

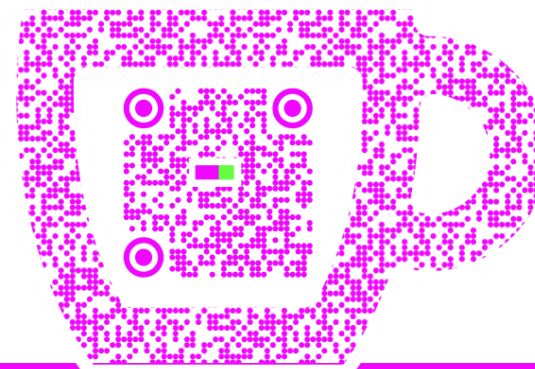
# AI Instead of Software Architects – Really?

Book an  
appointment  
with me!

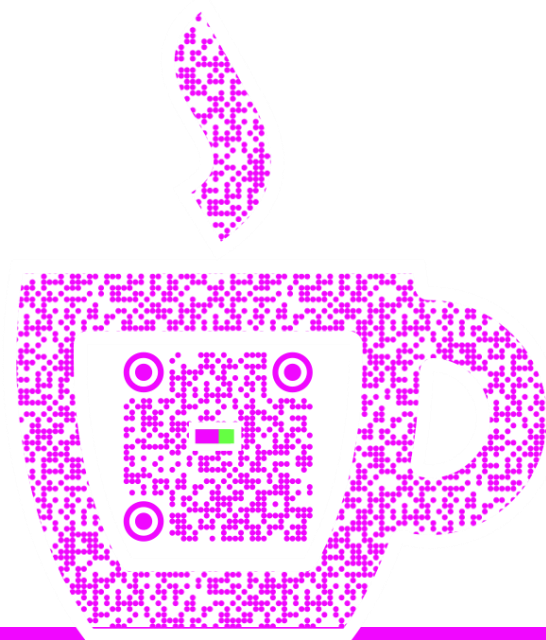


Eberhard Wolff  
Head of Architecture

<https://swaglab.rocks/>  
<https://ewolff.com/>



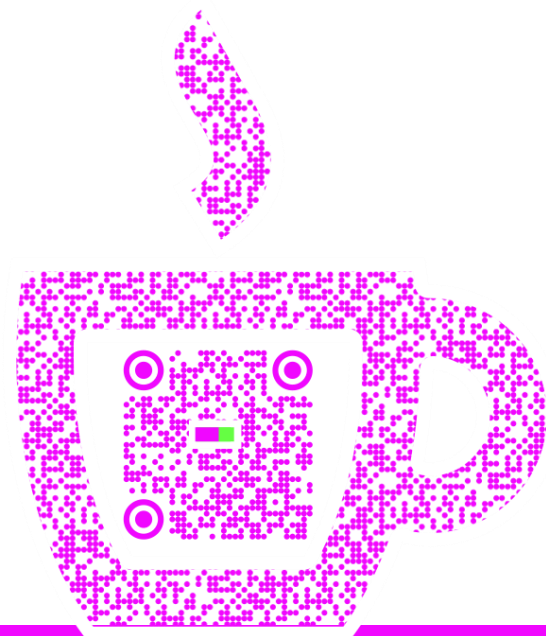
# What is the Most Important Skill in IT?



# What is the Most Important Skill in IT?

- We asked people at a technical conference.
- We did not really think about possible answers.
- By far the most common answer:  
communication, soft skill ...

<https://software-architektur.tv/2024/08/16/episode228.html>





 ebrwolff

 @ewolff@mastodon.social

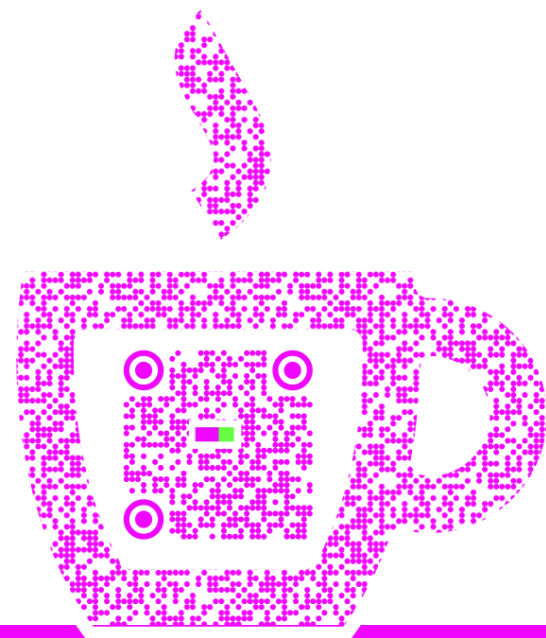


- <https://software-architektur.tv/2024/08/16/episode228.html>

# What is the Main Challenge in Software Architecture?

- Survey through social media

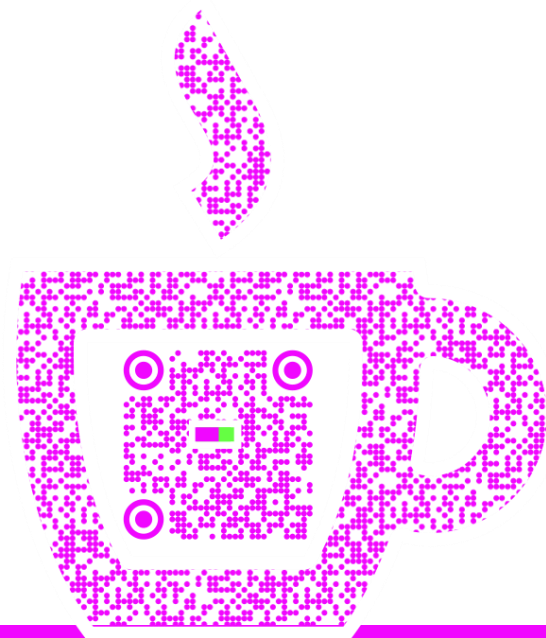
What is the biggest challenge in [#SoftwareArchitecture](#) in your opinion?



# Main Challenge in Software Architecture?

- Communication
- Organization and architecture
- Evolution of systems

<https://software-architektur.tv/2025/06/27/folge269.html>



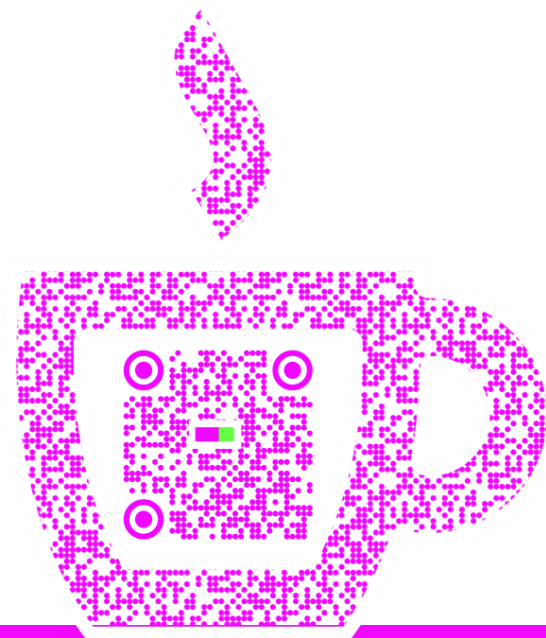


@ewolff@mastodon.social ebrwolff

<https://software-architektur.tv/2025/06/27/folge269.html>

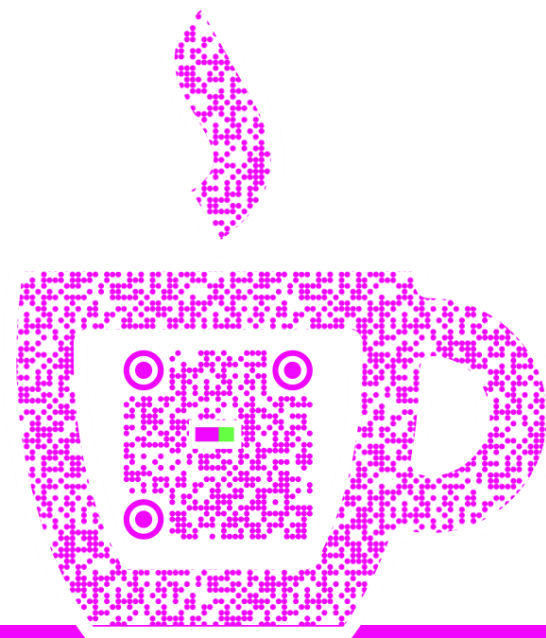
# What does that mean?

- Most important skill in IT:  
Communication
- Main challenge in software architecture:  
Soft skills
- How could LLMs / AI solve these challenges?
- LLMs might still be useful!



And you know  
it!

**Software architecture is a  
people business!**



# Architecture Review



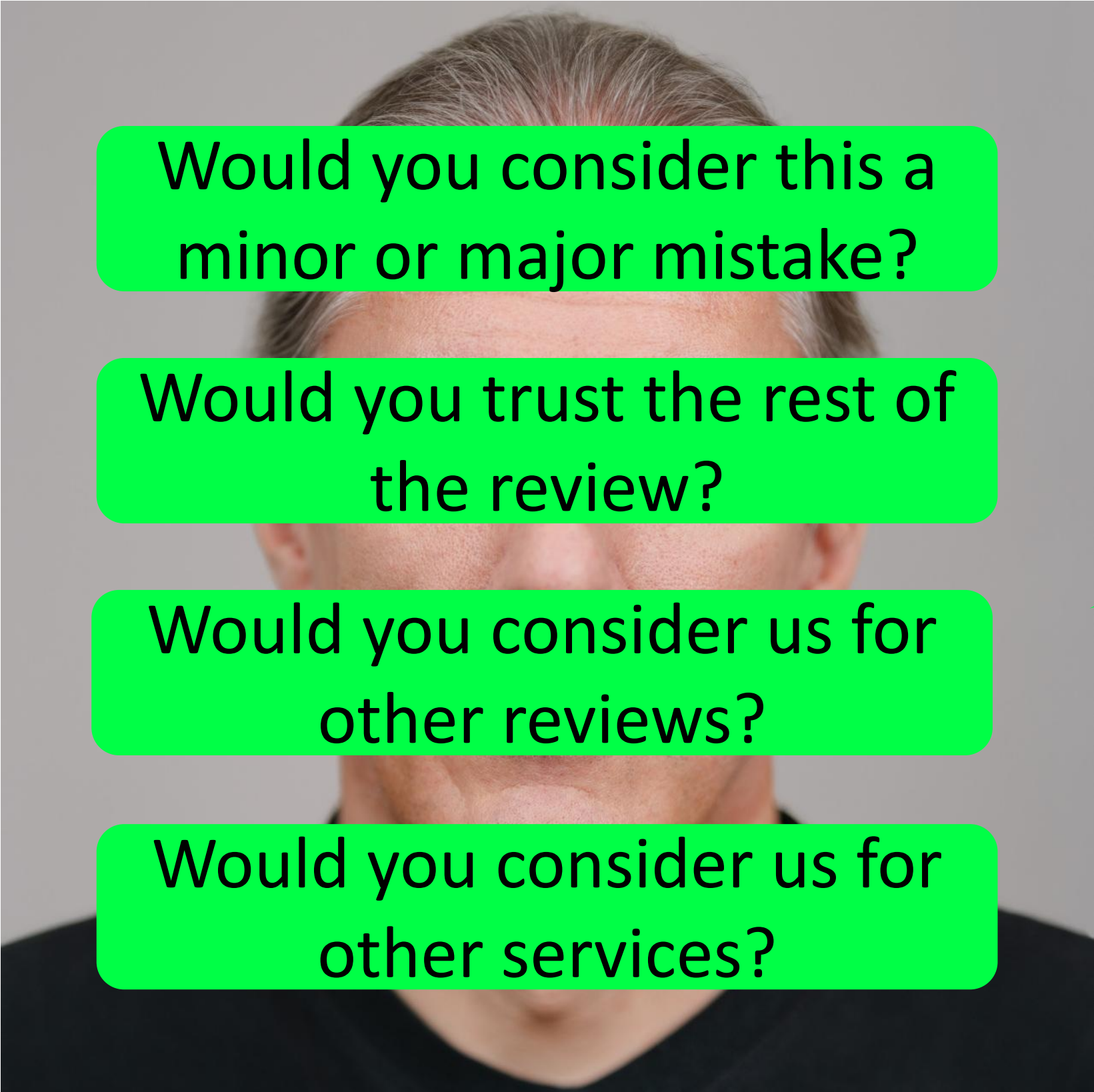
We reviewed your  
architecture

It uses message-oriented  
middleware!

i.e. Apache ActiveMQ and  
Apache Artemis

No, actually it doesn't use  
any message-oriented  
middleware.

# Architecture Review



Would you consider this a minor or major mistake?

Would you trust the rest of the review?

Would you consider us for other reviews?

Would you consider us for other services?

We reviewed your architecture

It uses message-oriented middleware!

