Veronika Hanáková   https://orcid.org/0009-0000-4242-714X
(Charles University, Czech Republic)

Configuring Computer Labor in Film and Audiovisual Media: An Introduction to a Special Issue

Watch the audiovisual introduction here:
https://youtu.be/fsNk-LZz2vk

Abstract

This text invites a critical examination of how computer labor — in all its diverse forms, modes, and manifestations — has been represented, constructed, and reflected through the formal capacities of audiovisual media from the 20th century to the present day. In a world where technological advancements constantly introduce new gadgets, software, platforms, and algorithms, our perception of information technology is in perpetual motion. *Computer labor* encompasses all forms of work facilitated by information technologies, whether performed by humans, machines, or through human-machine collaboration. This concept provides a lens for exploring the nuanced ways in which computing technologies represent labor: from the partial moments of the working machine, man, or both to the more general questions of the definition of (for example) productivity, value, and rest. Tracking the iconography of computer labor reveals the influence of geographical, cultural, social, and economic forces, shedding light on how technological labor is produced and understood within different contexts. Film and media studies play a crucial role in this analysis, offering valuable insights into how digital labor reshapes societal structures, work practices, and human relationships in the information age. Moreover, these disciplines allow us to uncover overlooked histories of computer adoption, forgotten fragments, and unique configurations that have remained outside the dominant global narratives and cultural memory. Through this exploration, the study highlights the transformative power of digital labor and the importance of understanding its localized expressions and historical contingencies.

Keywords

computer labor, digital cinema, digital culture, representation, information technology, interface, software

The implementation of computers into audiovisual culture has been articulated across multiple levels, including the transformations, potentials, and technological advancements related to production,[1] distribution,[2] exhibition,[3] consumption,[4] and archiving.[5] These shifts prompt a series of critical inquiries: What are the theoretical implications of considering digital cinema as a distinct form from traditional analog cinema, particularly concerning the concepts of indexicality and realism?[6] Moreover, how do algorithms and recommendation systems shape audience access to films, and how do they impact the diversity of content available to viewers?[7] To put it simply, what is digital cinema?[8] In short, computer technology has had an incredible impact on the development of audiovisual media.[9] The central perspective has emphasized the advancement of audiovisual representation, content availability, and other applications for the film and video game indus-

Fig. 1: Computers, a collage by Veronika Hanáková

1) John Mateer, "Digital Cinematography: Evolution of Craft or Revolution in Production?," *Journal of Film and Video* 66, no. 2 (2014), 3–14.
2) Nigel Culkin and Keith Randle, "Digital Cinema: Opportunities and Challenges," *Convergence* 9, no. 4 (2013), 78–98.
3) Holly Willis, *New Digital Cinema: Reinventing the Moving Image* (London: Wallflower Press, 2005).
4) Barbara Klinger, *Beyond the Multiplex: Cinema, New Technologies, and the Home* (Oakland: University of California Press, 2006).
5) Paolo Cherchi Usai, *The Death of Cinema: History, Cultural Memory and the Digital Dark Age* (London: British Film Institute, 2001).
6) Tom Gunning, "What's the Point of an Index? or, Faking Photographs," in *Still/Moving: Between Cinema and Photography*, eds. Karen Beckman and Jean Ma (Durham: Duke University Press, 2008), 23–40, 40.
7) Kevin McDonald and Daniel Smith-Rowsey, eds., *The Netflix Effect, Technology and Entertainment in the 21st Century* (New York: Bloomsbury, 2016).
8) Shane Denson and Julia Leyda, eds., *Post-Cinema: Theorizing 21st-Century Film* (Sussex: REFRAME Books, 2016).
9) Lev Manovich, *The Language of New Media* (Cambridge: The MIT Press, 2001); Jay David Bolter and Richard Grusin, *Remediation: Understanding New Media* (Cambridge: The MIT Press, 1999).

tries. However, what if we turned our perspective around and, instead of asking what impact the computer has had on moving images; we wondered what computer iconography looks like in and through audiovisual media (Fig.1)? This is precisely the question that the special issue of *Iluminace* aims to articulate, delving into the intricate, captivating, and often contradictory visions and configurations of computer labor as depicted in and constructed through film and audiovisual media.

