

Kan AI bidra till ökad forskningskvalitet?

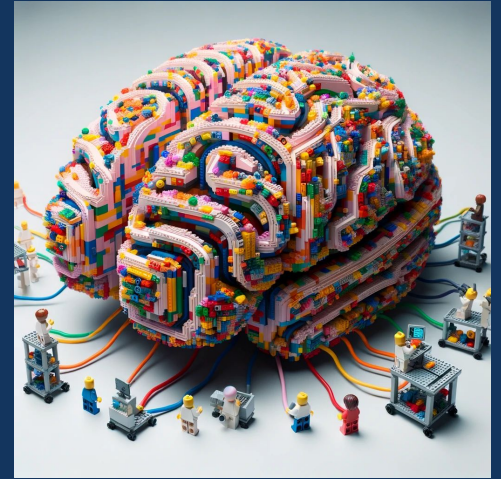
Prof. Peter Parnes

Distribuerade datorsystem, ArcTech Learning Lab
Luleå tekniska universitet

SUHF 231115

Hur kan vi använda AI i forskningsprocessen?

- Utformning av forskningsförslag.
- Assistans med litteraturgranskning.
- Datainsamling.
- Dataanalys.
- Utformning och redigering av rapporter.
- Generering av idéer och formulering av hypoteser.
- Förenkling av komplexa koncept.
- Bibliometrisk analys - kvalificering av referenser.
- Olika språk.
- Förutspå framtida forskningstrender.




Praktiska verktyg - några exempel




- Läsa publikationer.
- Transkribering och analys av intervjuer.
- Peer-review av sina egna texter innan publicering.
- Skriva delar av publikationer.
- Hitta stöttande referenser och referensanalys.

ChatPDF

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 **DFL**

Problems and Solutions in Researching Computer Game Assisted Dialogues for Persons with Aphasia

YLVA BACKMAN 
VIKTOR GARDELLI 
PETER PARNES 

*Author affiliations can be found in the back matter of this article

ABSTRACT

In this paper, we describe technological advances for supporting persons with aphasia in philosophical dialogues about personally relevant and contestable questions. A computer game-based application for iPads is developed and researched through Living Lab inspired workshops in order to promote the target group's communicative participation during group argumentation. We outline some central parts of the background theory of the application and some of its main features, which are related to needs of the target group. Methodological issues connected to the design and use of Living Labs with persons with aphasia are discussed. We describe a few problems with researching development of communicative participation during group argumentation using an app assisted intervention for the target group and suggest some possible solutions.

CORRESPONDING AUTHOR:
Ylva Backman
Luleå University of Technology, SE
ylva.backman@lulea.se

KEYWORDS:
Computer game technology; philosophical dialogues; aphasia; special needs education; philosophy; digital technology

TO CITE THIS ARTICLE:
Backman, Y., Gardelli, V., & Parnes, P. (2022). Problems and Solutions in Researching Computer Game Assisted Dialogues for Persons with Aphasia. *Design for Learning*, 14(1), 46-51. DOI: <https://doi.org/10.16993/dfl.185>

Welcome to this helpful PDF file on the remediation of learning methods for persons with aphasia! In this paper, you will learn about technological advances in computer game-based applications for promoting communicative participation during group argumentation.

Here are three example questions you may have about this file:

- ▶ What is aphasia and how does it affect communication?
- ▶ How does the computer game-based application for iPads work to support persons with aphasia?
- ▶ What are some of the challenges and solutions in researching the development of communicative participation during group argumentation using this app assisted intervention?

How does the computer game-based application for iPads work to support persons with aphasia?

The computer game-based application for iPads is called Dialogica and it is designed to provide opportunities for persons with aphasia to participate actively in conversations about contestable questions and assist them in expressing themselves through personal avatars, animations, and chats ¹. The app is intended to promote the target group's communicative participation during group argumentation ¹. It is a networked multiuser application that is designed for large screen mobile devices ². The app is still in the prototype stage and has been developed and researched through Living Lab inspired workshops ¹.

Ask any question...