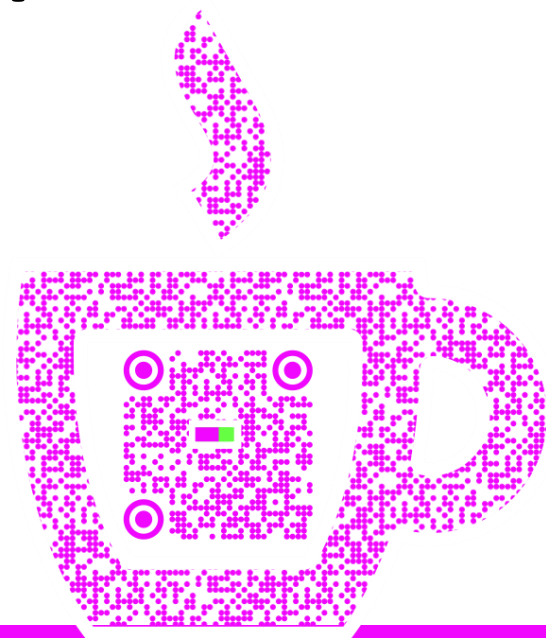
i.e. Apache ActiveMQ and Apache Artemis

No, actually it doesn't use any message-oriented middleware.

# Architecture Review

- Dirk Mahler (jQAssistant) mentioned exactly this as a result of an experiment with AI
- jQAssistant: Architecture management tool
- Claude with MCP access to jQAssistant data in Neo4J

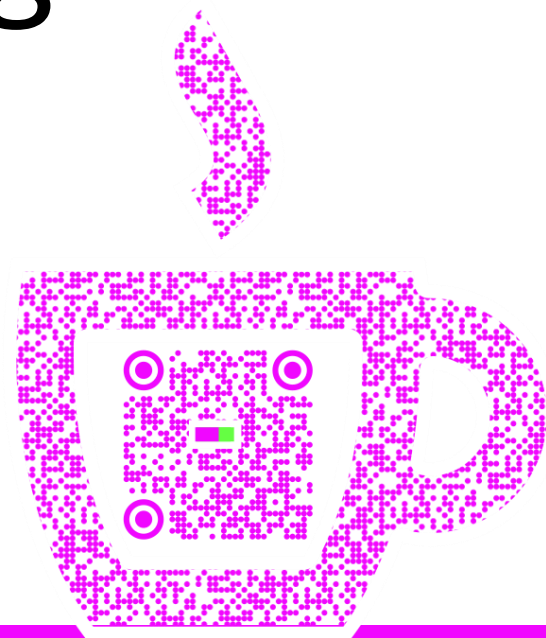
[https://www.linkedin.com/posts/dirk-mahler-837a4b5\\_ai-neo4j-claude-activity-7321596753223340033-xz4r/](https://www.linkedin.com/posts/dirk-mahler-837a4b5_ai-neo4j-claude-activity-7321596753223340033-xz4r/)



# Architecture Review: Reaction

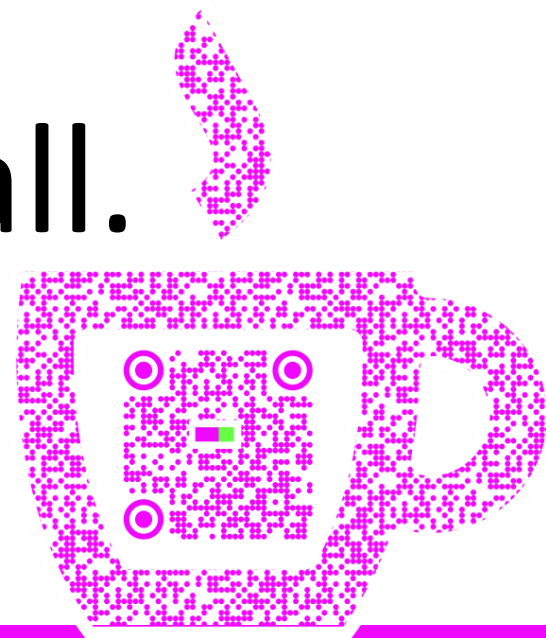
- There was a short discussion in LinkedIn.
- “It's a matter of context if speed or accuracy is more important...”
- “Would be interesting to see where the wrong information came from.”

[https://www.linkedin.com/posts/dirk-mahler-837a4b5\\_ai-neo4j-claude-activity-7321596753223340033-xz4r/](https://www.linkedin.com/posts/dirk-mahler-837a4b5_ai-neo4j-claude-activity-7321596753223340033-xz4r/)



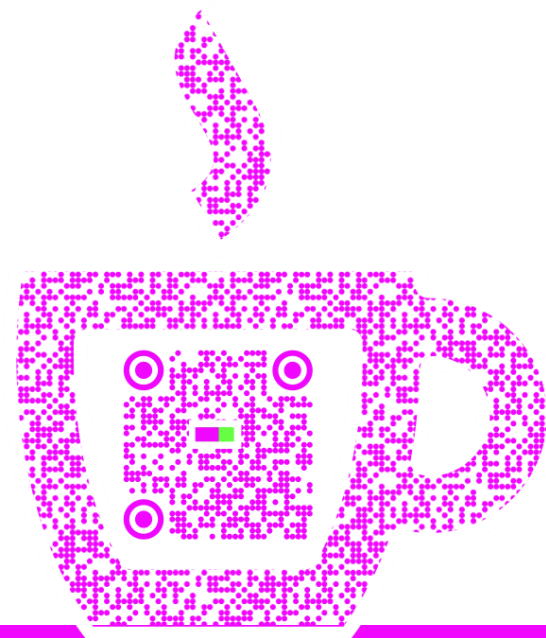
# Architecture Review: Questions

- This is just an experiment.
- It is not about usefulness of the MCP interface.
- But it made me think.
- IMHO: Obviously, this result is not helpful at all.

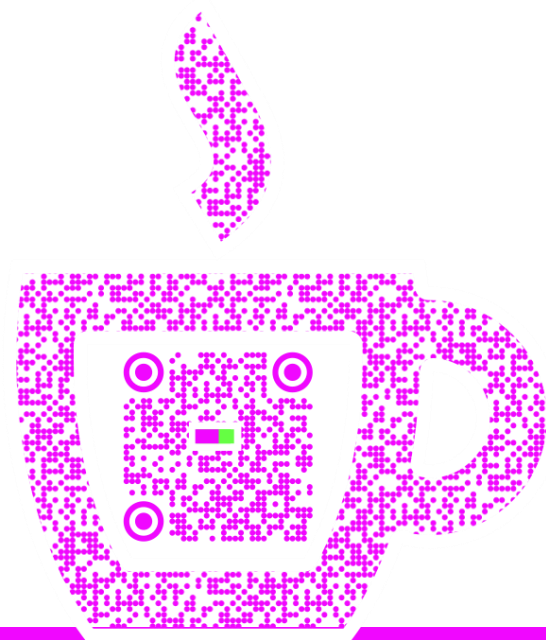


# Architecture Review: Questions

- Are people too easily convinced by AI?
- Can LLMs be reliable?



# Are people too easily convinced by AI?



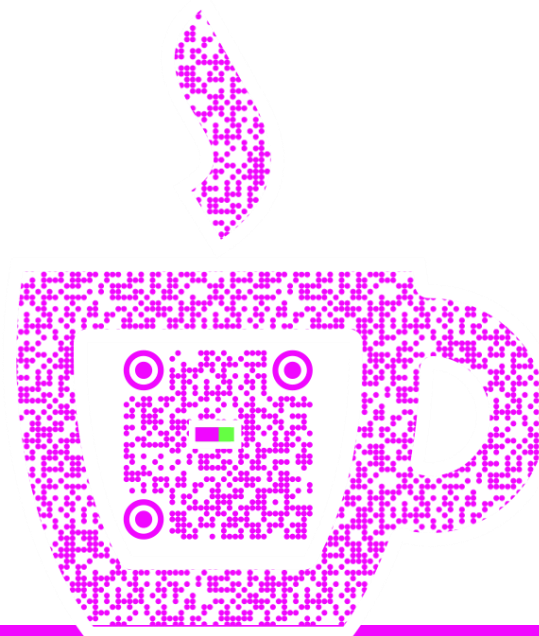
# Are People too Easily Convinced by AI?

- ELIZA by Joseph Weizenbaum 1966
- Mimics a psychotherapist
- I recall a listing in BASIC in the 1980s with ~100 lines.

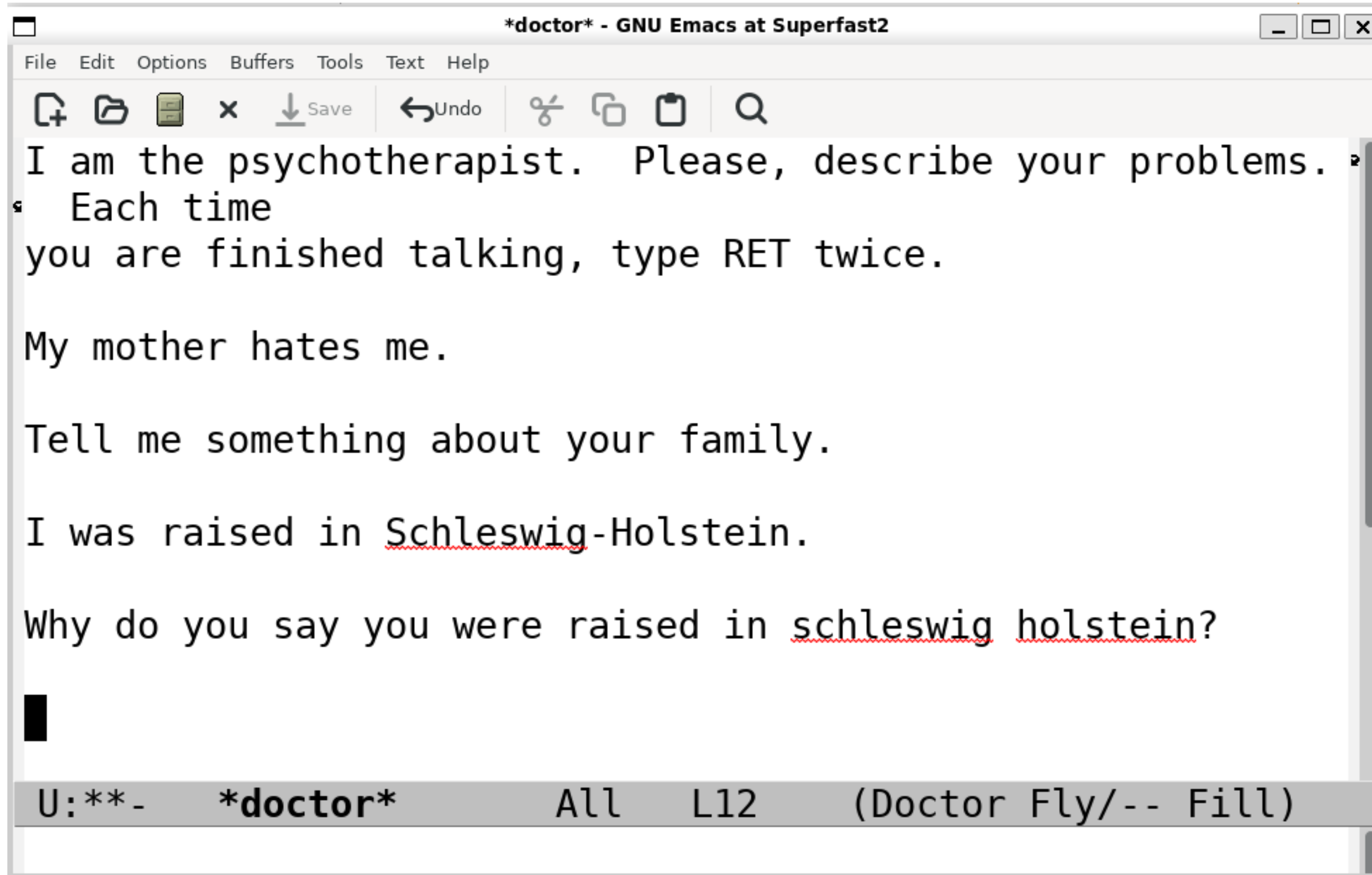


Picture: Andreas Scheper, CC <https://www.flickr.com/photos/glueckauf/238430262/in/photolist-4rbRRe-n521A-4rbRLr-aa2Ggc>