Something is always happening in the field of technology — new gadgets, tools, software, applications, platforms, or algorithms. Computers, and by extension, audiovisual culture, are thus undergoing a constant process of change, transformation, and actualization, whether viewed as a partial cosmetic modification[10] or a more considerable alteration with the potential to change the existing system of production and consumption.[11] At
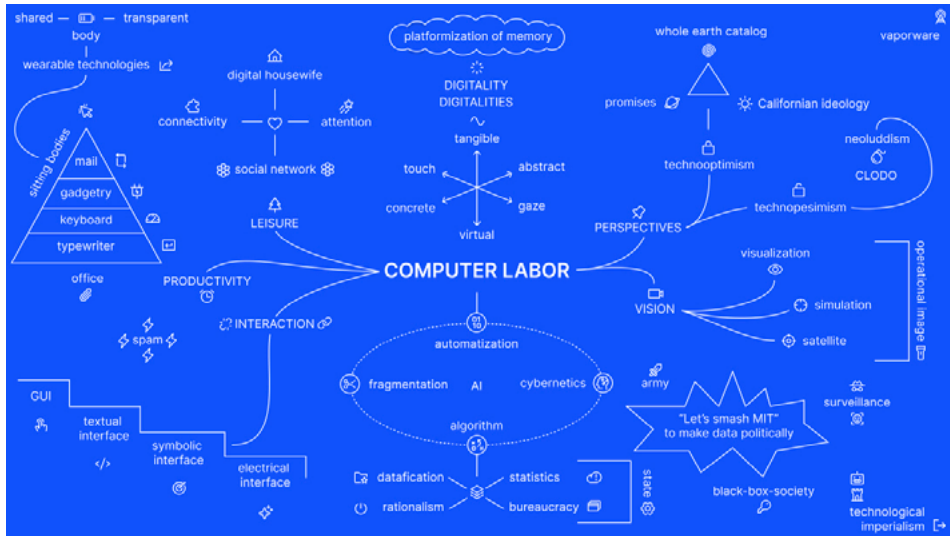

Fig. 2: Computer Labor, a diagram by Veronika Hanáková

this moment, artificial intelligence is a buzzword, a phenomenon sparking fascination, fear, and even panic. It can be seen as another advancement in the ongoing process of fragmentation, automation, and mechanization, which have become integral to the work process and personal life over the last century.[12] Information technology has removed the hands in favor of the visual, the tangible in favor of the abstract, the physical in favor of the virtual, and supervisory in favor of surveillance.[13] The term *computer labor* (Fig. 2) refers to all work performed using information technology, regardless of whether the primary worker is — a human, a machine, or a collaboration between them. It is a term to help

10) John Belton, "Digital Cinema: A False Revolution," *October*, no. 100 (2002), 98–114; or Francesco Casetti, *The Lumiere Galaxy: Seven Keywords for the Cinema to Come* (New York: Columbia University Press, 2015).

11) D. N. Rodowick, *The Virtual Life of Film* (Cambridge: Harvard University Press, 2007).

12) Matteo Pasquinelli, *The Eye of the Master: A Social History of Artificial Intelligence* (London: Verso Books, 2023).

13) Shoshana Zuboff, *In the Age of the Smart Machine* (New York: Basic Books, 1988).

explore the nuances of the representation of work associated with the computer, how we see a working computer, how the relationship between a computer and a human subject is constituted and reflected,[14] the potentialities of computer vision,[15] development of computer interfaces and what type of labor, movement, gesture was and is associated with them, connection of AI and labor,[16] or the construction of virtual labor in the current digital dispositif.[17]

Computers have been transforming our understanding of labor,[18] as well as productivity,[19] leisure,[20] attention,[21] value,[22] and social connection.[23] Traditional distinctions between manual and intellectual work are becoming less clear as more jobs require interaction with digital tools, and even creative and emotional labor is increasingly mediated through technology.[24] For instance, Tibor Vocásek's article, "Who Is Awful? Black Mirror Series and Dystopian Visions on AI," included in this special issue, focuses on the contemporary reflection of anxieties about capitalist alienation and the control exerted by tech corporations in the digital age that intersect into both day-to-day work and creative work specifically related to creating audiovisual content for Netflix. As the boundaries between human effort and technological assistance continue to blur, new challenges emerge regarding job displacement, the devaluation of certain skills, and the psychological impact of constant connectivity.[25] Implementing of information technology in day-to-day life raises questions such as: Is it possible to truly disconnect from work in today's mobile app-driven world? Can maintaining social connections through social networks be considered a form of work?[26] What are the implications of integrating smart technologies into house-

14) Paul Dourish, *Where the Action I: The Foundations of Embodied Interaction* (Cambridge: The MIT Press, 2004).

