GÖTEBORGS UNIVERSITET

STUDENT

0039-EAU

TENTAMEN

TIA301 TIA315 Tentamen

Kurskod	TIA301, TIA315
Bedömningsform	--
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Bedömningsfrist	--
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HT24: Welcome to examination!

This examination consists of open questions, sometimes referred to as 'essay questions'. It includes ***7 questions***, each rewarded with a maximum of 3 points. The examination is limited to ***2 hours.*** To pass it you need ***13 points*** (60%)

The grading will focus on the overall capability to explain and apply ideas. It will assess whether (1) answers are logically coherent, whether (2) they are grounded in readings, lectures, and discussions, and, when applicable, that (3) answers engage the key concepts of the course.

Advice:

Please, read the questions carefully! Each question normally consists of multiple requests, such as: "***Define***... and ***explain***... ***illustrate*** ... with an example..."

If you feel unsure about how to respond or don't remember exactly what papers or lectures said, trust your instincts and stay focused on the question. Explain in your own words, to the best of your abilities. Do *not* start to broadly talk about related things, to show you know other things.

It could be worth noting that longer answers are not necessarily better answers, since long texts increase the risk of ending up with inconsistencies.

1 HT24 Question 1

During an after-work gathering filled with intellectual discussions, one of your friends expresses skepticism about the idea that artifacts and technologies can have ***agency***. They argue that only humans can have agency because they have consciousness and intentionality.

Explain to your friend how we can understand and assign agency to artifacts and technologies, without involving intention or free will. Use your own examples to support your explanation.

Skriv in ditt svar här

Agency could be defined as the inherent ability to provide affordance to a user, to provide capability that you might not have had otherwise. Human beings are dependent on the artifacts they use, that is what differ us from other animals. If we had not learn how to use artifacts to our own gain, humanity's evolution would have looked completely different. Even if one would have the desire and free will to perfom a certain task, some tasks are simply not possible without specific artifacts. It is immaterial if the artifacts themselves do not have consciousness and intentionality, agency lies in what it makes possible to its users. Since agency depends on what the user is trying to achieve, a single artifact can have multiple uses and purposes, beyond what it was created to do from the beginning.

To take a modern example, Chat-GPT was most likely created to be an information source about pretty much anything you can imagine. Instead of spending hours on a search engine such as Google, one can ask the chat specific questions, and it can act as a helpful tool in one's research. Today, there are many users that use it for programming and writing code, which may have not been the point at the start. The chat evolved its use to include the ability to provide affordance for software development. Many are able to use it for programming, even without any prior knowledge about the subject. Chat-GPT's agency lies in what it allows its users to accomplish, and what it can actually be used for, and not whether it has its own intentionality to do so. Therefore, this and other artifacts, can be seen as having agency.

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Besvarad.

2 HT24 Question 2

Lena and Mark are discussing the concept of ***affordances***, in the context of design. Lena argues that affordances are just about 'look and feel'. Mark disagrees and insists that affordances are about more than just aesthetics; they are intrinsic properties of artifacts that guide user interaction.

Help Mark explain his point of view by defining the concept of affordances. Use your own words. Then, discuss how affordances are useful in the design of digital technology.

Skriv in ditt svar här

Affordance refers to the specific traits of an artifact that makes specific uses and abilties possible. These properties can be inscribed into the artifact at the start, with the intentionality to be used a certain way, or they can evolve as users find their own ways of using the artifact. To illustrate this, one might consider digital/smartswatches: a user might own this artifact for the sole purpose of always knowing what time and date it is today. But if they choose, they could also use it to track their workouts, their quality of sleep and so on.
These intrinsic properties provide the ability of choosing which functionalities best fit into the users lifestyle, and provides the affordance to choose which to use and not. It is said that a good designer implements these affordances in their designs at the start, and it should be obvious how these are to be used if one wishes to do so. Therefore, the designer should perhaps not focus too much on the 'look and feel' of the artifact, and rather on what the designer wants to make possible for the user, and how to inscribe that into the artifact itself.

Ord: 196

Besvarad.

3 HT24 Question 3

We have argued that generative processes are ***emergent***. Describe the characteristics of an emergent process and provide an example to illustrate how such a process has influenced the development or evolution of a specific digital technology.

Skriv in ditt svar här

The emergent quality refers to the fact that an artifact might have specific functionalities at the start of its usage, but with time, use and interaction with users, new or different functionalities might "emerge". Generative processes are emergent because of the fact that one could start the projects with ideas in mind, but oftentimes, one is not completely sure of what's actually going to come out of the process. They are open-ended, and different developers and designers with different ideas might continue on the process in a different direction than it was "meant to" at the start. With different points of view, different artifacts may emerge. This is made possible with the fact that resources used for development are reprogrammable; since hardware itself does not dictate what a specific program might be used for, the program's functionalities can be changed at any time during the design-process, nothing is "written in stone". It also has to do with the fact that any data one might need to develop one's artifact is available in the same binary format, making it accessable to everybody without the hassle of translating them into another format. That means that one could add any data, and therefore any functionality, at anytime. The fact that digital technology have the ability to change its functionality and uses at any given time without loss of either time or money, gives them their generative quality.

Ord: 234

Besvarad.