<https://de.wikipedia.org/wiki/ELIZA>



# ELIZA in Emacs



```
*doctor* - GNU Emacs at Superfast2
File Edit Options Buffers Tools Text Help
I am the psychotherapist. Please, describe your problems.
Each time
you are finished talking, type RET twice.

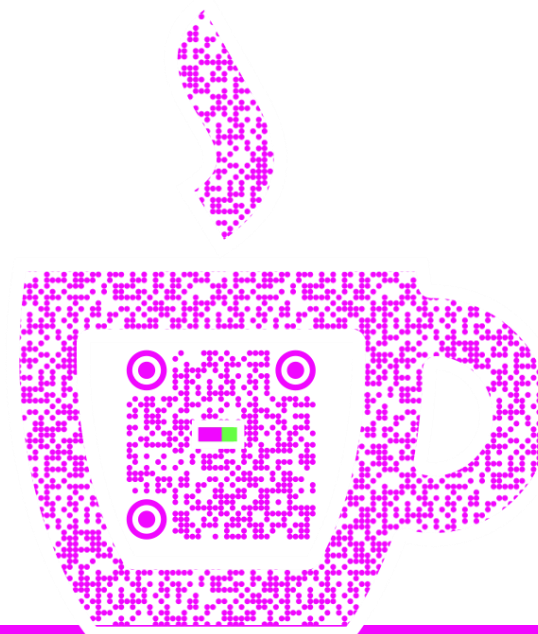
My mother hates me.

Tell me something about your family.

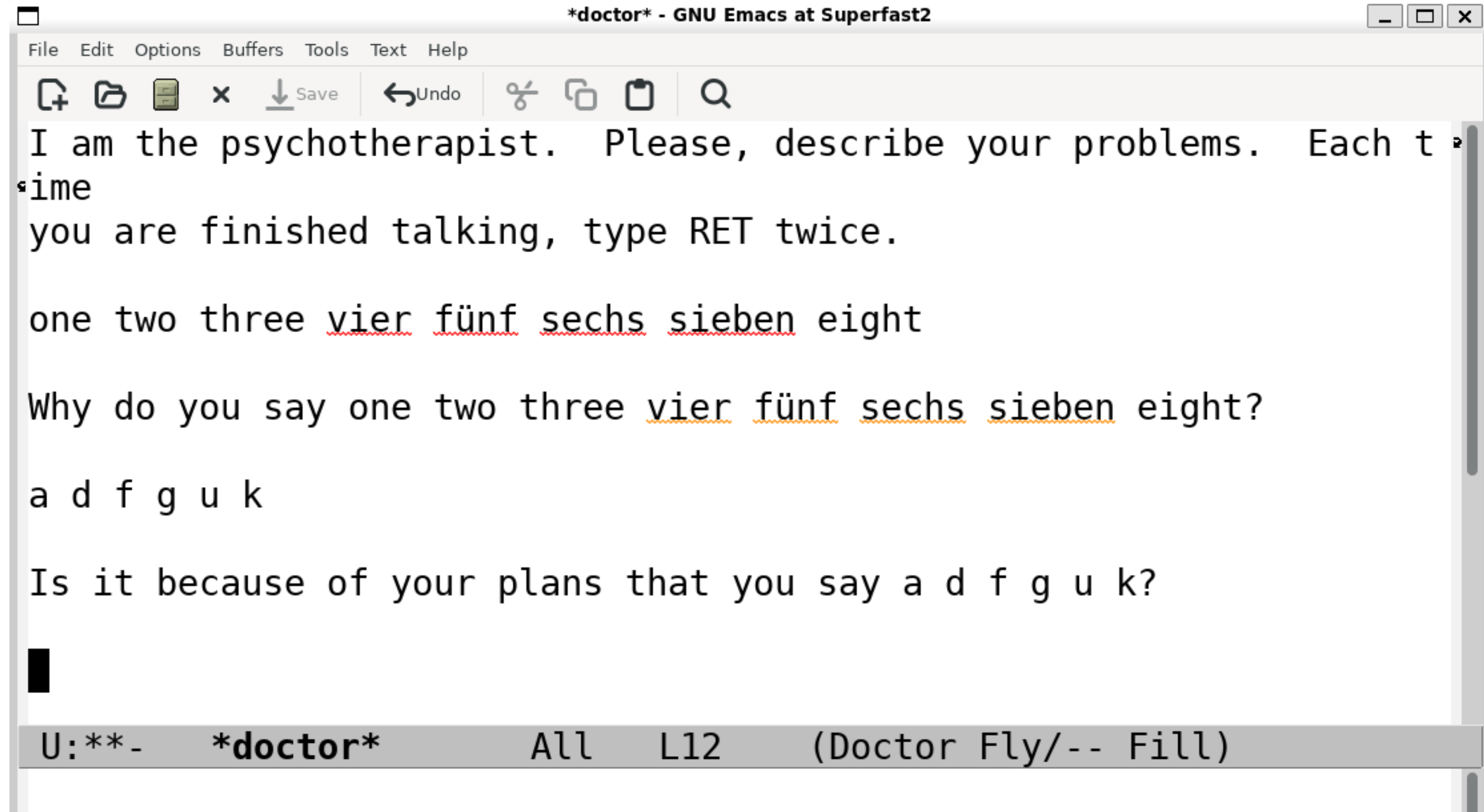
I was raised in Schleswig-Holstein.

Why do you say you were raised in schleswig holstein?

U:**_ *doctor* All L12 (Doctor Fly/- - Fill)
```

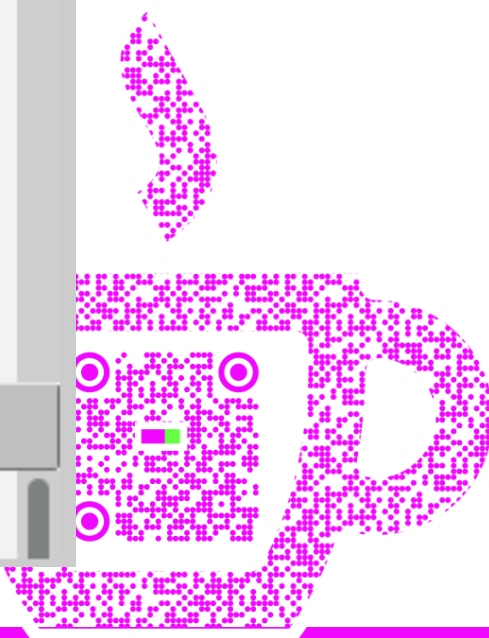


# ELIZA in Emacs



```
*doctor* - GNU Emacs at Superfast2
File Edit Options Buffers Tools Text Help
[Icons: Open, Save, Undo, Cut, Copy, Paste, Find]
I am the psychotherapist. Please, describe your problems. Each t
ime
you are finished talking, type RET twice.

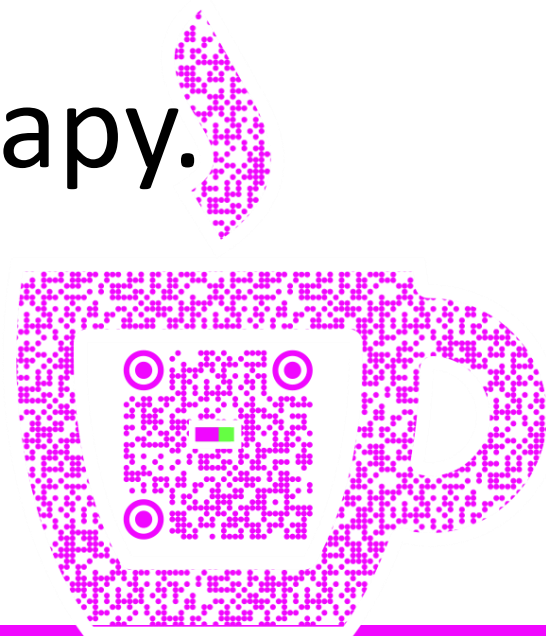
one two three vier fünf sechs sieben eight
Why do you say one two three vier fünf sechs sieben eight?
a d f g u k
Is it because of your plans that you say a d f g u k?
█
U:**_ *doctor* All L12 (Doctor Fly/-- Fill)
```



# ELIZA Results

- This system has no idea about anything.
- Trivially manipulates text.
- People still think there is understanding.
- Weizenbaum's office manager asked him not to read her conversations with ELIZA.
- ELIZA effect:  
People tend to assign human characteristics to chatbots.
- Psychotherapists considered using ELIZA to automate therapy.
- Experience made Weizenbaum an AI critic

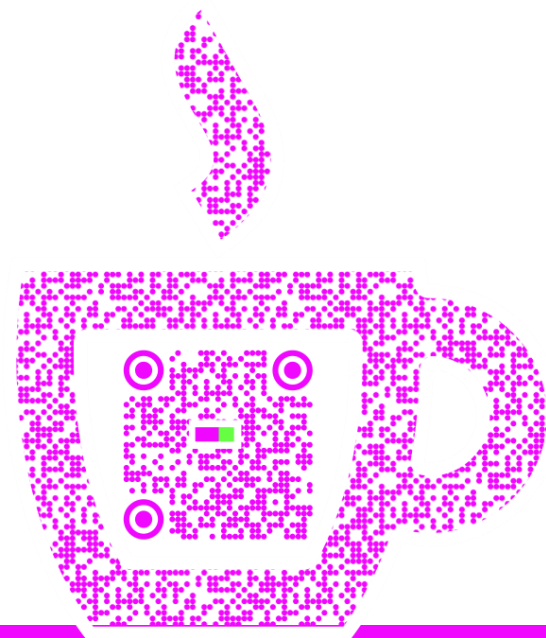
[https://en.wikipedia.org/wiki/ELIZA\\_effect](https://en.wikipedia.org/wiki/ELIZA_effect)  
<https://en.wikipedia.org/wiki/ELIZA>



# So Are People too Easily Convinced by AI?

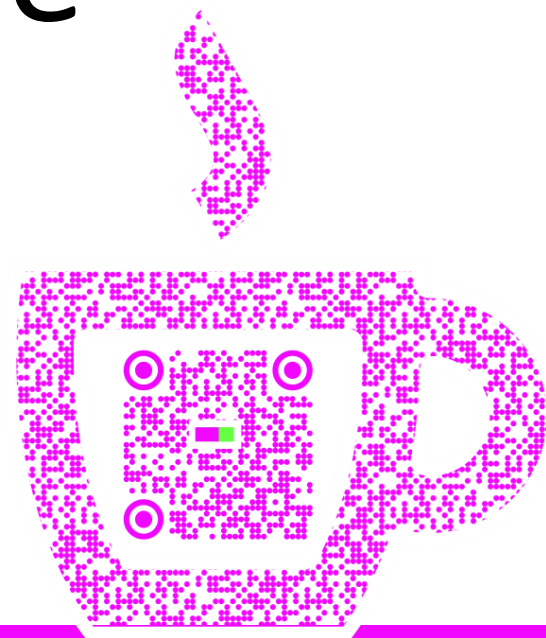
- ELIZA Effect
- Nature paper:  
GPT-4 is more persuasive in debates than humans.
- Can even cause psychosis:  
A Man Bought Meta's AI Glasses, and Ended Up Wandering the Desert Searching for Aliens to Abduct Him
- Yes, people are easily convinced by AI.
- We know that since the 1960s.

<https://futurism.com/artificial-intelligence/meta-ai-glasses-desert-aliens>  
<https://www.nature.com/articles/s41562-025-02194-6>



# How Is Persuasion Relevant?

- LLMs make mistakes (as we have seen).
- We must be sceptic about LLMs.
- Hard: They are persuasive.
- We will have discussions where LLMs are more persuasive than us.



# Architecture Consulting



I think we shouldn't do this.

But the LLM says  
otherwise.

...

# Architecture Consulting

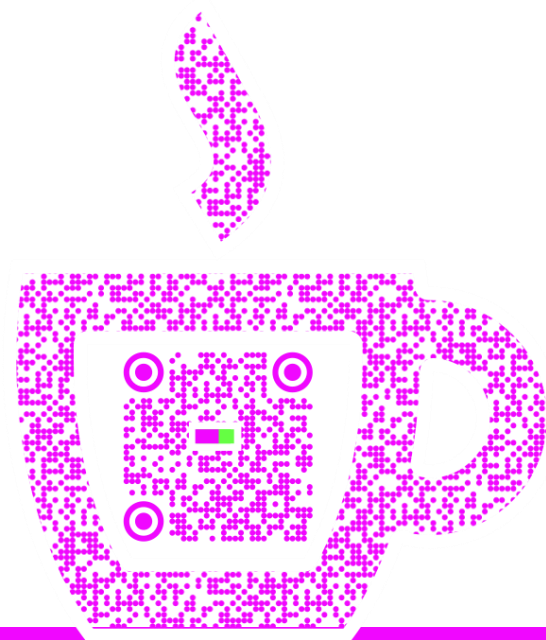


I think we shouldn't do this.

But some person at some conference said otherwise.

...

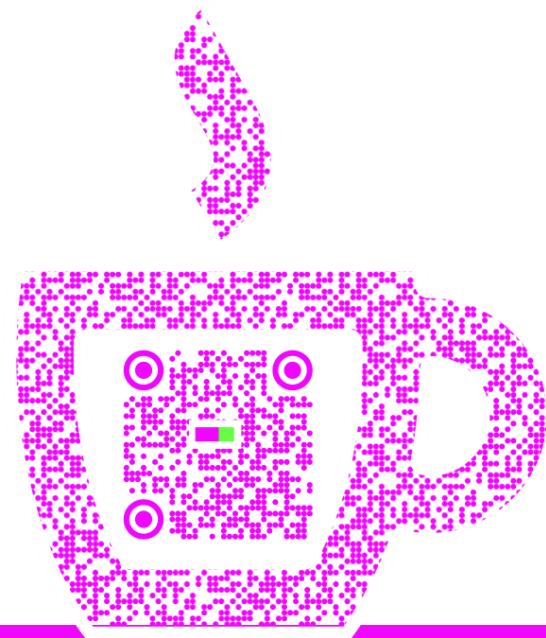
# Can LLMs be reliable?



# Can LLMs be reliable?

- LLMs produce “hallucinations”.
- Term is misleading.
- Hallucination: “perception in the absence of an external context stimulus”.
- LLM do not have “perceptions”.
- LLM generate fake information.

