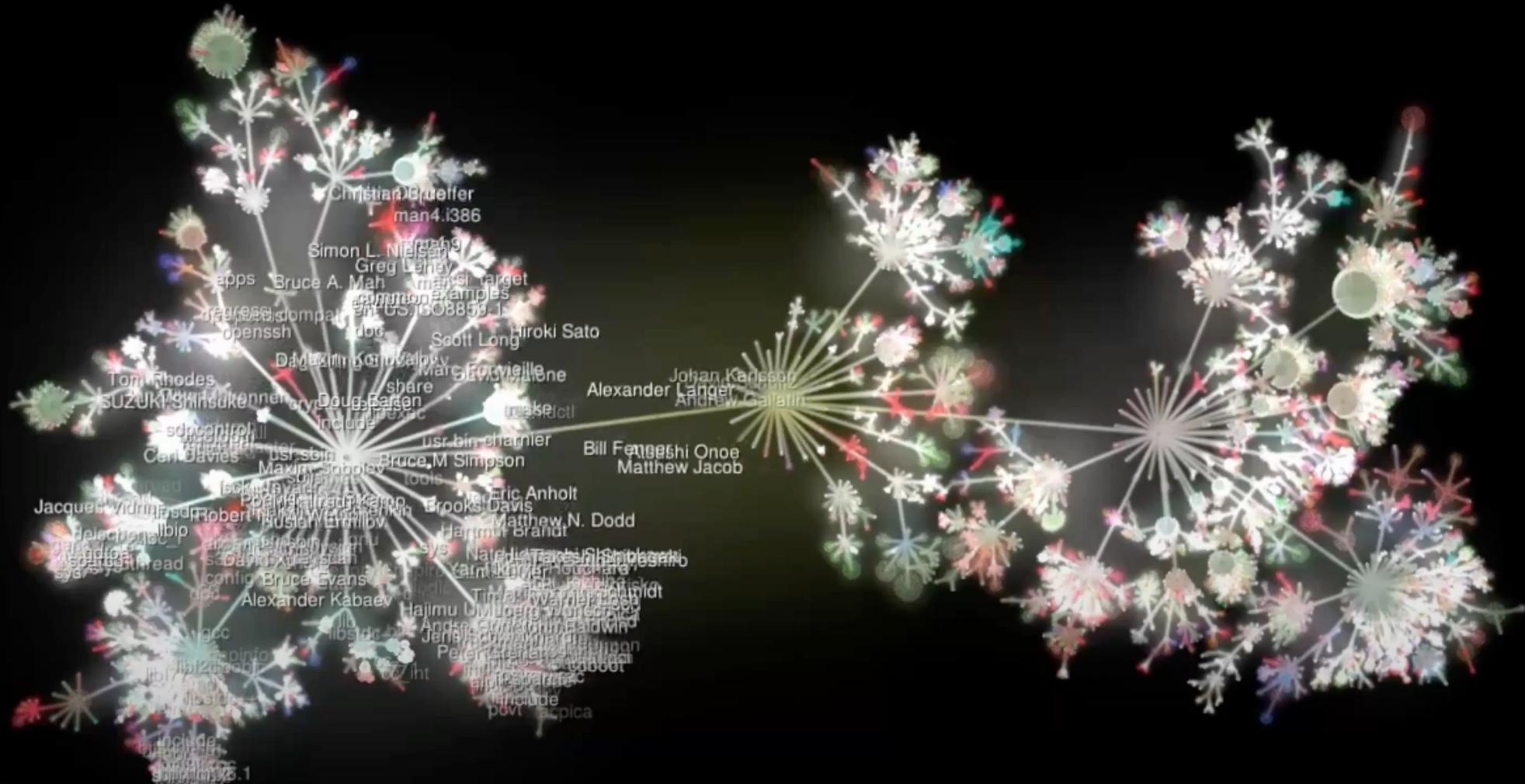
*A program is a shared mental construct,
a theory of the program which lives in
the minds of people who work on it*
[Naur, 1985]