4 HT24 Question 4

Jonathan Zittrain identifies four key elements that characterize ***generative technology***. Introduce these four elements and explain how each of them contributes generativity.

Skriv in ditt svar här

Tuning: an iterative process in which feedback from users and developers feed back into the technology, and modifications are performed as needed. This is an ongoing process where small changes performed often are preferred to big changes performed at the end, since they make sure that the developers stay on the "right track" earlier on, and can modify accordingly. The feedback could result in a product that might look very different than it was thought of at the start, thanks to other points of view.

Reframing: developers might have to use different resources and data for their product than they anticipated at the start. This could lead to the artifact itself developing new or different uses, and the developers might have to reconsider the overall purpose of the artifact itself.

Reusing: the fact that digital resources oftentimes have a layered modular artchitecture means that they are made up of networks that are loosely coupled together. These networks have the ability to be coupled with completely different resources, making the structure completely different. Therefore, developers could choose to use specific parts of a resource for other products, saving time and effort.

Co-creation: people from different backgrounds and with different knowledge come together to create something from scratch, which means that they have almost endless opportunities to create something new and innovative.

Ord: 220

Besvarad.

5 HT24 Question 5

In the course, we have relied on Star and Griesemer's work, when discussing ***boundary objects***. This paper describes a boundary object as plastic, yet robust.

Explain what Star and Griesemer mean when they describe boundary objects as both plastic and robust. Then, use the example of a whiteboard in a collaborative workspace to illustrate how a boundary object can have both of these characteristics.

Skriv in ditt svar här

Boundary objects are robust in the way that it is recognizable to people from different backgrounds and knowledge. Even if one is not completely familiar with the boundary object, one could still figure out is uses and functionalities rather easy. They are also plastic in the way they are modifiable and can be suited to specific needs, and can therefore have a number of uses, and not just for a particular group. These properties make it possible for boundary objects to act as "bridges between social worlds", meaning that even if people come from different backgrounds, with different experience and knowledge, these objects can be used to connect people and combine their expertise.

With the example of a whiteboard, it is first and foremost robust in the way almost everyone knows that it is used to be written and add things on, visualizing ideas and concept. It is plastic in the way one can erase and add information as one pleases, meaning that the content itself also could be considered plastic and evolving. It can therefore be considered a boundary object in the way it can connect people with different backgrounds, combining knowledge and new ideas, that might have been harder to grasp without the object being used.

Ord: 208

Besvarad.

6 HT24 Question 6

Imagine you are a product manager at a tech company that is developing ***boundary resources*** for a new software platform. Your company is considering two alternative strategies to enhance innovation and build market presence: ***access openness*** and ***resource openness***.

1. Use your own words to distinguish between access openness and resource openness.
2. Briefly, discuss how each strategy could impact your company's innovation capabilities and revenue streams.

Skriv in ditt svar här

Access openness refers to which degree certain functionalities should be available to developers. There is a concern regarding safety when it comes to developing services that are made to be available to other people, and whether everyone in a company actually should have access to everything, or if only a specific group of people to be able to use certain functionalities. If a company leaves itself too open and available, there is a risk of outsiders having access to information and funcitonalities as well, which could have dire consequences.

Resource openness refers to how certain resources and their accompaning data should be used, oftentimes tech companies use their users data for training models or tailoring their user experience. However, this data could be highly personal and should not be available to everyone and everything. If there's a safety breach in the company, and personal data would leak per example, both the company and its customers safety could be questioned.

These is a need to balance these two facts when forming strategies. Generative innovation is dependent on a certain degree of freedom, since there is only so much you can do and create under strict guidelines. If these guidelines prevent innovation, the company might produce subpar products that do not prodivde anything new, and therefore has no appeal to a general audience, which could effect revenue. However, if guidelines are too "slack" and safety concerns are not taken seriously, there is a possibility of outer sources taking advantage of that and using the fact for their own gains. The company might create an amazing product, but users might still not want to use it it they knew the company leaked their info to hackers in the process of getting it out. That would also effect the revenue negatively.

Ord: 297

Besvarad.

7 HT24 Question 7

Alice and John are having a debate about the role of digital technologies in the context of ***digital innovation***. John argues that digital technologies are tools that merely reflect and support the physical world. Alice, on the other hand, believes that digital technologies are now shaping and defining reality itself.

Intervene in their debate by introducing and explaining the concept of ***ontological reversal***. Use it to provide an argument that supports Alice's position.

Skriv in ditt svar här

Ontological reversal refers to the fact that when digitalization first began, the point was to make digital versions/copies of physical artifacts that exist out in the world. However, as digitalization has become even more prominent, there has occured a reversal where digital versions are not used to represent physical copies, but have been made more "real" than objects that exist in the physical world. A prominent example of this would be the concept of tickets, be it airplane on concert; before digitalization, people would recieve a physical copy of their ticket which would ascertain that they indeed have booked the flight or experience. Today, everyone is always given a digital copy of their ticket, and one might request a physical copy, but they are no longer necessary. If one only recieves a physical copy, one might even reason that it's not official enough of a confirmation, if there is not digital proof of the booking. Therefore, the digital version has become more "real" and prominent, than its physical twin in the "real" world. In this way, digital technologies shape the way we define "real" and important, and has changed the very fact that objects do not have to consist of matter, to effect us in reality.

Ord: 206

Besvarad.