<https://en.wikipedia.org/wiki/Hallucination>



Sum up this  
YouTube  
video!

Fasse das Video zusammen - was hat der Reporter gefragt? <https://www.youtube.com/watch?v=5ONPI1XLk60>

Hier ist das Video:

(Falls der Player nicht lädt: <https://www.youtube.com/watch?v=5ONPI1XLk60> ↗)

### Kurz-Zusammenfassung

Der Reporter führt eine **Straßenumfrage**. Er spricht einen älteren Mann an und stellt ihm eine romantische Einstiegsfrage – doch der Mann reagiert unerwartet scharf und kritisiert sofort die Art der

### Was der Reporter gefragt hat

Die Frage war sinngemäß:

„Sie haben doch bestimmt eine Liebste / einen Liebsten zu Hause – oder?“

Das sollte eine lockere Einleitung für eine Umfrage (z. B. zum Valentinstag oder zu Beziehungen) sein.

### Reaktion des Mannes

Der ältere Mann reagiert darauf sehr belehrend und sagt im Kern:

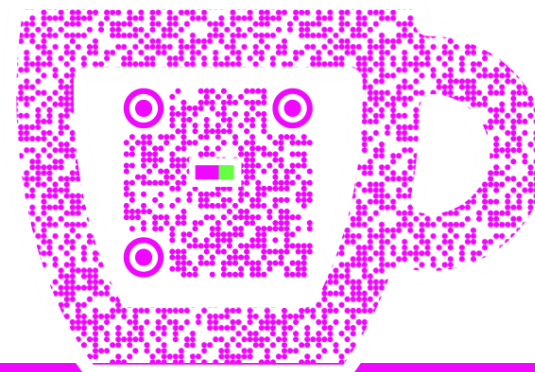
„Erweist diese Unterstellung zuviel

A reporter is  
asking people  
on the street  
about their  
loved one.

ChatGPT  
provides the  
correct  
YouTube link

Sum up a video

<https://chatgpt.com/share/69b1c3c9-95e8-800f-b433-bb6e4b3ca66e>





Who has experienced similar things?

The video is about Trump.

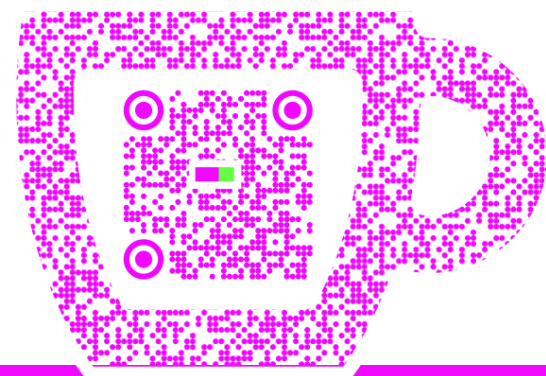
...and you can get ChatGPT to "sum it up".

Why would you use this for software architecture?

Sum up is still quite questionable.

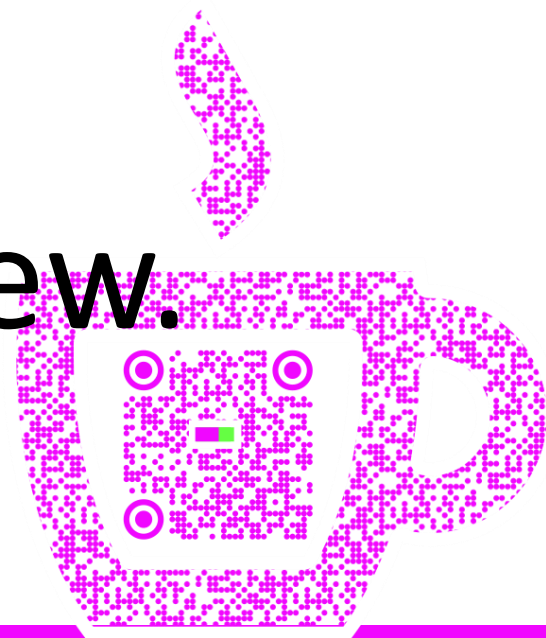
# The video

<https://chatgpt.com/share/69b1c3c9-95e8-800f-b433-bb6e4b3ca66e>



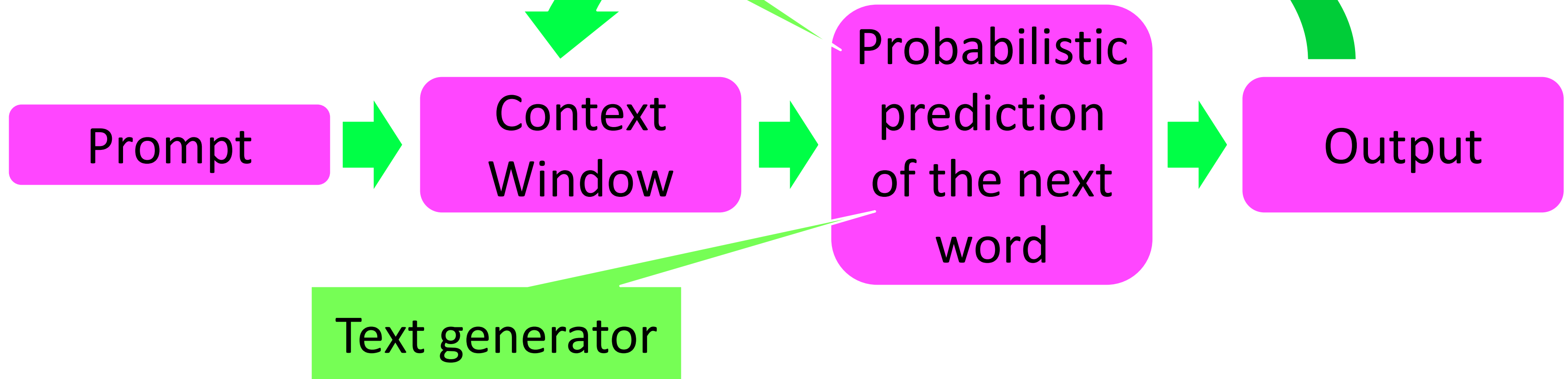
# LLMs Are For Conversation

- LLMs are built for conversations.
- Nobody checks everything they say in a conversation.
- I.e. fake information keep a conversation going.
- Fake information is a feature not a bug.
- I do check information that I provide in a review.



# LLMs

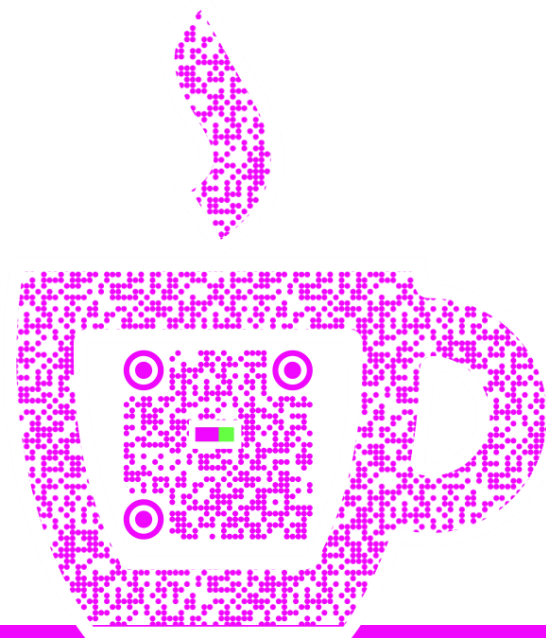
No explicit  
model of the  
world, truth...



# LLMs Are Optimized For Tests

- LLMs evaluation tests punish “I don’t know”.
- So LLMs guess some answer.
- Like a student in an exam who just gives a random answer.
- Might be fixable with different rewards in tests.

<https://openai.com/index/why-language-models-hallucinate/>



# Surely This is Just Training Data?

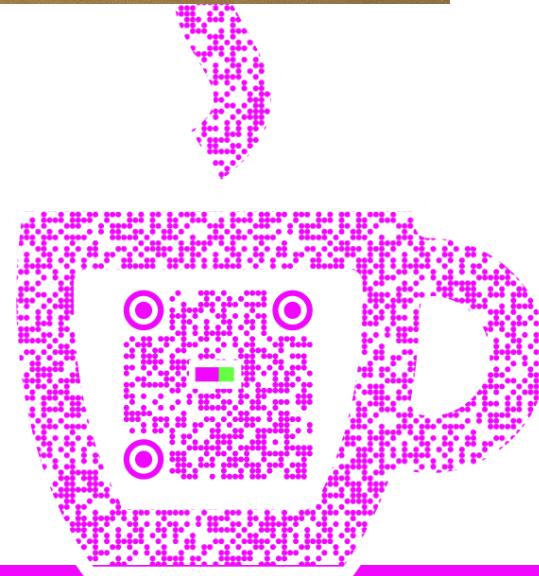
- Bad training data does not explain...  
...the video sum up.  
...Dirk's jQAssistant experiment.  
Data is in the prompt  
Directly or via MCP.

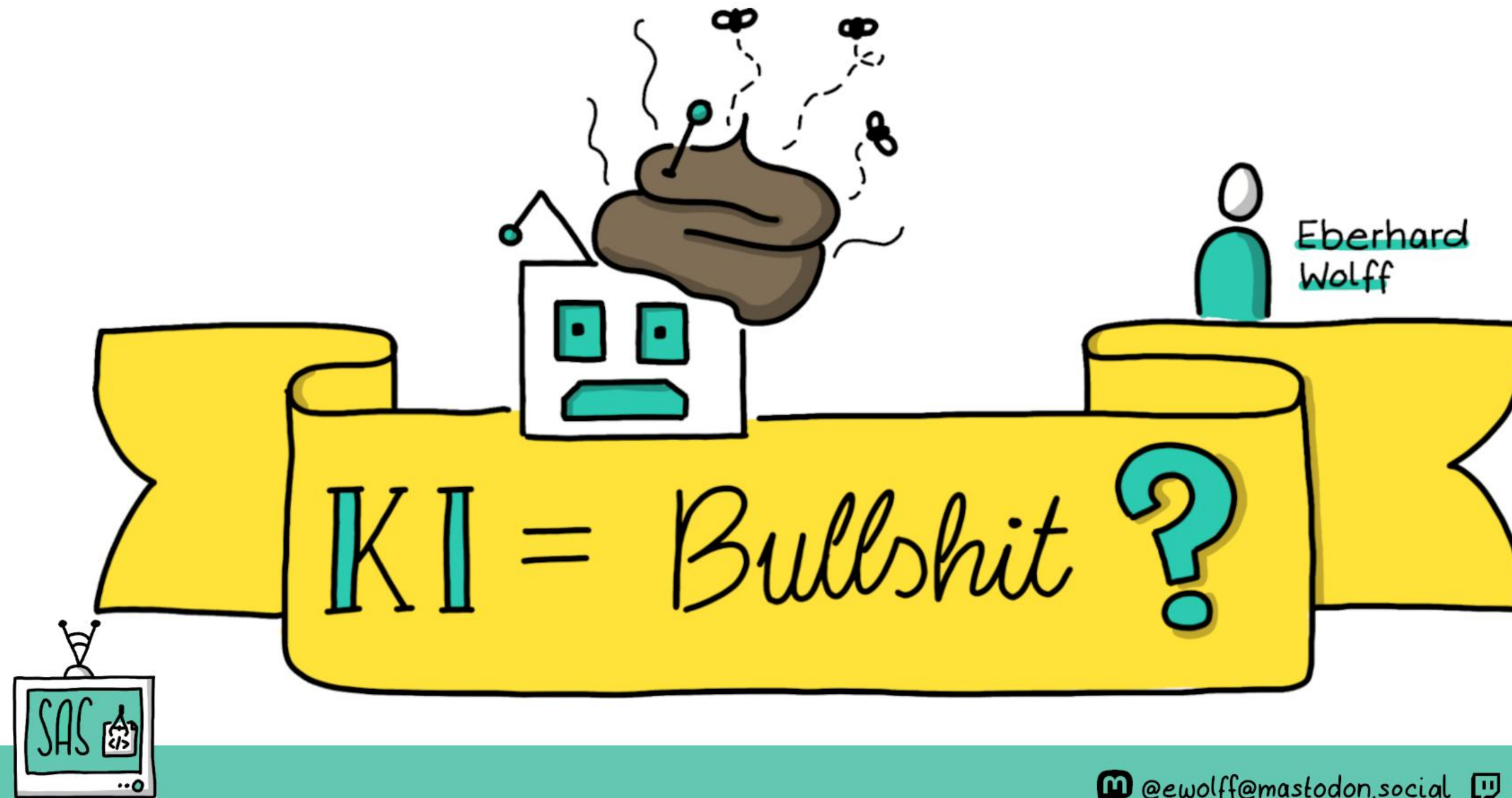


- These are “intrinsic hallucinations”.  
generated output contradicts source content
- Training data won't fix this problem.