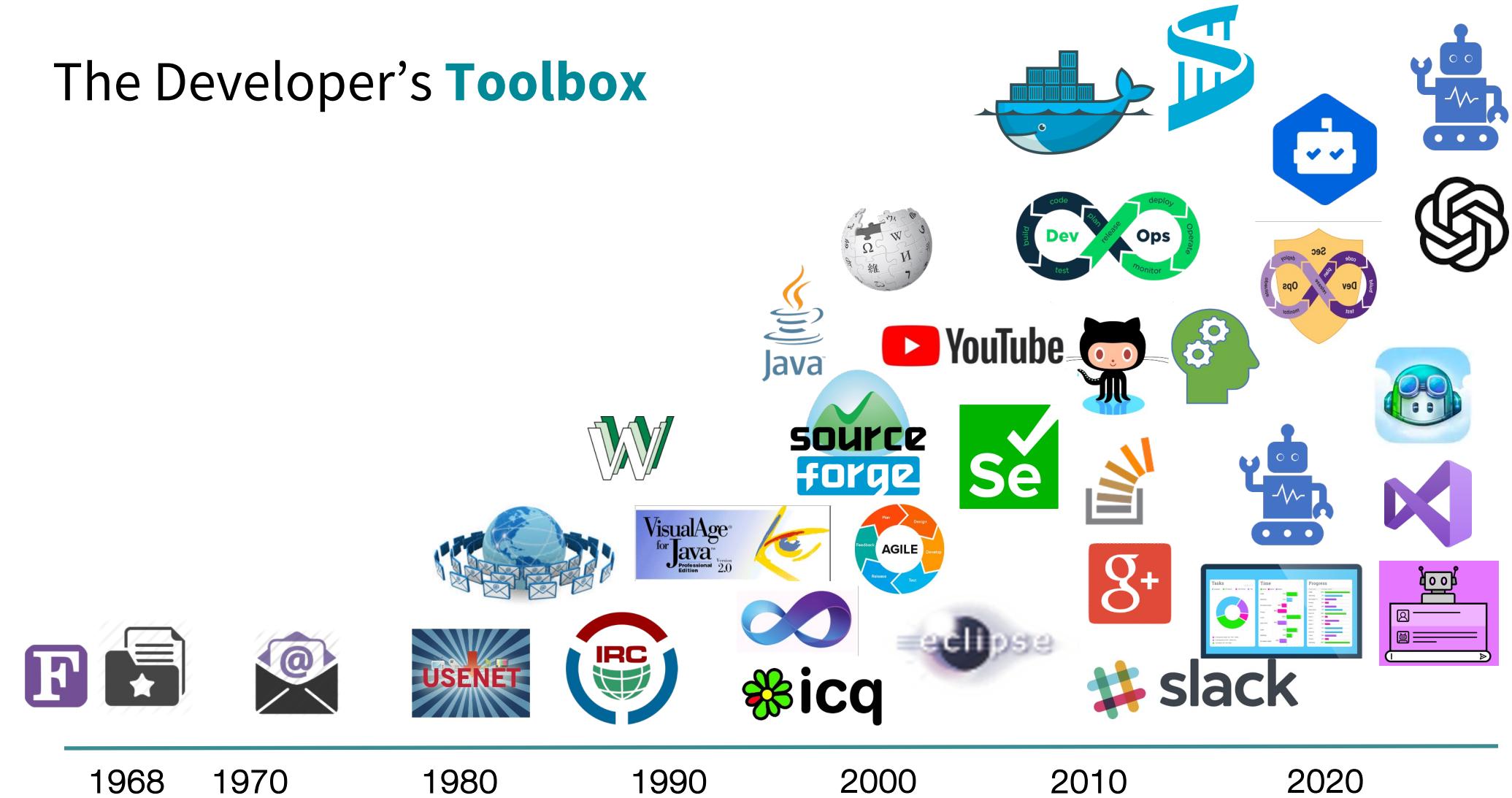


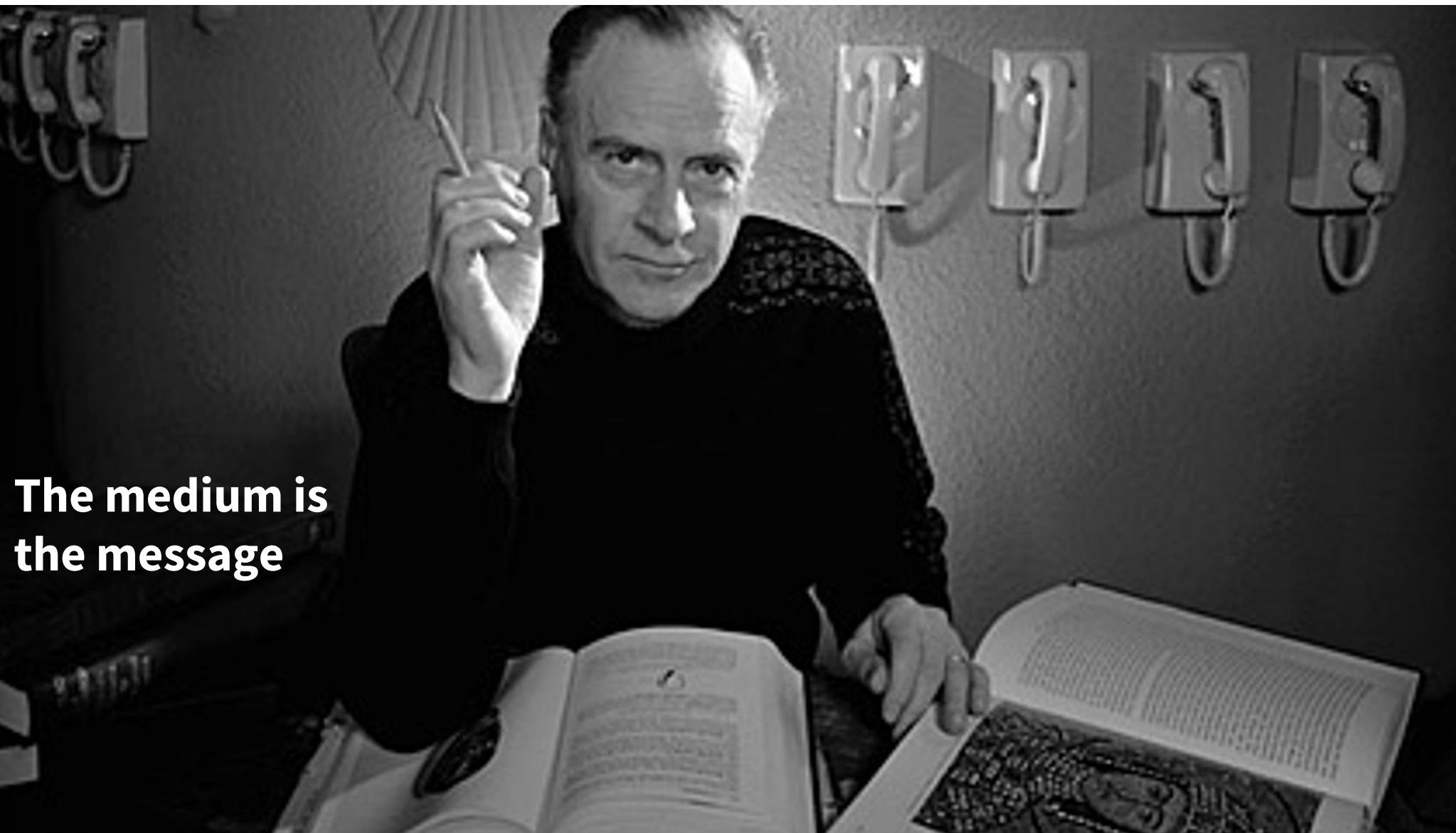
Evolution of unix-history-repo (Gource Visualization)