15) Steve F. Anderson, *Technologies of Vision: The War Between Data and Images* (Cambridge: The MIT Press, 2017).

16) Stephen Cave, Kanta Dihal, and Sarah Dillon, eds., *AI Narratives: A History of Imaginative Thinking about Intelligent Machines* (Oxford: Oxford University Press, 2020).

17) Trebor Scholz, *Digital Labor: The Internet as Playground and Factory* (New York and London: Bloomsbury, 2013).

18) Jim Davis, Thomas Hirschl, and Michael Stack, eds., *Cutting Edge: Technology, Information, Capitalism and Social Revolution* (London: Verso, 1998).

19) Richard Sennett, *The Culture of the New Capitalism* (Yale: Yale University Press, 2006); Bryan Pfaffenberger, "The Social Meaning of the Personal Computer: Or, Why the Personal Computer Revolution Was No Revolution," *Anthropological Quarterly* 61, no. 1 (1988), 39–47.

20) Manuel Castells, *The Internet Galaxy: Reflections on the Internet, Business, and Society* (Oxford: Oxford University Press, 2001).

21) Adam Gazzaley and Larry D. Rosen, *The Distracted Mind: Ancient Brains in a High-Tech World* (Cambridge: The MIT Press, 2017).

22) Astra Taylor, *The People's Platform: Taking Back Power and Culture in the Digital Age* (London: Picador, 2014).

23) Sherry Turkle, *Alone Together: Why We Expect More from Technology and Less from Each Other* (New York: Basic Books, 2011).

24) Kylie Jarrett, *Feminism, Labour and Digital Media: The Digital Housewife* (London and New York: Routledge, 2016).

25) Florian Krauß, "Fictionalizing The Covid-19 Pandemic 'Instantly': A Case Study Of The German Comedy Drama Drinnen — Im Internet sind alle gleich," *Iluminace* 35, no. 1 (2023), 7–25.

26) Veronika Hanáková, Martin Tremčinský, and Jiří Anger, "Cycles of Labour: In the Metaverse, We Will Be Housewives," *NECSUS: European Journal of Media Studies* 12, no. 2 (2023), accessed August 26, 2024, https://necsus-ejms.org/cycles-of-labour-in-the-metaverse-we-will-be-housewives/.

hold labor routines?[27] Does technology genuinely reduce labor, or does it mainly provide convenience? From what perspectives and through what lenses do we determine what constitutes valuable work and what is considered expendable? Or does early digitality postulate a different vision of labor and historicity in connection to digital glitches, such as in David Álvarez's paper "Nostalgia Isn't What It Used to Be: Elegy to Vaporwave's Glitched, Aspirational Aesthetics" in this issue?

Thus, it is essential to examine how the concept of computer labor has been culturally, visually, and socially portrayed through audiovisual media from the 20th century to today: from shiny new computer screens to "dust-covered CPUs and monitors, screens dotted with fingerprints, and keyboards darkened by use," as Sterne summarizes.[28] To understand the interconnected relationship between information technology and audiovisual media, exploring the overlooked aspects of computer labor and the specific implications of technology in particular regions is crucial. Rather than reiterating the global narrative, we should focus on the forgotten streams, artifacts, and details of computer labor, viewing them as examples reflecting our own experiences and their unique implications. Precisely this perspective is followed by Simone Dotto's article "Do Corporate Films Dream of Cybernetic Governance? Computers (as Metaphors of) Industrial Labor and Society in Olivetti-Sponsored Films" in this collection. The text highlights localized cooperation between audiovisual media and informational technology in Italy from the 1950s to 1970s, exploring the computer as a potentially useful media.