<https://arxiv.org/html/2202.03629v7>

<https://chatgpt.com/share/68ebc488-0b2c-800f-8455-193c32feccf3>

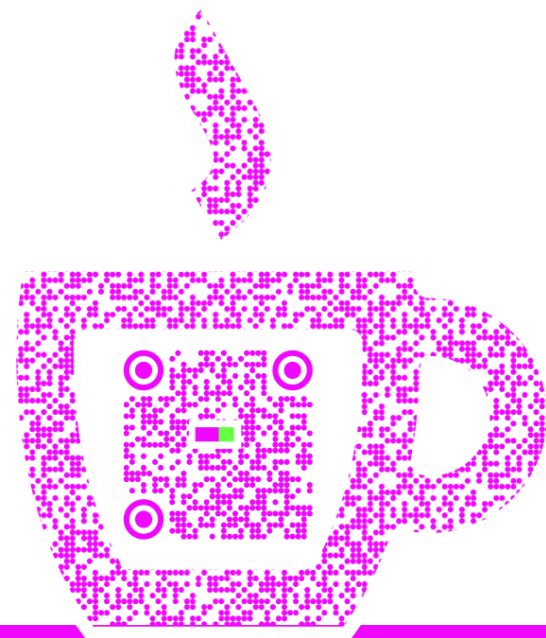




<https://software-architektur.tv/2025/04/11/episode260.html>

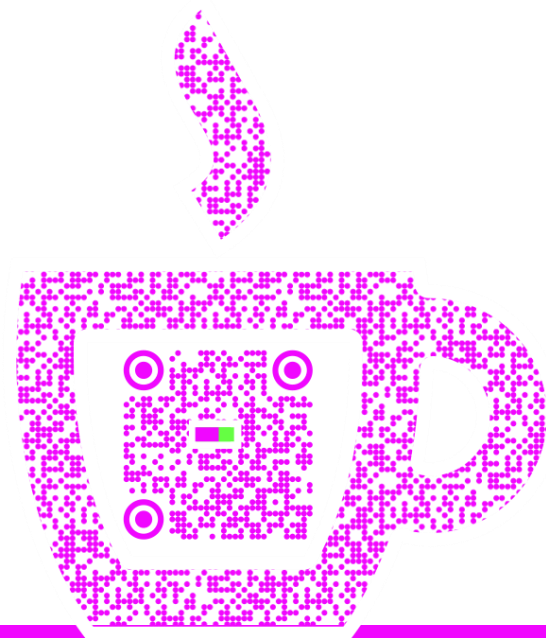
# Text Generator in Action

- Generates a text to delete the production database.
- Then generates a text to explain how this was wrong.
- Explanation: No model of “truth”.



# Are LLMs Optimized For Software Architecture?

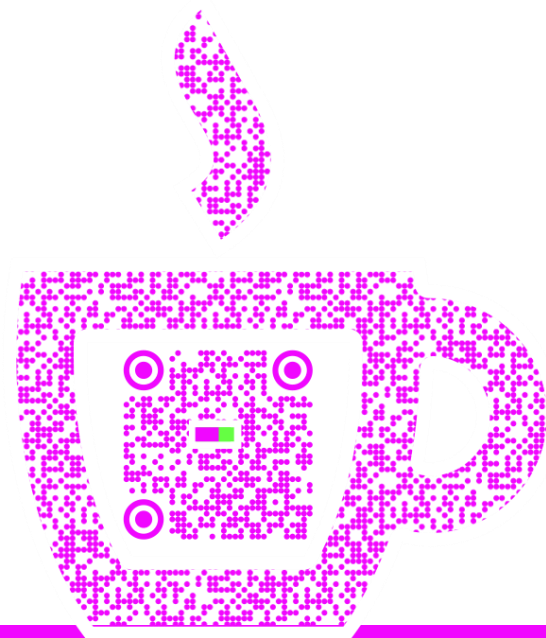
- How good is an architect who never says “I don’t know”?
- How good is an architect with no concept of truth or the world?



**So How Can You Use AI for  
Software Architecture?**

# iSAQB Advanced Level Exam

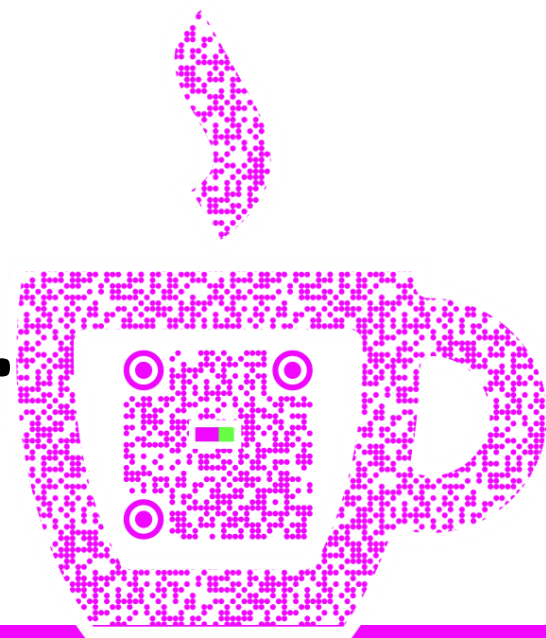
- iSAQB = International Software Architecture Qualification Board
- Advanced Level Exam: Build an architecture!



# Would ChatGPT Pass the iSAQB Advanced Level Exam?

- Probably not
- But: Humans don't really do a lot better often.
- So an LLM might actually be good enough.
- LLMs can generate a persuasive text.
- Even if they don't take the requirements into account

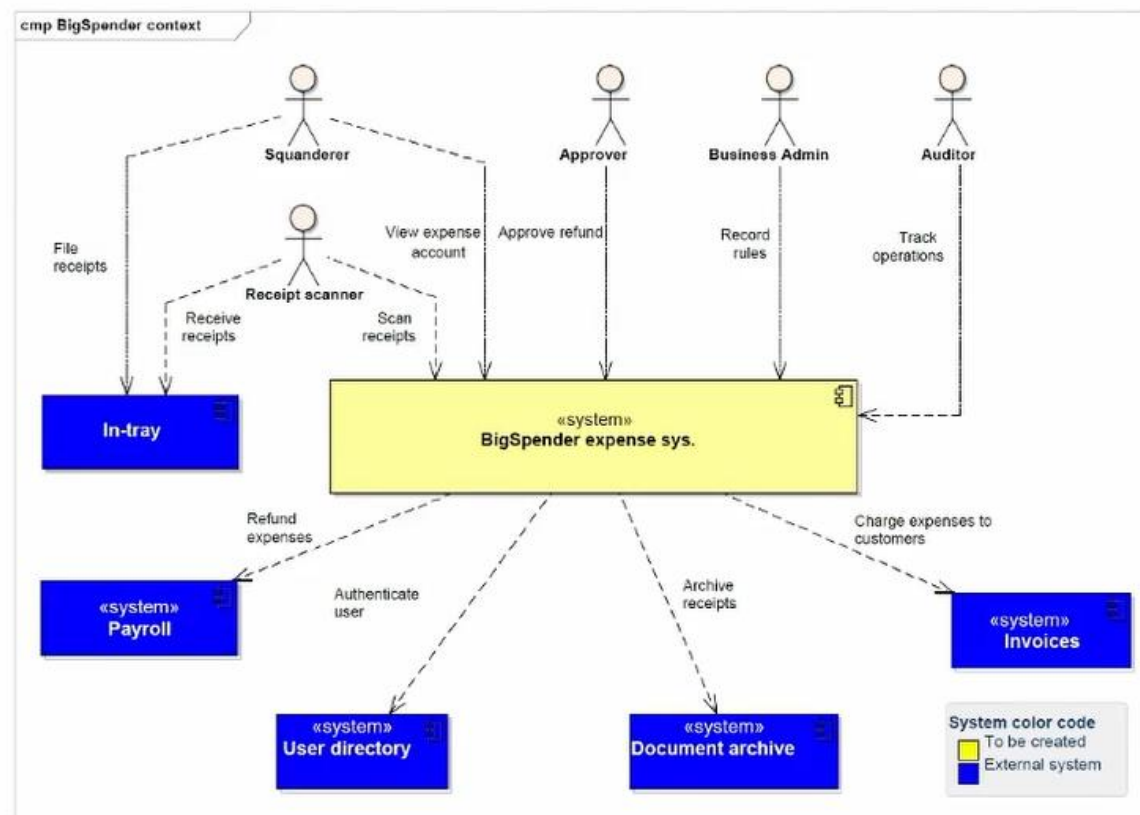
...because they went out of the context window.



# Images in PDFs are hard to read...



You



The document also contains two diagrams. here is the business context as image. Try to read and understand it.



32:09/1:06:21 @ewolff

↓ 0 B ↑ 0 B 1 peer

## Is this actually doing software architecture?

# What Were We Doing?

- Generate documentation
- Documentation is not architecture!

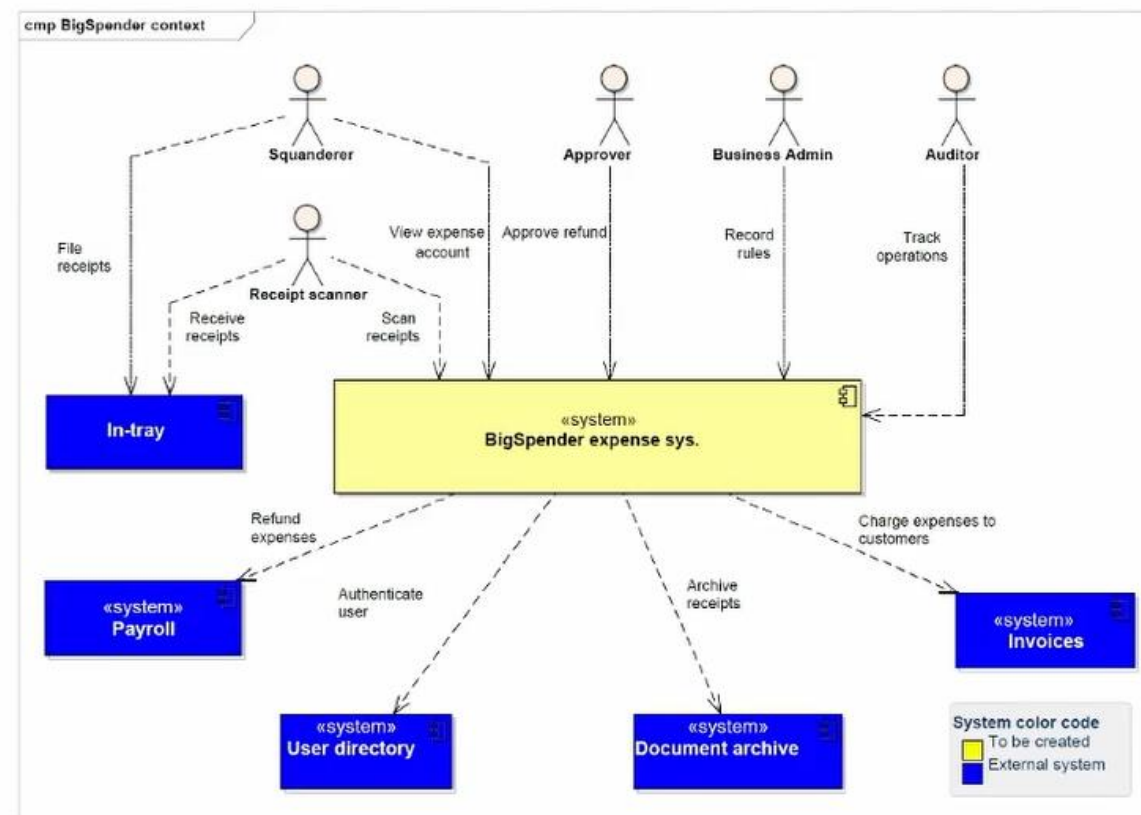
# What Is Architecture?

- Architecture is what is implemented.
- Just writing a document does not help.
- You must communicate the architecture to people.
- You should get input from technical people.
- You must understand requirements / business cases.
- You must communicate with stakeholders.
- Communication is the main challenges.

# Images in PDFs are hard to read...



You



The document also contains two diagrams. here is the business context as image. Try to read and understand it.



