

Titel:

Deepstream – A investigation in machine learning / “AI” – In collaboration with Hybrides Lernatelier

Beschreibung:

The generalization of recursive algorithms and its implementation in digital computers concretize cybernetic thinking and its applications in almost all social, economical and political domains. Capital moves from a mechanistic model, accurately observed by Marx, towards an organismic model realized by informational machines equipped with complex recursive algorithms. Data is the source of information; it is that which allows the recursive models to be ubiquitous and effective.

The digital urbanism that is in the process of developing, and which will be the central theme of the digital economy, is driven by the recursive operation of data. Data, in Latin, means something that is already given, like sense data that determines the falling of the tick, or the red colour of the apple in front of me. Since the mid-twentieth century, data has acquired a new meaning, namely, computational information, which is no longer merely ‘given’ as such, but is rather produced and modulated by human beings. In this sense, we can see that the notion of ‘societies of control’ described by Gilles Deleuze is far beyond the common discourse of a society of surveillance; it rather means societies whose governmentality is based on the auto-position and auto-regulation of automatic systems. These systems vary in scale; it can be a global corporation like Google, a city like London, a nation state like China and also the whole planet.

Yuk Hui - MACHINE AND ECOLOGY, in *Cybernetics for the 21st Century*, Vol. 1: Epistemological Reconstruction, Edited by Yuk Hui, Hanart Press 2024

The aim of the course is to gain a critical understanding of machine learning and its application. The course focuses on the analysis of classification of video streams and their classification. Another central topic is cloud infrastructures and the so-called "edge computing" or "Internet of Things", which together with machine learning, form an almost all-encompassing set of tools for data collection that is beyond any (state) control. The course is therefore also suitable for those who are interested in a critical examination of "AI". The course gives an introduction to machine learning and its programming in Python using Nvidia Jetson Nano Computers, that we set up in the seminar. Programming knowledge in Python is mandatory. The seminar will be a conceptual workshop that allows students to explore different tools in an open environment.

Course Objectives: This course aims to provide students with a comprehensive understanding of machine learning (ML) and its practical applications, fostering critical reflection on the implications of these technologies. By engaging with real-world problems and ethical dilemmas, participants will be equipped to navigate the complexities of ML in an increasingly data-driven society.

Conceptual Workshop: The course will adopt a seminar format that encourages collaboration and open exploration. Students will work in groups on projects that challenge them to apply their technical skills while engaging in critical discussions about the ethical implications of their work.

Peer feedback sessions and structured debates will provide opportunities for students to articulate their perspectives, challenge assumptions, and develop a well-rounded understanding of the complexities surrounding ML and AI.

This course is designed for students with a foundational understanding of programming, particularly in Python, who are interested in machine learning, video analysis, and the ethical dimensions of AI technologies.

By integrating technical skills with critical reflection, this course aims to produce not only proficient machine learning practitioners but also informed citizens who can thoughtfully engage with the implications of AI technologies. Students will leave with a nuanced understanding of how ML can be harnessed for positive societal impact while remaining vigilant to its potential risks and ethical challenges.