Sunday, 18 January, 2004 14:29:46

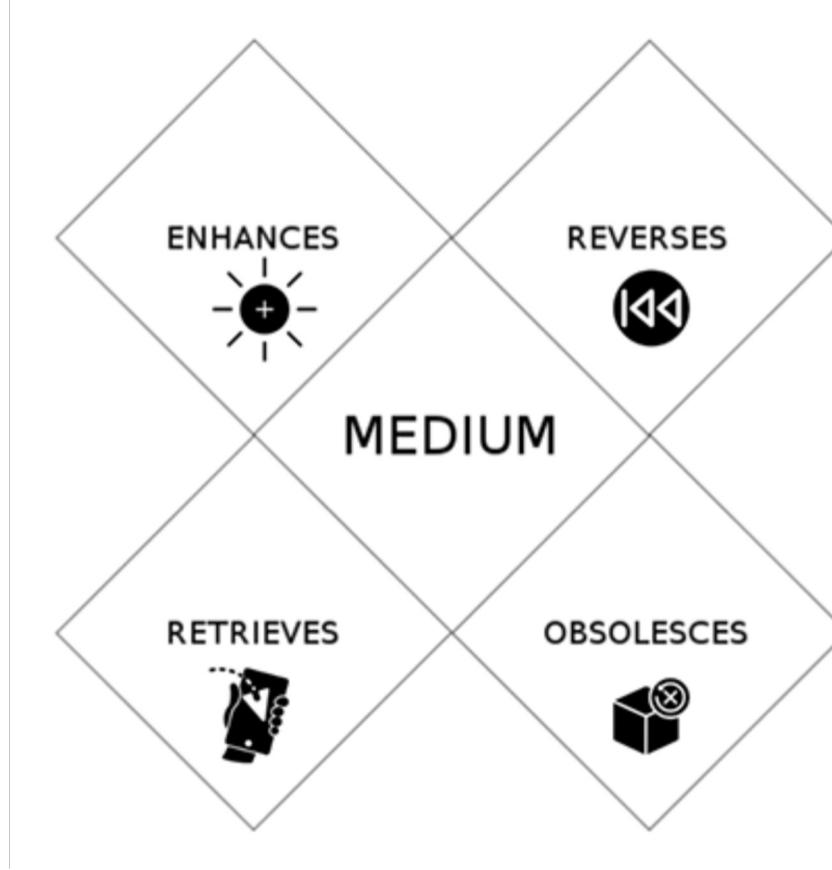


The Developer's **Toolbox**





**The medium is
the message**



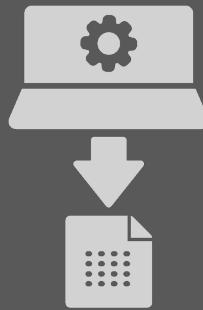
McLuhan's **tetrad**: Four laws of media

McLuhan, M. (1975). McLuhan's Laws of the Media. *Technology and culture*, 16(1), 74-78.



Software Development in the Age of AI?

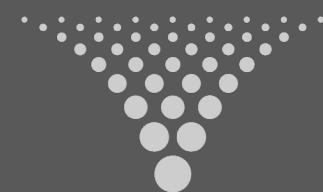
GenAI uses deep learning models to **generate** “data”



Relies on **prompts** to generate plausible responses

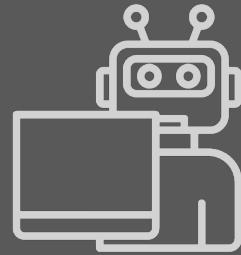


What is generated is based on **patterns** of what it saw before

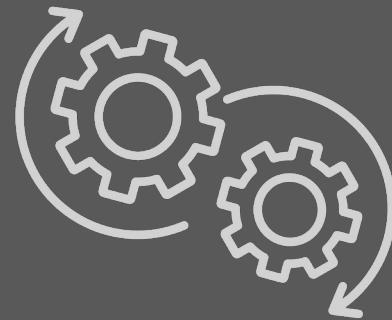


Technical Perspective: What is Generative AI?