Ralf D. Müller



Eberhard Wolff



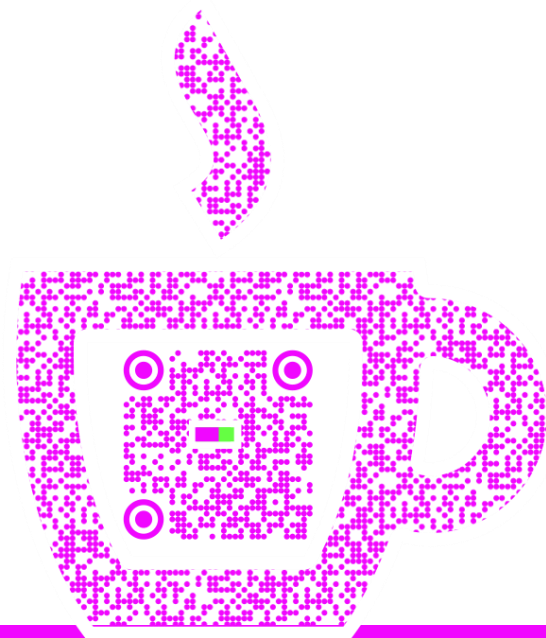
32:09/1:06:21 @ewolff

↓ 0 B ↑ 0 B 1 peer

## Is documentation the easy part?

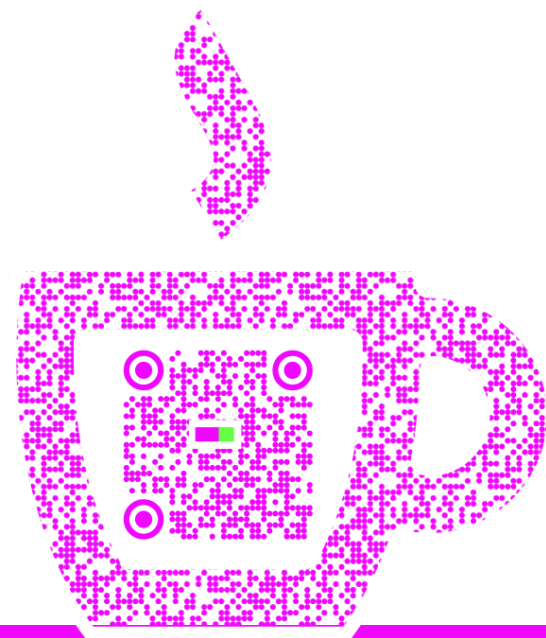
# Use Case: Search for information

- Not always correct but answers specific questions.
- E.g. Generate a text about REST vs gRPC
- Instead of Stackoverflow, web search...



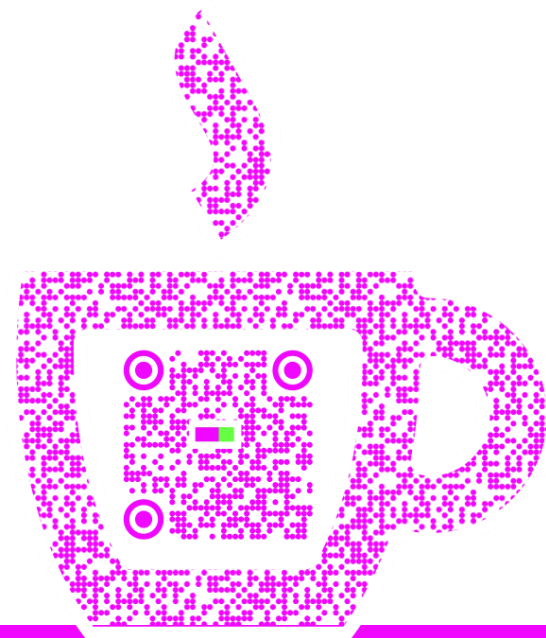
# Use Case: Dialog for Architecture Documentation

- Generating architecture documents in a dialog
- I.e. humans check the results!
- Humans review instead of creating themselves.
- Reviewing: easier or harder than creating?



# Anti Pattern: Architecture Documentation

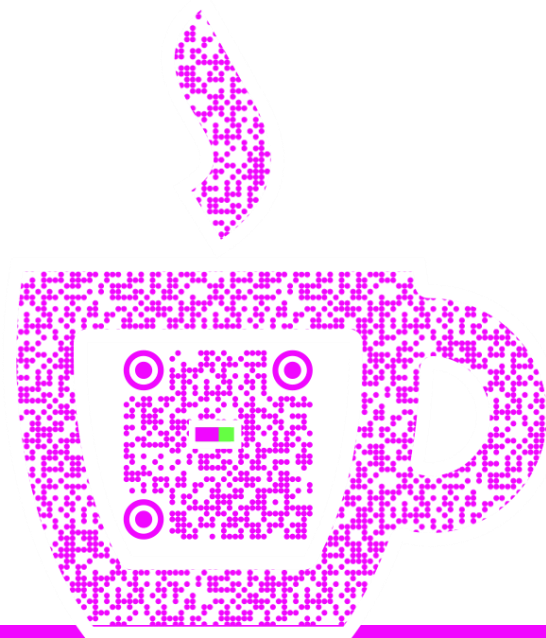
- LLM generated extensive architecture documentation.
- Result: Yet another documentation
- Result: Architects don't work with this documentation.
- I.e. architecture is done somehow differently
- Result: Architects less interested in AI
- If you neglect the human side, AI won't help.

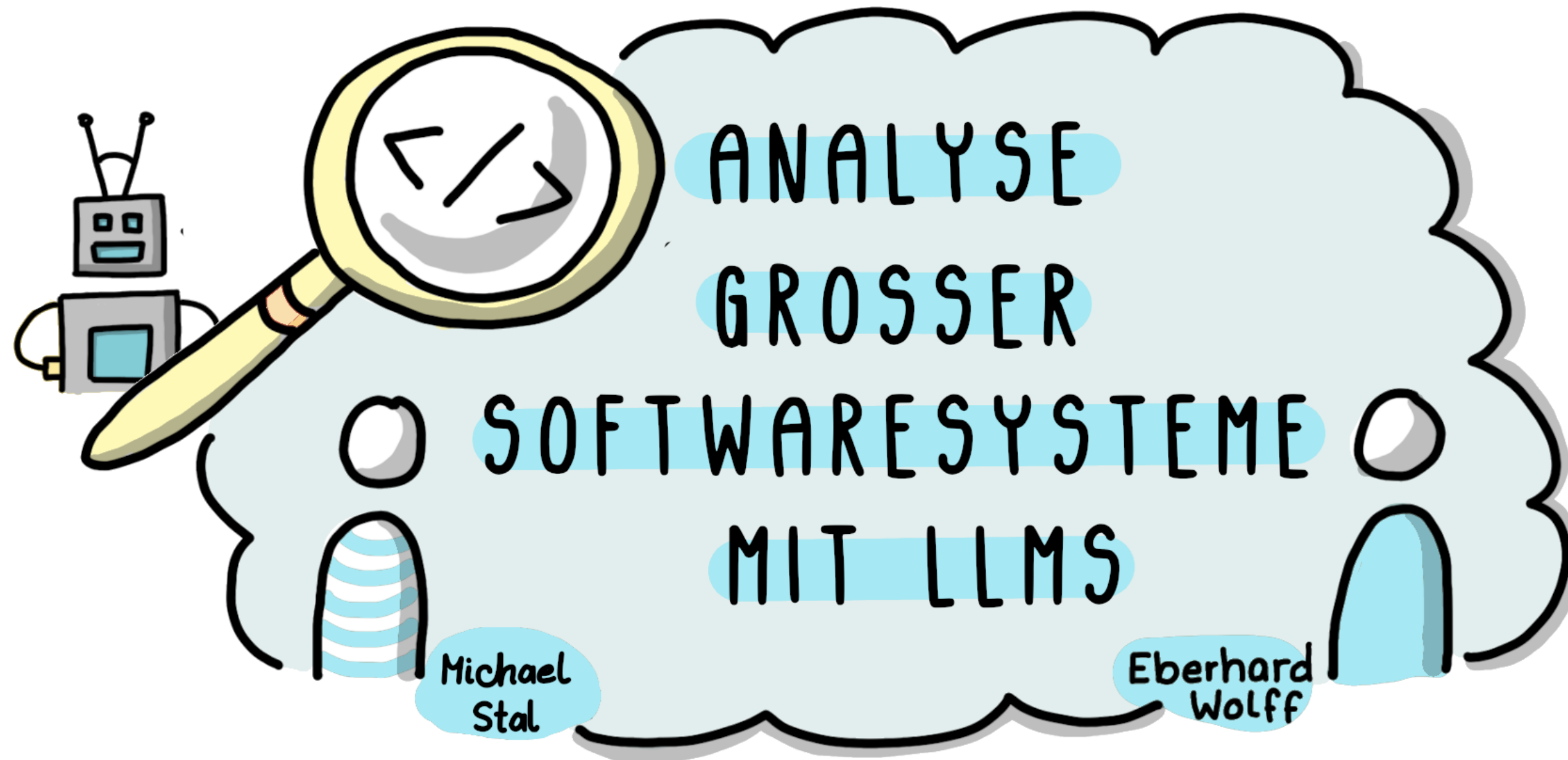


# Use Case: Architecture Review

- Prof. Michael Stal @ Siemens
- Use an LLM + RAG + Agents to review a system
- In a dialog
- Based on code, requirements, Architecture Decision Records ...
- Need to double-check the results!

<https://software-architektur.tv/2026/04/02/episode308.html>





ebrwolff



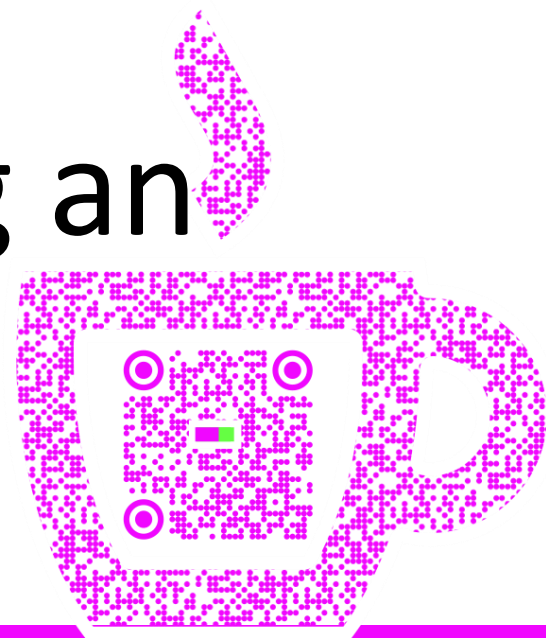
@ewolff@mastodon.social

<https://software-architektur.tv/2026/04/02/episode308.html>

# Let's Ask ChatGPT

- ChatGPT generated a text about LLMs and software architecture.
- LLM Benefits:
  - Speed up analysis and design
  - Better access to best practices
  - Communication and moderation (i.e. prepare workshops)
- You could improve other aspects instead of using an LLM.

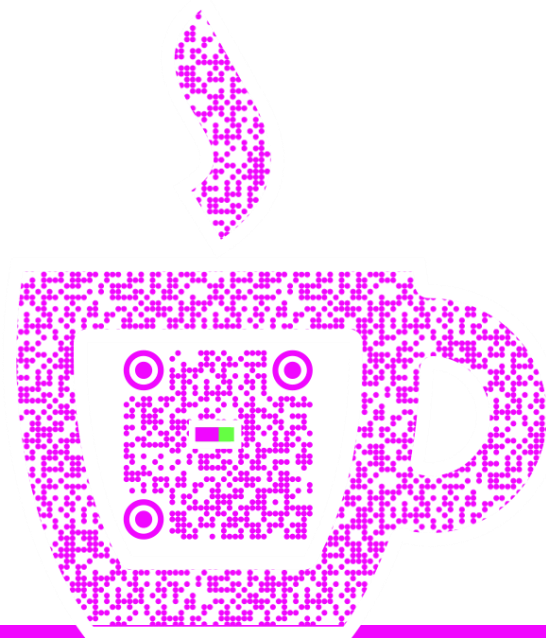
<https://chatgpt.com/share/68238ff5-4bac-800f-aea7-5d6aaee3b8bb>



# Let's Ask ChatGPT

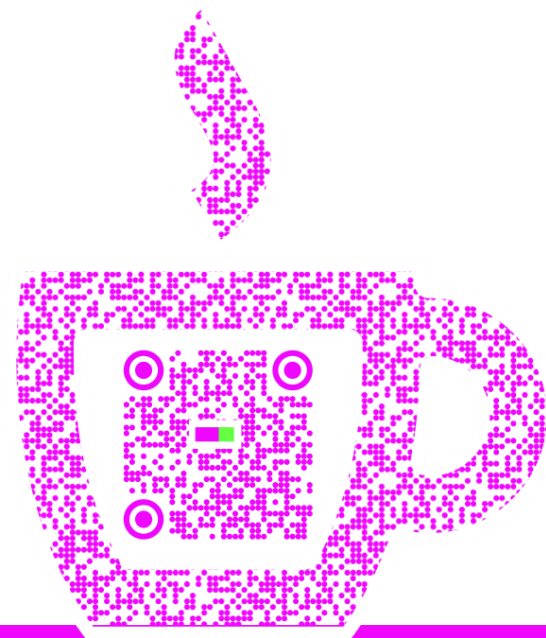
Without architectural skills, LLMs will only accelerate your missteps.

<https://chatgpt.com/share/68238ff5-4bac-800f-aea7-5d6aaee3b8bb>

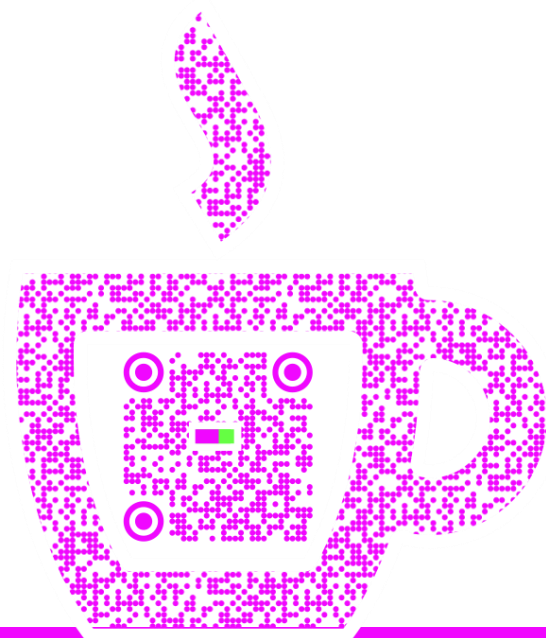


# So How Can You Use AI for Software Architecture?

- Another tool
- No full automation.