Transkribering

AI Transcribe

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B *I* U ~~ABC~~ **A** **T** **H**

Looking back now, do you think that our country's use of the bomb was necessary? I believe that the view which I learned from many, but above all from General Marshall and from Colonel Stimson, the Secretary of War, the view that they had that we would have to fight our way to the main islands, and that it would involve a slaughter of Americans and Japanese on a massive scale, was arrived at by them in good faith, with regret, and on the best evidence that they then had. To that alternative, I think the bomb was an enormous relief. The war had started in 1939. It had seen the death of tens of millions. It had seen brutality and degradation, which had no place in the middle of the 20th century. And the ending of the war by this means, certainly cruel, was not undertaken lightly. But I am not, as of today, confident that a better course was then open. I have not a very good answer to this question. Dr. Oppenheimer, nevertheless, with all the rationalization, with all the inevitability of the decision that history demonstrates to us, you and many like you who brought the bomb into being still seem to suffer, may I say, from a bad conscience about it. Is that true, sir? Well, I don't want to speak for others because we're all different. I think when you play a meaningful part in bringing about the death of over 100,000 people and the injury of a comparable number, you naturally don't think of that as with ease. I believe we had a great cause to do this, but I do not think that our consciences should be entirely easy. At stepping out of the part of studying nature, learning the truth about it, to change the course of human history. Long ago I said once that in a crude sense, which no vulgarly and no humor could quite erase, the physicists had known sin. And I didn't mean by that the deaths that were caused as the result of our work. I meant that we had known the sin of pride. We had turned to affect, in what proved to be a major way, the course of man's history. We had the pride of thinking we knew what was good for man. And I do think it has left a mark on many of those who were responsibly engaged. This is not the natural business of a scientist. You know, in the first days after Hiroshima, you pointed out that the scientists who built the bomb had nurtured the hope, really, that nuclear weapons, as you put it, would lead to new patterns of behavior. Well, why is that hope failed of realization? Well, I think I may have said that then. I think I wrote it recently. I said two things, new patterns of behavior and new institutions. I think that when you remember the manifest causes of conflict between the Soviet Union and the United States, which have bedeviled us for 20 years and which are by no means in any conventional sense solved, when you remember the ideological ferocity that animated the post-war communists that we see now in the Chinese unmuted form, you think of the anti-communist ferocity with which we met this, the notion that there is a telephone communication between the White House and the Kremlin to make sure that there are no misunderstandings is a damn new pattern of behavior. I think it's something that almost without precedent in wars, in conflicts, which have such a total character as that between the communists and the free world has tended to have. I think the notion that the United States should be fixing up its power to fight limited engagements on the ground and in the air with old-fashioned weapons that we hope are a little better than they used to be, not as a step in conquering the world, but as a step in giving a chance to think, to pause, to argue and to persuade before a holocaust, that's a pattern that I believe is not familiar either. When you think that for years the intellectuals of Russia were interested in France and the United Kingdom and the United States have gotten together to talk to each other about the problems of armament and the problems of the application of science and the problems of maintaining the peace, this also is not quite something that is familiar. The institutions are not there. The patterns are faulty, frail, very vulnerable, but there is a wind blowing. Dr. Oppenheimer, from all that you have said, it seems that when you contemplate the future, it is more with hope than with pessimism. Well, I... Or is that an oversimplification? Yes, I've tried to talk about the hopeful things. The unhelpful ones jump to everyone's mind. Will the Chinese change their views of human destiny and of the relations between them and us before or after they have the power to make major nuclear war? It's anybody's guess. Will the detente between the Russians and the West survive the strains of this time? Will they survive what's going on in Asia today? We don't know. There are a hundred reasons for seeing no hope at all, and I take it for granted that everybody can think of them without being reminded. It's harder to think of anything on the other side, and I have tried to say that however frail and however tentative and however limited, they do exist, and they look to me like a bridgehead to a livable future, but not without work.