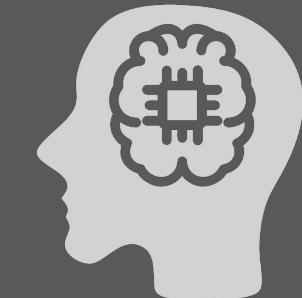
Automates
tedious work or tasks



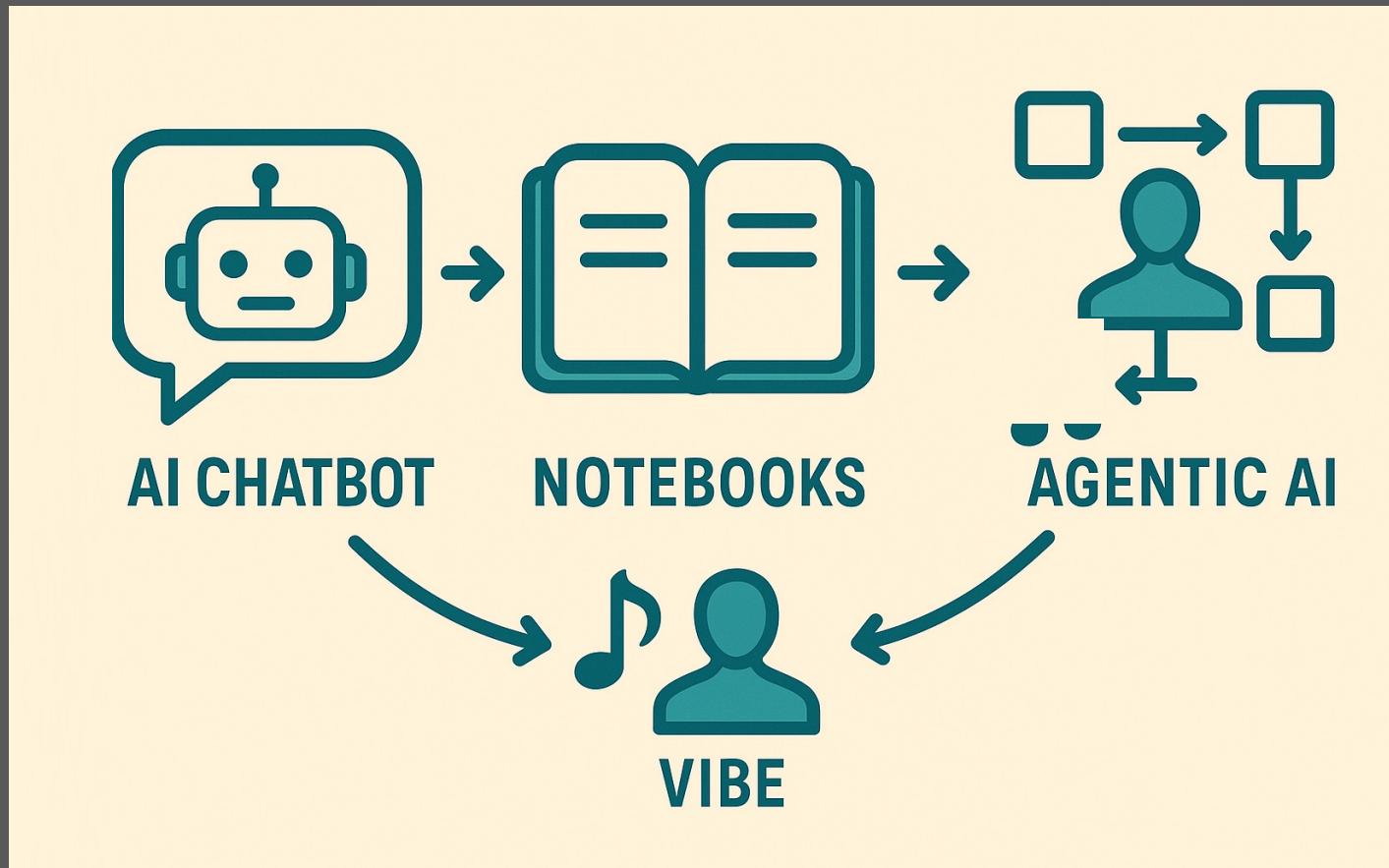
Makes hard tasks
easier by taking an
assisting role