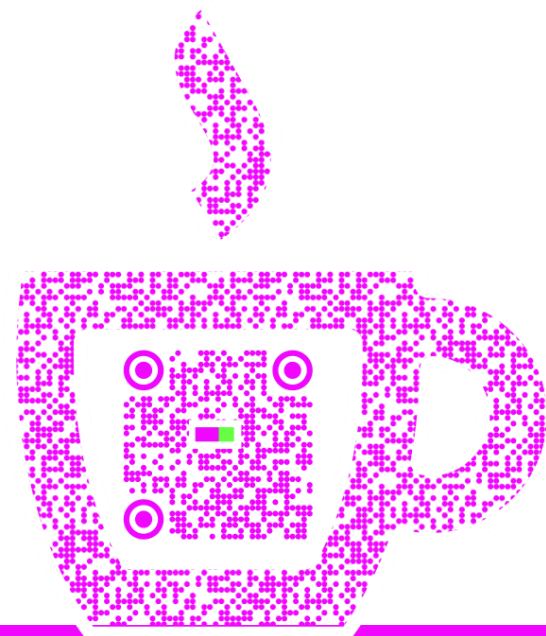
# Prediction



# Prediction: Productivity

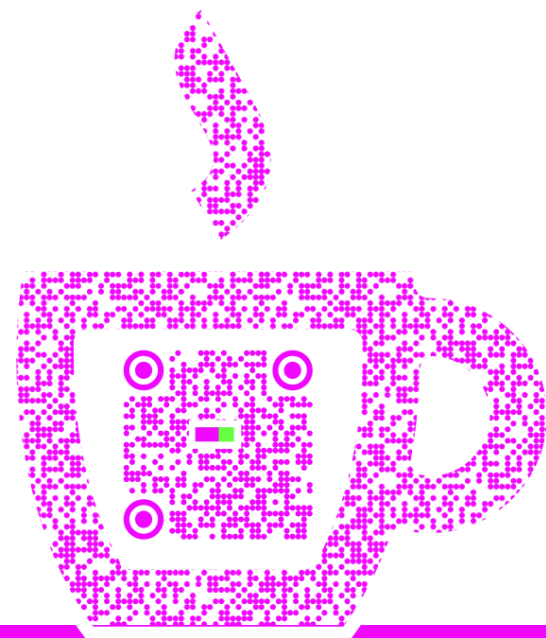
- Science currently: <1.5x
- Anecdotal evidence: somewhat higher
- Let's be optimistic
- Let's assume LLMs will eventually provide 10x or 100x.
- We had such innovations before.
- Programming languages, operating systems, cloud ...

<https://software-architektur.tv/2026/05/27/episode313.html>  
<https://software-architektur.tv/2026/05/29/episode314.html>



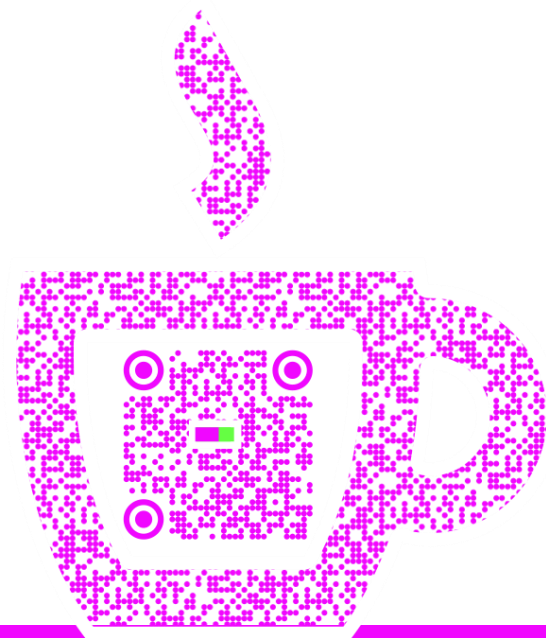
# Prediction: Communication

- The fundamental problem remains: Communication
- As it has been from pretty much the beginning (1950s)



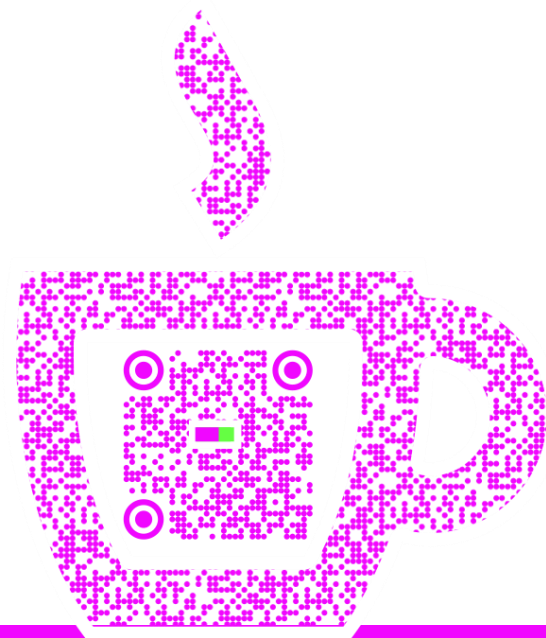
# Prediction: Work

- Despite productivity improvements, more and more people work on software.
- Why?



# Prediction: Work

- Fuel-efficient car makes driving cheaper.
- People drive more
- Fuel consumption grows.
- Rebound effect: More efficiency -> more demand



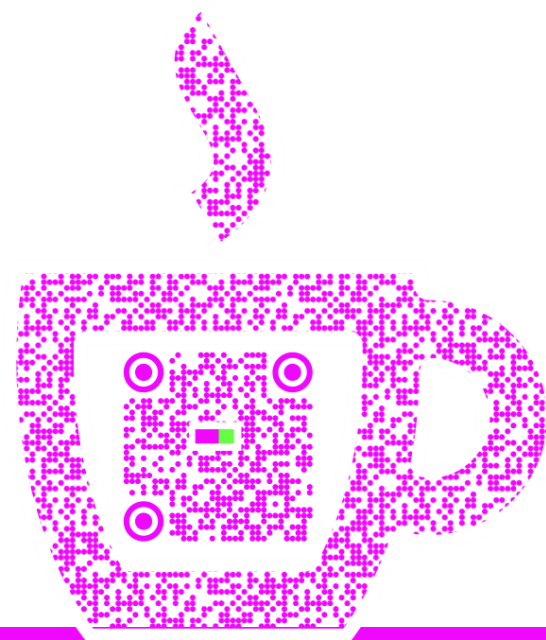


Watch, Stopwatch, Calendar

Health, fitness, GPS, maps ...

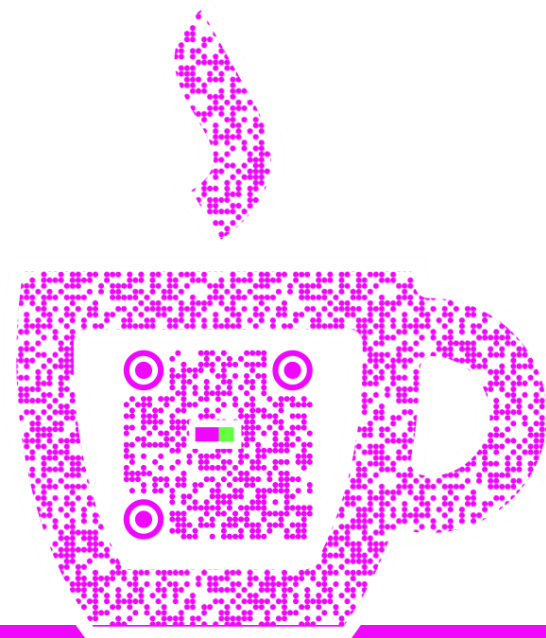
# Prediction: Work

- What if we just build more software and more complex software?
- As we have done since the 1950s.



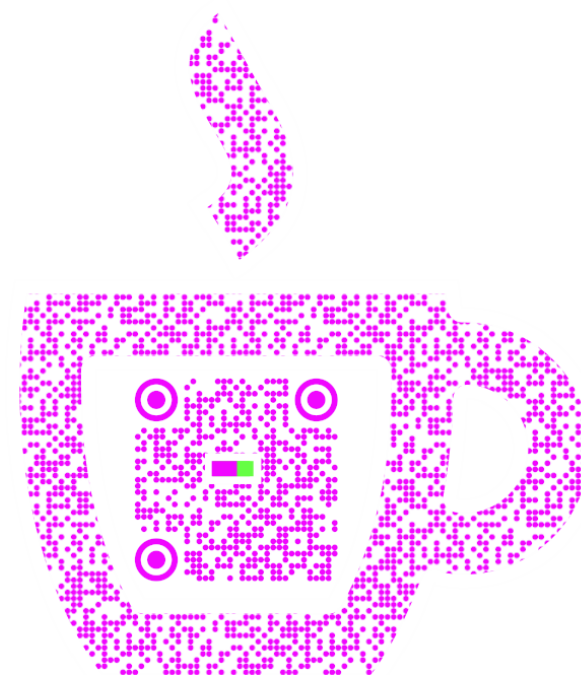
# Ethics

- LLMs consume absurd amounts of energy.
- LLM trainers have bad working conditions.
- LLMs demand lots of investment  
i.e. they further monopolies.
- These monopolies are already a threat to our society.
- LLMs might make people loose skills?





# What Now?

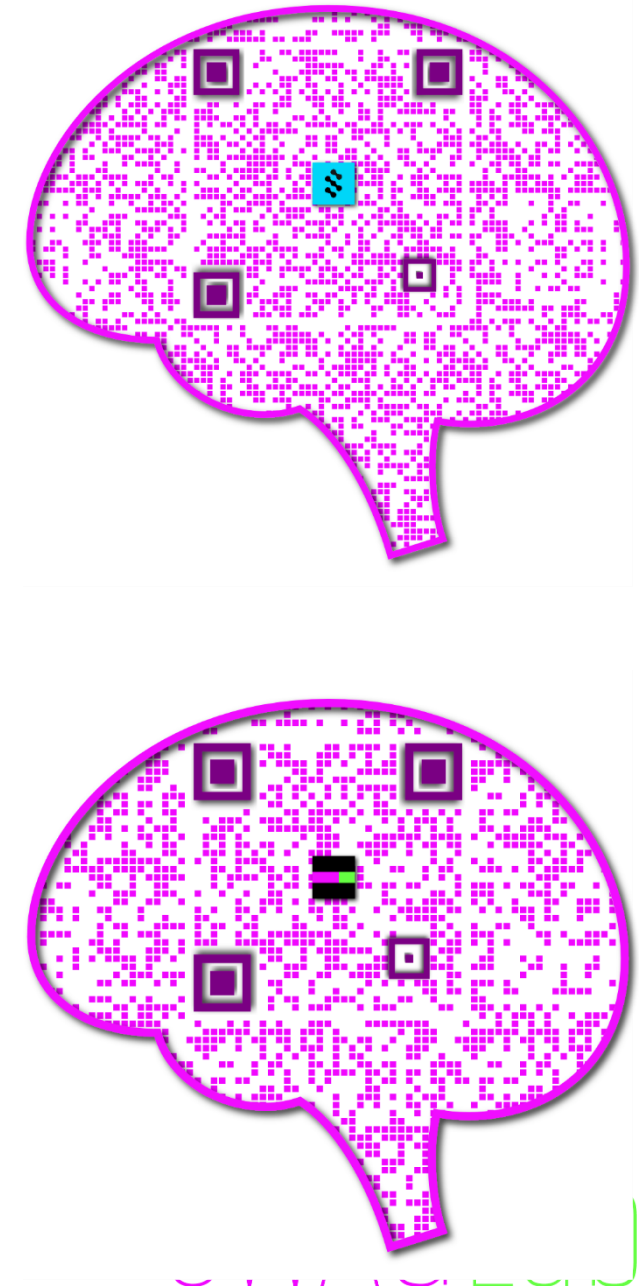


# Become an Expert for the Domain and Company!

- What is specific about your company?
- Who should you talk to for a specific development task?
- How should you talk to them?