Analys av intervjuer

D|I- Code/analyze interview

AI analyzes your interview transcript

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Language
English (USA)

Poste transcript

Looking back now, do you think that our country's use of the bomb was necessary? I believe that the view which I learned from many, but above all from General Marshall and from Colonel Stimson, the Secretary of War, the view that they had that we would have to fight our way to the main islands, and that it would involve a slaughter of Americans and Japanese on a massive scale, was arrived at by them in good faith, with regret, and on the best evidence that they then had. To that alternative, I think the bomb was an enormous relief. The war had started in 1939, it had seen the death of tens of millions, it had seen brutality

Creativity
Average

Number of Results
1

Max Result Length
1500

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B I U E L T A T H P

Key Themes:

1. The necessity of using the atomic bomb in World War II
2. Moral and ethical implications of developing and using the bomb
3. Hopes for new patterns of behavior and institutions in the nuclear age
4. Concerns about the ongoing conflicts and tensions between superpowers
5. Optimism and hope for a livable future despite the challenges

Patterns:

1. The interviewee acknowledges the immense human cost of using the atomic bomb but believes it was necessary to avoid a greater loss of life in a prolonged war.
2. There is a sense of guilt and responsibility among those involved in the development of the bomb, recognizing the impact it had on human history.
3. The interviewee expresses disappointment that the hope for new patterns of behavior and institutions in the nuclear age has not been realized, citing ongoing conflicts and ideological differences.
4. Despite the challenges and uncertainties, the interviewee maintains a sense of hope for a better future and emphasizes the need for continued work towards it.

Topics related to the interview:

1. The decision to use the atomic bomb in World War II and its moral implications
2. The role of scientists in shaping human history and the consequences of their actions
3. The potential for nuclear weapons to lead to new patterns of behavior and institutions
4. The ongoing conflicts and tensions between superpowers, particularly the Soviet Union and the United States
5. The hopes, fears, and uncertainties for the future in the nuclear age

Analysis:

The interview provides a nuanced perspective on the use of the atomic bomb in World War II. The interviewee acknowledges the immense human cost but believes it was necessary to prevent even greater losses in a prolonged war. However, there is a sense of guilt and responsibility for the impact of the bomb on human history. The interviewee expresses disappointment that the hope for new patterns of behavior and institutions in the nuclear age has not been realized, given the ongoing conflicts and ideological differences. Despite these challenges, there is a sense of optimism and hope for a livable future, emphasizing the need for continued work towards it.

Key Citations:

1. "I believe that the view which I learned from many, but above all from General Marshall and from Colonel Stimson, the Secretary of War, the view that they had that we would have to fight our way to the main islands, and that it would involve a slaughter of Americans and Japanese on a massive scale, was arrived at by them in good faith, with regret, and on the best evidence that they then had. To that alternative, I think the bomb was an enormous relief."
- This citation highlights the belief that the use of the atomic bomb was necessary to avoid a greater loss of life in a prolonged war.
2. "I think when you play a meaningful part in bringing about the death of over 100,000 people and the injury of a comparable number, you naturally don't think of that as with ease. I believe we had a great cause to do this, but I do not think that our consciences should be entirely easy."
- This citation reflects the interviewee's acknowledgment of the moral and ethical implications of developing and using the atomic bomb.
3. "I think that when you remember the manifest causes of conflict between the Soviet Union and the United States, which have bedeviled us for 20 years and which are by no means in any conventional sense solved... the notion that there is a telephone communication between the White House and the Kremlin to make sure that there are no misunderstandings is a damn new pattern of behavior."
- This citation highlights the interviewee's disappointment in the lack of new patterns of behavior and institutions in the nuclear age, given the ongoing conflicts and tensions between superpowers.
4. "They do exist, and they look to me like a bridgehead to a livable future, but not without work."
- This citation encapsulates the interviewee's optimism and hope for a better future, emphasizing the need for continued efforts to achieve it.