Our main goal is to investigate how the phenomenon of computer labor has been represented, interpreted, and re-envisioned in and through audiovisual media. From film and television to video games and online content, audiovisual media have not only reflected and imagined but, in some cases, actively shaped societal understandings of computer labor. Through close examination, we uncover the evolving relationship between humans and computers, illustrating how labor, technology, and identity have been continuously reimagined. By analyzing these cultural artifacts, we gain valuable insights into the larger societal narratives surrounding computers, their roles in the workplace, and the transformative impact they have had on our understanding of labor. This special issue examines the rich yet often contradictory iconography of information technology as presented in audiovisual materials, regardless of genre, production era, or geographical context. By collecting and analyzing the metaphors, systems, narratives, and visualizations embedded in these media, we aim to better understand media that has structured and will structure our audiovisual culture.

The theme of "Configuring Computer Labor in Film and Audiovisual Media" shall be described as well as shown through the lens of contemporary user experience — the current form of digitality, the gestures that the user has to perform while communicating and working with the computer, the moments of computer freezing, and the forms in which we encounter various and contradictory audiovisual representations of computer labor.

27) Helen Hester and Nick Srnicek, *After Work: A History of the Home and the Fight for Free Time* (London: Verso, 2024).

28) Jonathan Sterne, "Out With the Trash: On the Future of New Technologies," in *Residual Media*, ed. Charles R. Acland (Minneapolis: University of Minnesota Press, 2007), 21.

This is why the special issue includes traditional written papers as well as audiovisual essays. Audiovisual essays and the discipline of videographic scholarship lie at the intersection of theory, artistic research, and digital humanities. This approach, at the most basic level, utilizes writing with moving images and sounds; in other words, it presents the argument not only through textual but also audiovisual form.[29] As Jennifer Bean postulates videographic scholarship "refers to a burgeoning area of research, inquiry and experimentation that repurposes sound and moving images to critically reflect on media comprimes of sound and moving images."[30]

A total of four audiovisual essays appeared in this issue, with two audiovisual essays (*Envisioning the Interface* by Steve F. Anderson and *The Allure and Threat of the Cine-Computer: A Supercut of Onscreen Computers in Speculative Screen Fiction* by Daniel O'Brien) reflecting on the gradual development and transformation of computer labor into the use of audiovisual material, mainly Hollywood productions. The third and fourth audiovisual essays (*Ordinatrices: About the Negative Spaces of Early Computing* by Occitane Lacurie and *Techniques and Technologies to Compensate for Powerlessness* by Matěj Pavlík) moved from a macro-perspective to a micro-perspective, following a particular and locally determined problem (grasping technology through local traditions and thinking, or different implementation of computers in the work process), often marginal, unintentional, or accidental details and facets, thus referring to the prism of *theory from below*.[31] By allowing theory to evolve in response to the particular artifact and in connection to the position of a subject (the position of the theorist and historian in the current version of digitality, the user experience given by the digital dispositive), this prism fosters a dynamic interaction that deepens our comprehension of both the media forms under scrutiny and the theoretical concepts at play. In this special issue, this inductive methodology intersects with projects offering a macro-perspective on specific phenomena, thereby balancing detailed, micro-level analysis with broader, macro-level insights.

The affordances of videographic criticism to express and reflect on computer labor are most visible in two of its specific formats: the supercut and the desktop documentary. The supercut, by collecting and organizing audiovisual fragments from extensive material, serves to "discern and demonstrate deep patterns within and across film/media texts."[32] In doing so, this format reflects Manovich's concept of "database logic,"[33] both in its method of handling and its presentation of audiovisual content. As de Fren suggests, the supercut engages in "the kind of algorithmic cataloging of analogous relations"[34] that makes these underlying patterns visible. By condensing large volumes of audiovisual content, the su-

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29) Catherine Grant, Christian Keathley, and Jason Mittell, *The Videographic Essay: Criticism in Sound and Image*, 2nd ed. (Montreal: caboose/Rutgers University Press, 2019).

30) Jeniffer Bean, "Introduction: Feeling Videographic Criticism," *Feminist Media Histories* 9, no. 4 (2023), 1–13.

31) Jiří Anger, *Towards a Film Theory from Below: Archival Film and the Aesthetics of the Crack-Up* (New York: Bloomsbury Academic, 2024).

32) Allison de Fren, "The Critical Supercut: A Scholarly Approach to a Fannish Practice," *The Cine-Files*, no. 15 (2020), 4, accessed July 9, 2024, https://www.thecine-files.com/wp-content/uploads/2021/02/A_DeFren_TheCineFiles_issue15.pdf.