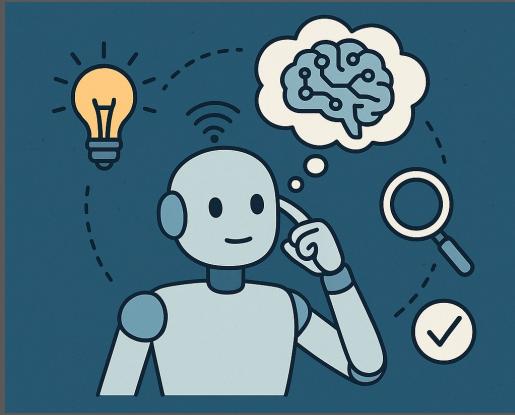
Amplifies or augments
human intelligence



Human Perspective: What is Generative AI?



Human-AI Interactions

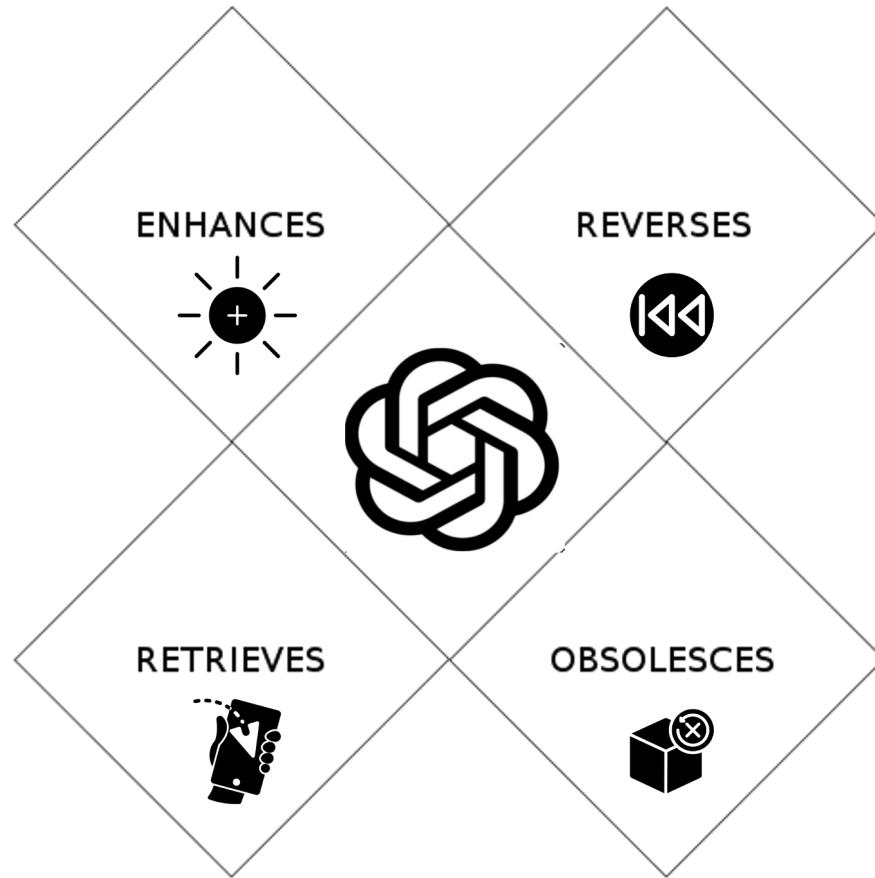


AI calls for new
metacognitive skills as
humans and tools
co-evolve



Faster development
Code quality
Who can program

Natural language
Creativity
Ethical/privacy concerns



Over-reliance (hacking)
Quality/skill erosion
Creativity saturation
Control over content
Joy of programming
Human connection