Hitta stöttande referenser

Help me find supporting references to this abstract:

From 2019 to 2021 we conduct the multidisciplinary research project When words fail: advanced communication through digital innovation for persons with aphasia, with support from Vinnova. The project's aim is to develop a prototype for a mobile application, Dialogica, to support communicative participation for persons with acquired brain injuries and aphasia when joining conversations about deep, personally relevant, and contestable issues. Millions of people each year acquire a brain injury, for instance through stroke or car accidents. The consequences are diverse and may show in the communicative, cognitive, social, emotional, or vocational domains. Aphasia – defined as "a loss or impairment of verbal communication, which occurs as a consequence of brain dysfunction" – is one common consequence in the communicative domain. It often means long-term communicative changes with severe influence over engagement in activities and maintenance of relationships. To achieve communicative support for persons with aphasia, we bring together expertise in computer game technology, education, special needs education, and philosophy. Together with end users we develop the application and test its effectiveness. In this paper, we (i) provide an overview of the theoretical background and the development hitherto, and (ii) discuss issues or dilemmas relating to the app and the fulfilment of its purpose.

In short, Dialogica is an application developed through the game development engine Unity, designed for mobile devices with larger screens, and is based on computer game technology, theory in dialogic education, and argumentation theory. The main usage of the app is when the participants are in the same physical room and it is then intended to support participants in expressing themselves in different virtual environments through personal avatars, animations and chats. Dialogica allows for conversations' argumentative structures to be represented visually through so-called "conversation trees". In order to support participants with verbal language loss, the app also incorporates a text-to-speech function.

The project depends on close collaboration with end users, with which iterated workshops and facilitated dialogues using prototypes will be conducted. Through these workshops, we receive feedback used for further development of the prototype. In the end stage of the project, we will compare dialogues with and without Dialogica using an adapted version of the structured observational scale called the Argumentation Tool, in order to measure the extent to which the application facilitates communicative participation for the participants. However, because of the pandemic, we have not yet been able to test the prototypes developed so far. Other issues that we will attend to in greater length in this paper is the level of applicability of the app in settings other than dialogues facilitated by experienced facilitators, how the app could support the participants' awareness of improvements in communicative participation, and possible threats to internal validity when using the final app in experimental studies.



The selected references provide relevant information to support the abstract's discussion on the development and use of technology for communication support in persons with aphasia.

[Backman et al. \(2021\)](#) discuss the development of an application named Dialogica, which aims to facilitate increased communicative participation in dialogic settings for persons with aphasia. The application is based on computer game technology, dialogic education theory, and argumentation theory. This reference provides an overview of the technological development of the application and its potential to support communication skills in persons with aphasia.

[Bu et al. \(2022\)](#) present a study on the development of a mobile-based virtual reality speech rehabilitation app for patients with aphasia after stroke. The app utilizes virtual reality technology to provide speech rehabilitation exercises. This reference demonstrates the potential of mobile-based virtual reality apps in supporting speech rehabilitation for persons with aphasia.

[Szabo & Dittelman \(2014\)](#) discuss the use of mobile technology, including smartphones and tablet devices, in aphasia rehabilitation. The reference highlights the growing trend of mobile technology use among adults and the potential benefits of incorporating mobile technology into aphasia rehabilitation programs.

[Katz \(2010\)](#) explores the use of computers and related technologies in the treatment of chronic aphasia. The reference discusses how computers and technology can increase the frequency and variety of interactive language treatment and communication activities for aphasic patients, contributing to their rehabilitation.

[Kong \(2021\)](#) addresses the mental health challenges faced by persons with aphasia during the COVID-19 pandemic. The reference highlights the emotional distress experienced by persons with aphasia and emphasizes the need to address their mental health concerns.

These references collectively provide a comprehensive understanding of the development and use of technology, such as mobile applications, virtual reality, and computers, in supporting communication skills and rehabilitation for persons with aphasia. They contribute to the discussion on the theoretical background, technological development, and potential benefits of using technology in the context of aphasia.

View searches run to ground this response

Not what you were looking for? [Change Assistant Settings](#)

References

Reference #1

"...Persons with aphasia suffer from a loss of communication ability as a consequence of a brain injury. While rare, a small strand of research indicates effectiveness of dialogic interventions for commun..."