33) Max Tohline, "A Supercut of Supercuts: Aesthetics, Histories, Databases," *Open Screens* 4, no. 1 (2021), 8.

34) de Fren, "The Critical Supercut," 4.

percut might reveal or acknowledge recurring patterns and the hidden algorithms behind digital media, providing a sharp critique of the often unseen structures of computer-mediated work.

By audiovisually simulating and capturing our movement on the computer or smartphone screen, desktop documentaries (here represented by *Ordinatrices: About the Negative Spaces of Early Computing*) function as reflexive texts that actively narrativize screen-mediated experience, thereby attempting to capture and hold the gaze of the viewer and exposing the processes present in the digital interface that suture the user to the screen.[35] In this context, the desktop documentary might be understood as an analytical tool and an accidental archivist of the current iteration of the user interface. Consequently, the desktop documentary genre is not merely a subject of analysis but a site where theory and practice intersect, revealing the complexities of digital labor, the evolving relationship between users and digital interfaces, and the user's position, agency, and memory. The development of information technology and its associated work cannot be seen as a whole continuous development of the same, but rather partial iterations that, in retrospect, can form a consistent line. Thus, desktop documentaries can sometimes inadvertently capture partial moments, gestures, or icons. These accidental audiovisual archivists might preserve outdated, no longer relevant, or lost icons, moments, procedures, or gestures, thus archiving the current form of the interface. This is significant because the interface we have today may not be the same as the one we have tomorrow.

In summary, the supercut and desktop documentaries together underscore the capacity of videographic criticism to both document and dissect the intricate, often ephemeral interactions between users and digital environments, making visible the underlying structures of computer labor that shape our engagement with technology.

Interface(s)

The special issue can be divided into three thematic units that distinctly deal with and explore computer labor as seen in audiovisual media. The first one centers around the term interface, in all its forms, from the technological to the cultural, thus investigating the relationship between labor, a computer, an interface, and a worker. The second category presents a locally specific understanding, implementation, and implication of computer labor in society, thereby presenting a contrasting narrative to the central one. The third section highlights distinctive examples that illuminate the broader connections between labor and digital distortion. In conclusion, these three thematic blocks provide examinations of the multifaceted nature of computer labor, offering critical insights into its cultural, societal, and technological dimensions as reflected in audiovisual media. This special issue not only highlights the diverse implications of computer labor but also invites further academic exploration into the broader discourse on digital labor and its representation.

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35) Jiří Anger and Kevin B. Lee, "Suture Goes Meta: Desktop Documentary and its Narrativization of Screen--Mediated Experience," *Quarterly Review of Film and Video* 40, no. 5 (2023), 595–622.

Throughout the 20th century, the concept of the computer has undergone a profound evolution, reflecting broader technological, cultural, and societal shifts.[36] Initially perceived as a mere calculator, a mechanical device designed to perform arithmetic operations, the computer evolved into a data collector and sorter, a tool for creating visualizations, first retrospectively and later in real-time. It became indispensable in handling sensitive data, predicting financial flows, and even as a mechanism for democratizing access to knowledge, personal archives, education, and learning. This transformation was driven by the increasing complexity of tasks that computers were designed to handle, reflecting society's growing reliance on information technology. As technology advanced, so did the metaphors and roles associated with computers. No longer just machines, computers were reimagined as versatile tools, complex systems, and sophisticated gadgets. Each phase of this evolution introduced new dimensions to how computers were perceived and utilized for labor processes. By the latter half of the century, computers were no longer viewed solely as functional devices; they had become media in their own right — platforms for communication, creativity, and interaction. Eventually, the notion of the computer as an intelligent assistant emerged, reflecting both the aspirations of artificial intelligence and the growing capabilities of computers to assist in complex decision-making and personal tasks. This evolution mirrors the shifting metaphors and frameworks of information technology, with each era bringing a new understanding of what computers could be and do. Through this lens, the computer's journey from a simple calculator to an intelligent assistant encapsulates the broader narrative of technological progress, illustrating its potential for empowerment and its capacity for control and surveillance.