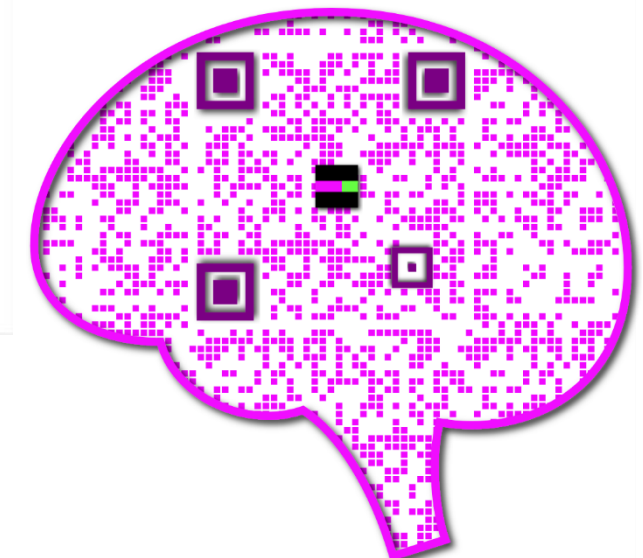
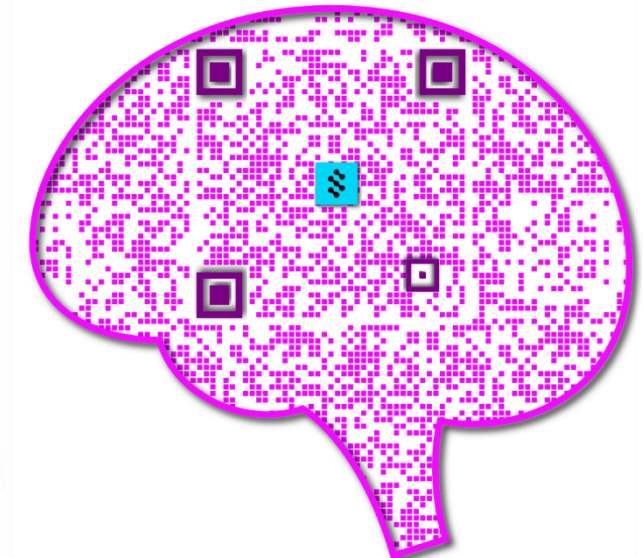
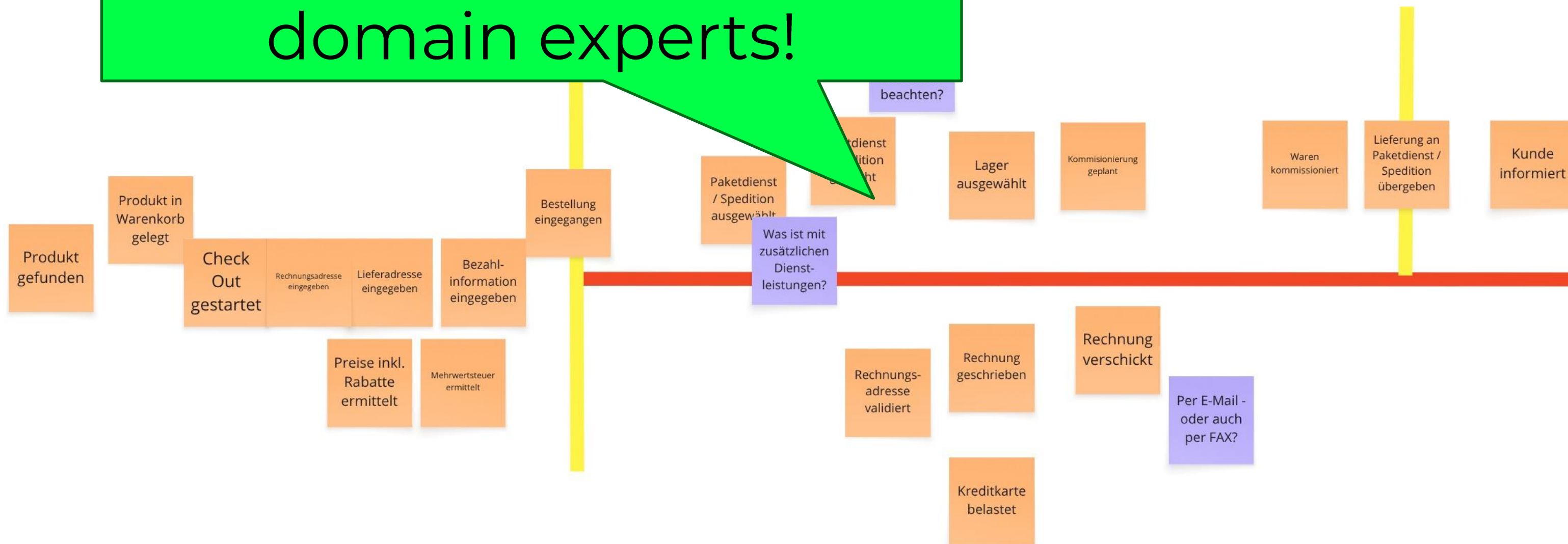
# Improve Collaboration!

- Collaborative Modelling
- Post Its
- Easy to understand
- Fewer barriers
- Work in parallel
- Easier for introverts to participate



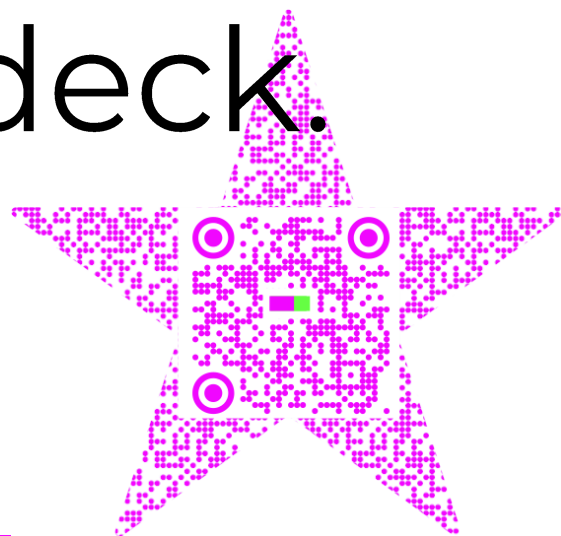
# Event Storming

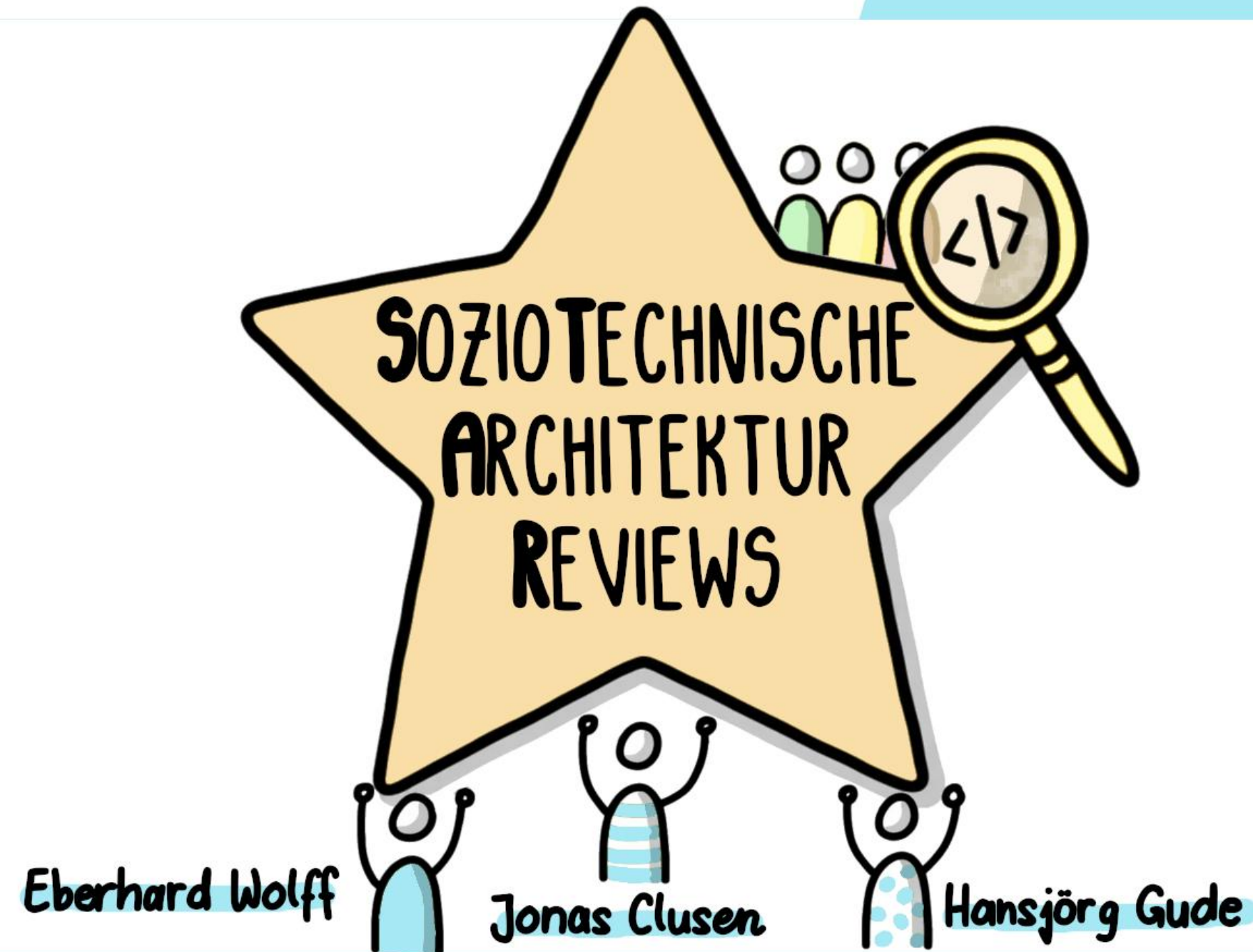
Explore domain with  
technical people +  
domain experts!



# Socio-technical Architecture Reviews

- Architecture reviews often focus on the software.
- Software is a product of a social system i.e. a team.
- Let's focus on the team!
- Result: Working teams instead of a slide deck.





ebrwolff

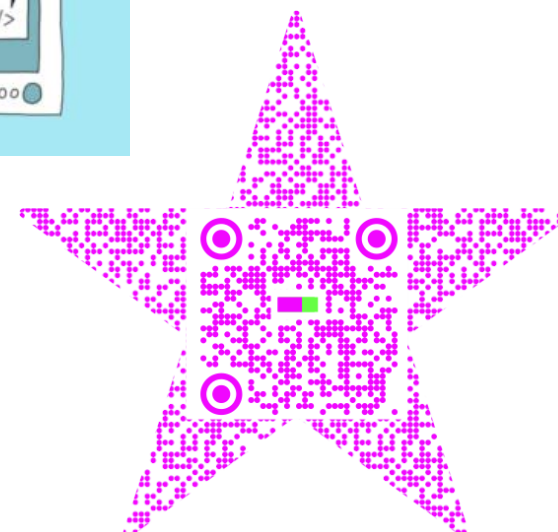


@ewolff@mastodon.social



<https://software-architektur.tv/2026/02/06/folge301.html>

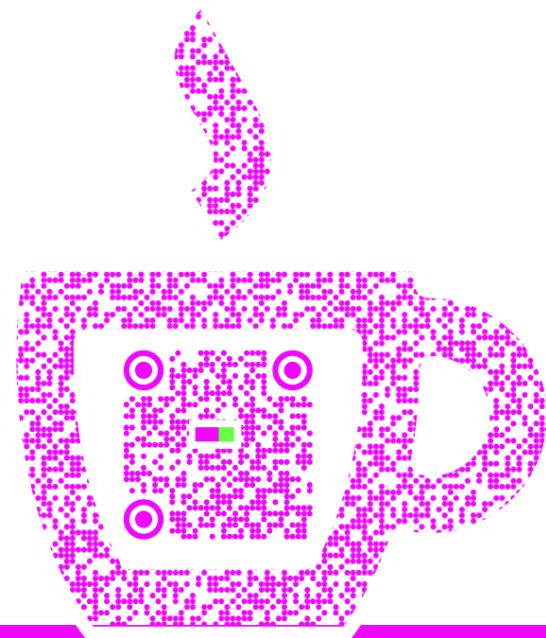
<https://swaglab.rocks/star-review/>



# Conclusion

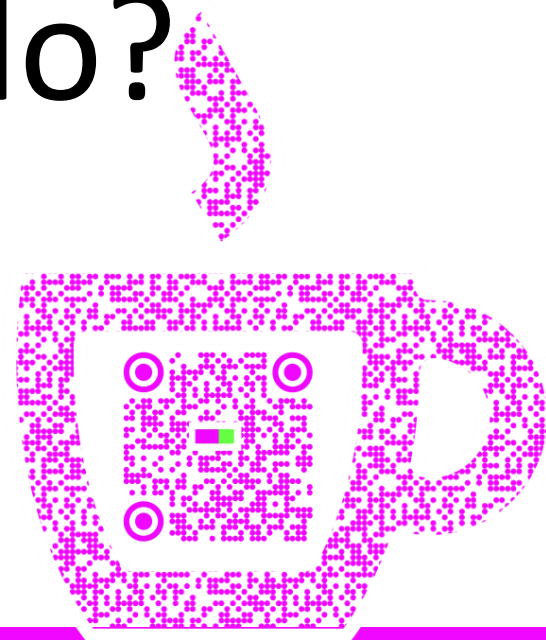
# Conclusion

- LLMs can be used for software architecture
- LLMs can generate text e.g. documentation, ADRs ...
- In a dialog with constant checks and guidance.



# Conclusion

- Software architecture and development: people business.
- LLMs: just another tool
- Will it really fundamentally change what we do?





Eberhard  
Wolff

Ralf-D.  
Müller

Soll man LLMs für  
Softwarearchitektur nutzen?



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<https://software-architektur.tv/2025/06/06/folge266.html>

# Slides + more

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