See full context

Section: Abstract

Game Technologies to Assist Learning of Communication Skills in Dialogic Settings for Persons with Aphasia

[Yiva Backman¹](#), [Viktor Gardelli²](#), [Peter Parnes³](#) 2021 [Int. J. Emerg. Technol. Learn.](#)

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Reference #2

"...Background Stroke has the highest disability-adjusted life-years lost in any disease, and approximately one-third of the patients get aphasia. Computers and tablets are innovative and aid..."

See full context

Section: Abstract

A Mobile-based Virtual Reality Speech Rehabilitation App for Patients With Aphasia After Stroke: Development and Pilot Usability Study

[Xiaofan Bu¹](#), [Peter H. F. Ng²](#), [Ying Tong³](#) et al. 2022 [JMIR Serious Games](#)

View full text Add to dashboard Cite

Reference #3

"...ABSTRACTThe use of mobile technology, including smartphones and tablet devices, is a growing trend among adults nationwide, and its potential use in aphasia rehabilitation has generated widespread interest. Despite this trend, adults living with disability are less likely than other adults to go online. Complicating things further, most adults living with aphasia come from a generation where computers and technology were not an integral part of their lives..."

See full context

Section: Abstract

Using Mobile Technology with Individuals with Aphasia: Native iPad Features and Everyday Apps

[Gretchen Szabo¹](#), [Janice Dittelman²](#) 2014 [Semio Speech Lang](#)

Hitta motsägande forskning - peer review

assistant by scite Beta

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Find competing evidence for the paragraph below:

A first main issue is that there is a lack of research tools developed and validated for this purpose for persons with aphasia specifically. However, there are tools available for studying group argumentation development in philosophical dialogues for other target groups, for instance the Argumentation Rating Tool (ART, Reznitskaya & Wilkinson, 2017); a validated observational scale "... designed to help practitioners and researchers to assess the quality of teacher facilitation and student argumentation during group discussions of texts in elementary language arts classrooms" (Reznitskaya et al., 2016, p. 2). P4wC was one of the "established pedagogical models that use classroom dialogue for promoting argumentation" on which ART was based (Reznitskaya et al., 2016, p. 11). The creators of the ART state that their "understanding of facilitation and argumentation was most informed by the scholarship on Philosophy for Children" (Reznitskaya & Wilkinson, 2021, p. 3). The ART was also developed based on a review of empirical studies examining indicators of productive talk, existing tools for making observational analyses of classroom interaction, and a professional development program involving school staff (Reznitskaya et al., 2016).



The paragraph states that there is a lack of research tools developed and validated specifically for persons with aphasia. However, there are tools available for studying group argumentation development in philosophical dialogues for other target groups, such as the Argumentation Rating Tool (ART) (Flamand-Roze et al., 2011). The creators of the ART state that their understanding of facilitation and argumentation was most informed by the scholarship on Philosophy for Children (Flamand-Roze et al., 2011). The ART was developed based on a review of empirical studies examining indicators of productive talk, existing tools for making observational analyses of classroom interaction, and a professional development program involving school staff (Flamand-Roze et al., 2011).

While the paragraph focuses on the lack of research tools for persons with aphasia, there are several references that discuss the development and validation of tools for assessing language impairments and aphasia severity in stroke patients. (2011) discuss the validation of a new language screening tool for patients with acute stroke (Flamand-Roze et al., 2011; Charalambous et al., 2020) review the methodologies used in studies that assessed language impairments in people with aphasia using tools such as the Western Aphasia Battery (WAB) and the Boston Diagnostic Aphasia Examination (BDAE) (Charalambous et al., 2020). (2012) present data derived from the Northwestern Assessment of Verbs and Sentences (NAVS), a test battery designed to examine syntactic deficits in aphasia (Cho-Reyes & Thompson, 2012). These references provide evidence of tools that have been developed and validated for assessing language impairments and aphasia severity in stroke patients, which could potentially be adapted for use in persons with aphasia.