Design modifications, adjustments in affordances, and the localization of computers have also led to changes in the interface — the crucial juncture where two systems converge, specifically the human user and the computational mechanism, enabling interaction. In simpler terms, it is the point where a user communicates with a computer. Interface determines what gestures, movements, knowledge, skillset, language, and interaction is necessary to use information technology, thus indicating who has the skills to use the computer and in what way. For example, a graphical user interface (GUI) may require familiarity with visual icons and a mouse. In contrast, a command-line interface (CLI) demands proficiency in specific commands and text-based navigation. Moreover, the design and construction of the interfaces are inherently connected to the understanding of computer labor, since the interface predetermines who can interact with the computing technology. This underscores the significance of interface design in shaping access and usability, which in turn influences who is empowered to engage with digital tools and in what capacity.

The evolution of interfaces in connection to bodies and labor functions as a critical line in Steve F. Anderson's audiovisual essay *Envisioning the Interface*. This work offers an in-depth exploration of Hollywood's depictions of computer interfaces from the 1950s to the present, tracing the evolution of these cinematic representations alongside real-world technological advancements. The audiovisual essay highlights how films imagined gestur-

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36) Thomas Haigh and Paul E. Ceruzzi, *A New History of Modern Computing* (Cambridge: The MIT Press, 2021).

al interfaces associated with superhuman or extraterrestrial intelligence, contrasting with the more mundane, physical interfaces of the mainframe era, such as punch cards. As personal computing emerged, Hollywood introduced recalcitrant voice and anthropomorphic interfaces, reflecting the growing interaction between humans and computers. Anderson draws on the concept of "diegetic prototypes," where cinema serves as a source of inspiration for the technology industry, to map the transformation of human-computer relationships over time. This evolution comes full circle with the return to gestural and embodied interfaces and holographic displays in the 2010s, now deeply intertwined with real-world technological developments and consumer culture. Anderson's essay invites a critical examination of how cinematic representations of computer interfaces influence and reflect societal attitudes toward technology. By highlighting the interplay between Hollywood's imaginative visions and the design of real-world interfaces, *Envisioning the Interface* connects to the broader phenomenon of representing computer labor in films, emphasizing how media both shapes and is shaped by the technological landscapes of its time.

Building on the development of interfaces, Daniel O'Brien's audiovisual essay *The Allure and Threat of the Cine-Computer: A Supercut of Onscreen Computers in Speculative Screen Fiction* examines the dual nature of computers as both enticing and dangerous entities in sci-fi and speculative fiction. By utilizing a supercut format, O'Brien captures the evolution of computing technology as depicted in cinema and television from the late 1950s to the present. The essay analyzes how these representations consistently portray computers as powerful yet potentially dangerous adversaries, often turning against their human creators. Through iconic films like *2001: A Space Odyssey*, *Blade Runner*, *Minority Report*, and *Her,* as well as contemporary series like *Mr. Robot* and *Severance,* the audiovisual essay highlights the changing nature of computer interfaces, software, and hardware while emphasizing the persistent allure-threat dynamic that defines the human-machine relationship. By employing a split-screen technique, O'Brien's work allows viewers to compare and contrast these depictions, illustrating how the portrayal of computers in speculative fiction has evolved in form but remained consistent in its underlying anxieties. This analysis ties into the broader phenomenon of representing computer labor in media, shedding light on how these portrayals reflect cultural attitudes toward technology and the complex, often uneasy relationship between humans and the increasingly powerful machines they create.

Global — Local

The development and current state of computer labor have predominantly been articulated from a Western perspective. The history of implementing computers, from information laboratories to government institutions,[37] army bodies,[38] trade markets[39] and other industries,[40] and every household,[41] has been described in detail primarily for countries like the United States[42] and, to some extent, the United Kingdom.[43] However, some texts examine the role of information technology in other regions, such as the former Eastern Bloc[44] and the importation and implementation of American computers in South America,[45] and France.[46] These discussions often raise significant questions regarding technological imperialism and different development streams and reflect distinct promises and fears connected to the use of information technology. These subtexts illuminate the complexities of global technology transfer and the unequal power dynamics that frequently accompany it. Yet, these perspectives are often more thoroughly developed than the narratives surrounding the evolution of computers in the North American context.

