Mind the Game!
Computer Games driving AI & transforming Society

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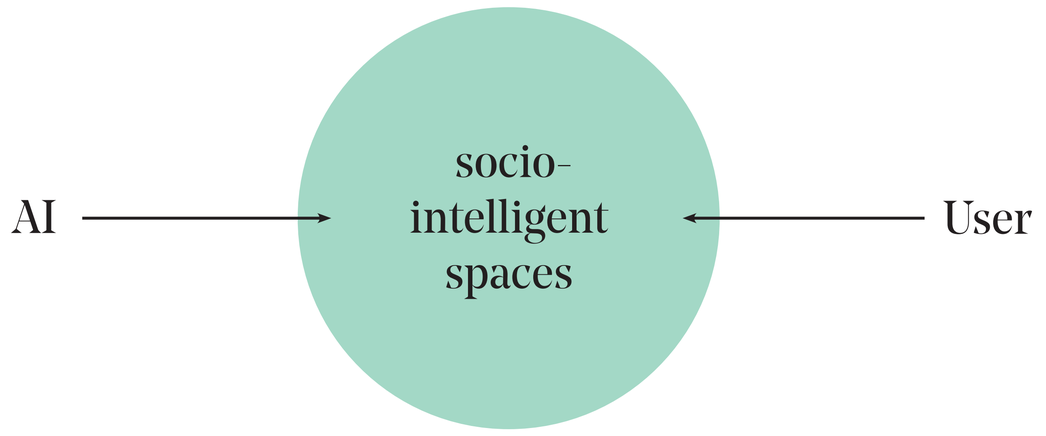
Artificial Intelligence (AI) increasingly dominates the public discourse. While most of the publicly discussed smart cars, robots, and algorithms are still to be developed in academic and industrial labs, the massive exposure of millions of users to AI in computer games is already part of our everyday experience. Games have an audience of 46% of the German population and even larger audiences in countries like Japan, the US, China and Korea regardless of gender, ethnicity, social or educational background. While we are worried about a few autonomous cars running in supervised test conditions in California, we have gotten used to driving amongst autonomous cars in games like Grand Theft Auto V or Forza Motorsport — fully equipped with autonomous path finding algorithms, collision detection, obstacle recognition and other advanced AI methods. Thus, AI is not a future technology but has long been part of the living rooms of our present society, opening up an socio-intelligent space. Therefore we »mind the game« and start to explore the socio-intelligent space of AIs and users in games.



Observations

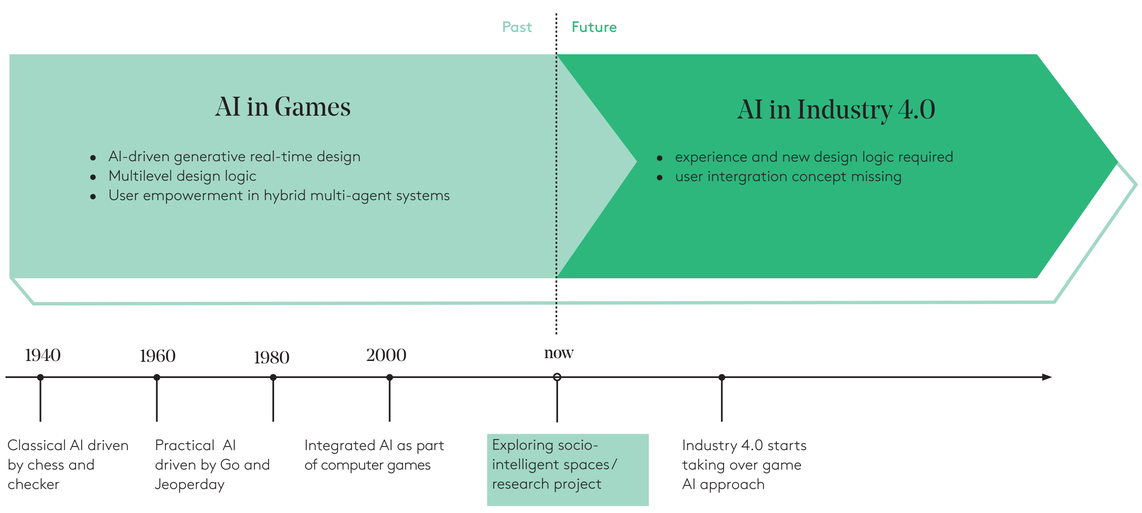
History of AI has always been connected to games

Automation anxiety linked to AI in western society (loss of control)

Meanwhile 2,5 billion people are playing computer games worldwide, adapting themselves to AI on a daily basis

Games as spaces of negotiation

Research interest



Games provide a continuous ubiquitous and pervasive mode of testing AI, disseminating AI technologies, and introducing AI in a massive prosumer community. AI in games is a well-established technology but surprisingly a less explored topic in today's discussions on AI. Therefore, we'd like to look at possible transfers from game development to science and industry, e.g. in the field of generative design processes (mechanical engineering) and world perception of AI or rather the human-AI-collaboration (cognitive science and epistemology).

Next steps

1. Exploring socio-intelligent spaces in games

Epistemologies of Play and AI
asks about the conditions of socio-intelligent spaces at the intersection of user and AI. The goal is to reveal affective and epistemological dimensions of ludic inter-spatiality in computer games by theoretical analysis (media-theory, philosophy of design)

Aesthetics of Play and AI
investigate the ludic aesthetics of AI and its influence on sociocultural adaptation. How are aspects of interaction (acting with, acting against, action in conjunction) and steering of AI components represented at the level of game interfaces?

Semantics of Play and AI
aims to analyze the use of language in dealing with AI phenomena by observing discourse communities, in which opinions, observations and emotional expressions are exchanged by means of online forums, chat rooms, YouTube walkthroughs, tutorials and twitch broadcasts.

2. Transferability to Industry 4.0?

Logic of Play, AI, and Work
will explore the impact of game AI on academic AI research as well as the process logic of game and AI for Industry 4.0. By observing decision making in game design we aim to transfer these logics to application design at the RWTH Aachen Cluster of Excellence »Internet of Production«.

Economy of Play, AI, and Work
develops design guidelines together with Industry 4.0 engineers, programmers and designers to shape innovation in Industry 4.0, but also, vice versa, challenging game designers with open human-machine interaction problems from industrial production.

Sources
Bostrom, Nick (2014): Superintelligence. Paths, Dangers, Strategies. Oxford: Oxford University Press. /// Fuchs, Mathias & Andreas Sudmann (eds. 2019): Games and AI. Special issue for eludamus. Journal for Computer game culture 10 (in print). /// Galloway, Alexander R. (2006): Gaming. Essays on Algorithmic Culture. Minneapolis: University of Minnesota Press. /// Gramelsberger, Gabriele, Rautzenberg, Markus, Wiemer, Serjoscha & Mathias Fuchs (2019): Mind the Game! Die Exteriorisierung des Geistes ins Spiel gebracht. In: ZfM Zeitschrift für Medienwissenschaft 21/2, 29-38. /// Grin, John & Armin Grunwald (eds. 2000): Vision Assessment: Shaping Technology in 21st Century Society. Towards a Repertoire for Technology Assessment. Berlin, Heidelberg: Springer. /// Shannon, Claude E. (1950): Programming a computer for playing chess. In: The London, Edinburgh, and Dublin Philosophical Magazine and Journal of Science, 41: 314. /// Turing, Alan (1950): Computing Machinery and Intelligence. In: Mind 49: 433-460.