In addition to these references, there are several others that discuss the assessment and treatment of aphasia using conversation analysis (CA) and the application of CA to the assessment of aphasia. Beeke et al. (2007) provide an overview of the application of CA to the assessment of aphasia and discuss two published assessment tools that use CA (Beeke et al., 2007; Dickey & Warren, 2015) examine the influence of event-related knowledge on verb-argument processing in aphasia (Dickey & Warren, 2015; Vries et al., 2016) conduct a systematic review of pain assessment in stroke patients with aphasia (Vries et al., 2016; Dipper et al., 2018) compare the use of syntax and semantics across two discourse genres in speakers with and without aphasia (Dipper et al., 2018; Malyutina et al., 2016) discuss the role of verb argument structure in narrative speech and its application to the assessment of aphasia (Malyutina et al., 2016). These references provide additional evidence of tools and methodologies that have been used in the assessment and treatment of aphasia.

Overall, while there may be a lack of research tools specifically developed and validated for persons with aphasia, there are tools available for studying argumentation development in other target groups and tools that have been developed and validated for assessing language impairments and aphasia severity in stroke patients. These tools and methodologies could potentially be adapted for use in persons with aphasia, providing a starting point for further research in this area.

View searches run to ground this response

[alternative tools for assessing argumentation in aphasia](#)
[limitations of Argumentation Rating Tool for aphasia](#)
[research tools for studying argumentation in aphasia](#)

What do you need help with?



References

Reference #1

"...[1][2][3][4] Despite some controversy, early detection of aphasia after stroke may improve rehabilitation by taki..."

See full context

Validation of a New Language Screening Tool for Patients With Acute Stroke

Constance Flamand-Roze¹, Bruno Falissard², Emmanuel Roze³ et al. 2011
[Stroke](#)

100 0 108 1

View full text Add to dashboard Cite

Reference #2

"...Methodologies varied among the four studies as participants were assessed on a variety of tools (see Table 3). Two studies, the ALA and the MOSE, used the Western Aphasia Battery (WAB) [...]"

See full context

Section: Results

Are People with Aphasia (PWA) Involved in the Creation of Quality of Life and Aphasia Impact-Related Questionnaires? A Scoping Review

Marina Charalambous¹, Maria Kambanaros², Jean-Marie Annoni³ 2020
[Brain Sciences](#)

14 0 20 0

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Reference #3

Utmaningar med AI i forskningen

- Hårfin gräns mellan hjälp och fusk.
 - Lätt att överproducera publikationer.
 - AI kan inte ta ansvar för forskningen.
 - Datakvalitet och tillgänglighet. Vad vet AI?
 - Etik och snedvridning.
 - Komplexiteten i att förstå AI-beslut.
 - Överanpassning och generalisering av data.
 - Hållbarhet och miljöpåverkan.
-
- Mycket snabb utveckling där vi inte vet vad som finns om 5-10 år.
 - Forskningsområden förändras - tröghet hos forskare?

Nyttja AI-verktyg i forskning

- Hur mycket kan/bör vi använda AI-verktyg i processen utan att det blir fusk?
 - Dataanalys
 - Läsning
 - Skrivande
 - Argument, förbättra text och mer
 - Referenser
- **Hur mycket användning är överanvändning?**

Från passiv till aktiv AI-hjälp

AI-chattbottar är idag passiva.
Vad händer om vi ger AI vilja?

En AI-assistent som lyssnar på alla våra samtal och lägger sig i där det passar, som en människa vid vår sida som lyssnar och sufflerar hela tiden.