Manual coding
Narrow skills
Traditional education

McLuhan **tetrad** applied to GenAI in Software Engineering

Margaret-Anne Storey
<https://www.linkedin.com/in/margaret-anne-storey-8419462/>

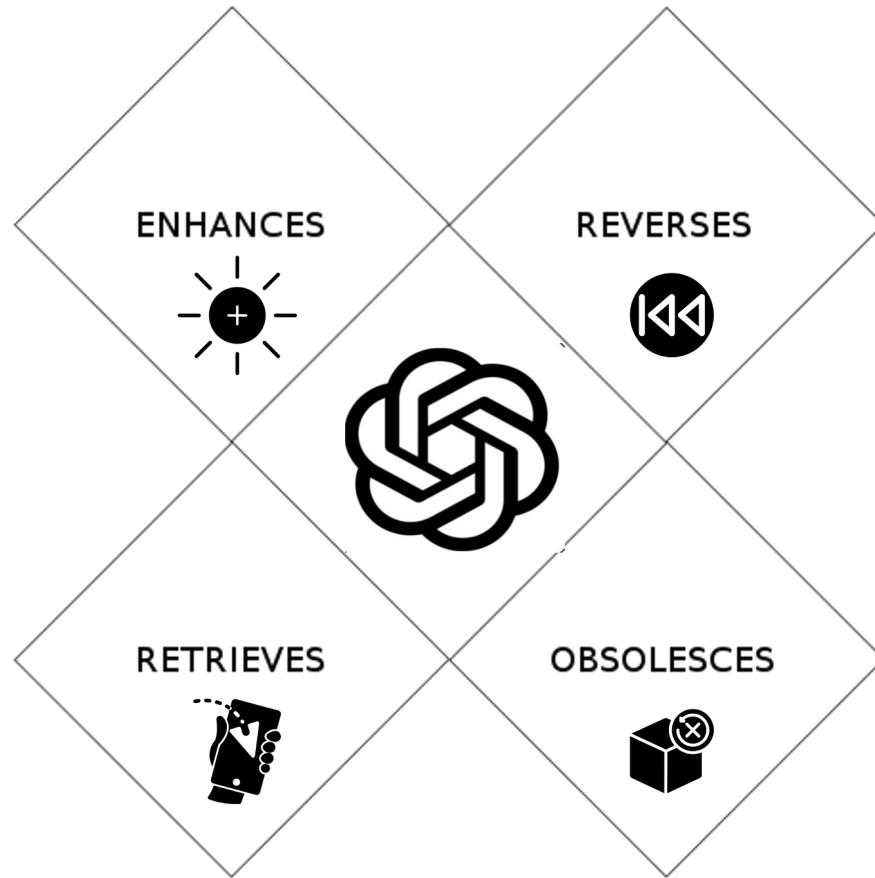
🌀 Metaphorically, GenAI may "flip" from:

-  A power tool →  A trap of automation dependence
-  A collaborative assistant →  An invisible gatekeeper
-  A spark for flow →  A barrier to deep understanding

We need to shape our tools, so they don't shape us...

*Faster coding
Quality
Who can program*

*Natural language
Creativity
Ethical/privacy concerns*



*Over-reliance (hacking)
Quality/skill erosion
Creativity saturation
Control over content
Joy of programming
Human connection*

*Manual coding
Narrow skills
Traditional education*

McLuhan **tetrad** applied to GenAI in Software Engineering

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