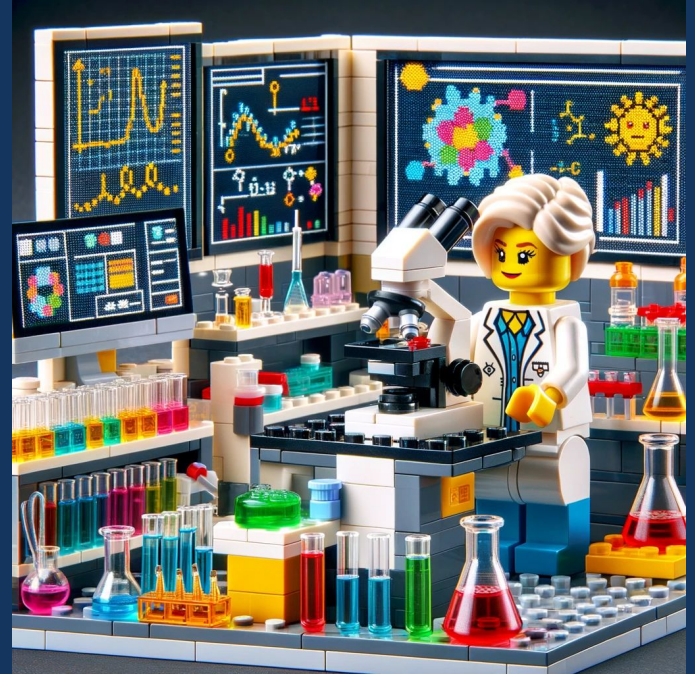


Kan AI bidra till ökad forskningskvalitet?

Beror på forskarna
och hur AI används!

AI-verktyg kan hjälpa till med,
inte ersätta
publikationsprocessen.

AI ger inte per automatik ökad
kvalitet.





Professor Peter Parnes

peter.parnes@ltu.se, +46702392995

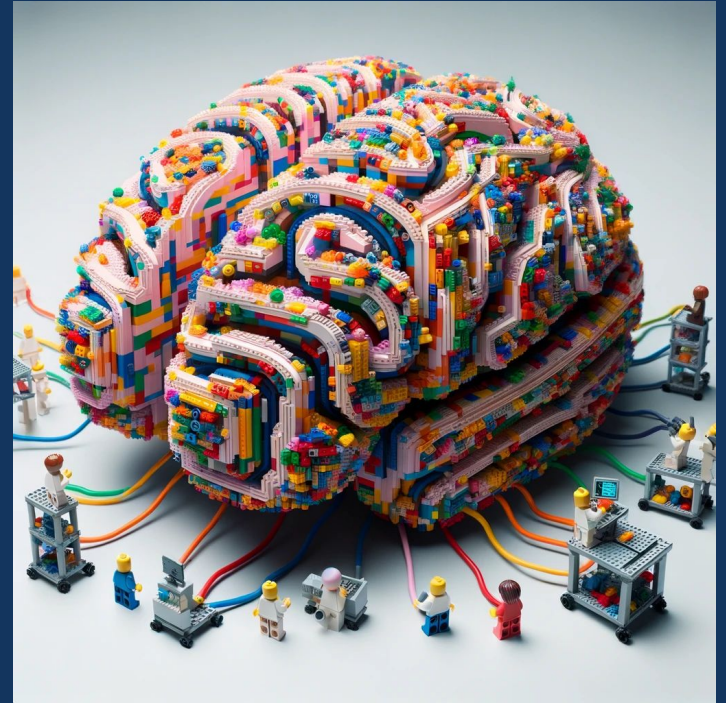
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<https://www.linkedin.com/in/peterparnes/>

<https://www.facebook.com/peterparnes/>

Artificiell generell intelligens (AGI)

- AI som kan förstå, lära, anpassa och tillämpa kunskap på samma sätt som en människa.
- Bred AI, jämför med smal AI idag.
- AGI kan lösa komplexa problem och förbättra många sektorer
- Risker som missbruk, säkerhetsproblem och etiska frågor.
- Fortfarande långt ifrån att skapa verklig AGI även om vissa påstår motsatsen.



Superintelligens

- En AI som överstiger mänsklig intelligens i alla praktiskt betydelsefulla aspekter, inklusive kreativitet, allmän kunskap och problemlösningsförmåga.
- Utföra uppgifter som är för komplexa för människor.
- Kan själv förbättra sig.
- Forskning kring AI-säkerhet och etik är kritisk för att hantera riskerna med superintelligens.



Singulariteten

- AI:s utveckling accelererar så snabbt att den överstiger mänsklig förståelse och kontroll.
- Mänsklig relevans när maskinerna utför uppgifter snabbare än vi kan förstå.
- Oförutsägbarhet där vi inte vet vad det kommer att leda till.
- Antagligen mycket stora framsteg men också mycket stora risker.
- Hypotes - utan återvändo.