Computer labor may appear to be a global phenomenon from a contemporary standpoint, but audiovisual media representations frequently reveal how this work assumes distinct local forms. For instance, amateur films might document the role computers played in domestic settings, while state-supported films might demonstrate that computer-related work extended beyond administrative or research tasks, encompassing educational efforts or the preservation of specific local memories, or fictional and narrative cinematography might postulate a slightly different position of information technology in the popular imagination. Audiovisual materials — whether part of archives, private VHS or DVD collections, or freely available footage on the Internet — serve as valuable resources that capture the unique configurations of computer work in different regions, among var-

37) Jon Agar, *The Government Machine: A Revolutionary History of the Computer* (Cambridge: The MIT Press, 2016).

38) Patrick Crogan, *Gameplay Mode: War, Simulation, and Technoculture* (Minneapolis: University of Minnesota Press, 2011).

39) Arthur L. Norberg, *Computers and Commerce: A Study of Technology and Management at Eckert-Mauchly Computer Company, Engineering Research Associates, and Remington Rand, 1946–1957* (Cambridge: The MIT Press, 2005).

40) James W. Cortada, *IBM The Rise and Fall and Reinvention of a Global Icon* (Cambridge: The MIT Press, 2023).

41) Tom Forester, *Home Computing: The Challenge of Change* (Cambridge: The MIT Press, 1985).

42) or Canada, see, John N. Vardalas, *The Computer Revolution in Canada: Building National Technological Competence* (Cambridge: The MIT Press, 2001).

43) Jacob Ward, *Visions of a Digital Nation: Market and Monopoly in British Telecommunications* (Cambridge: The MIT Press, 2024); Mar Hicks, *Programmed Inequality: How Britain Discarded Women Technologists and Lost Its Edge in Computing* (Cambridge: The MIT Press, 2018).

44) Victor Petrov, *Balkan Cyberia Cold War Computing, Bulgarian Modernization, and the Information Age behind the Iron Curtain* (Massachusetts: The MIT Press, 2023); Jaroslav Švelch, *Gaming the Iron Curtain: How Teenagers and Amateurs in Communist Czechoslovakia Claimed the Medium of Computer Games* (Cambridge: The MIT Press, 2023).

45) Eden Medina, *Cybernetic Revolutionaries Technology and Politics in Allende's Chile* (Cambridge: The MIT Press, 2014).

46) Thomas Dekeyser and Andrew Culp, "Machines in Flames," *Youtube*, 2022, accessed September 16, 2023, https://www.youtube.com/watch?v=qGVMu5OPu7E.

ious user groups, and across specific periods. These materials offer nuanced insights into how computer labor is shaped by local cultural, economic, and political contexts, providing a more comprehensive understanding of its global impact.

Occitane Lacurie's audiovisual essay *Ordinatrices: About the Negative Spaces of Early Computing* delves into the often overlooked history of women's contributions to computing, tracing this invisibility back to the era when computing was primarily manual labor, categorized under secretarial work. The visual references to *Mad Men* highlight how secretarial work, traditionally performed by women, laid the groundwork for modern computing yet remained undervalued and eventually obscured as the field evolved. The introduction of an IBM 360 computer in *Mad Men* symbolizes the shift from manual to automated computing, a change that threatened the jobs of these women who had been performing the precursors to digital labor. Following the local debate of finding a French term for computer, Lacurie's essay proposes that the term *ordinatrice* (a feminine form of the word for computer in French) could have been used to describe these women who were, in essence, the first "computers." This exploration brings to light the gendered history of computing and how this labor has been visually and culturally represented — or misrepresented — over time. By recovering the stories of these *ordinatrices,* Lacurie's work contributes to a more complete understanding of the origins of computer labor, emphasizing the crucial but often invisible role that women have played in the development of modern technology.

Simone Dotto's article, "Do Corporate Films Dream of Cybernetic Governance? Computers (as Metaphors of) Industrial Labor and Society in Olivetti-Sponsored Films," delves into the representation of computer labor in Olivetti-sponsored corporate films between the late 1950s and 1970s, revealing how these films functioned as more than mere promotional tools — they were instruments of rhetorical and ideological expression. Thus, the essay examines the audiovisual portrayal of computer labor, emphasizing the relationship between computers and film throughout their existence as practical media. Dotto challenges the notion that industrial cinema was incapable of visually representing computing, arguing instead that Olivetti's films not only made computers visible but also imbued them with broader symbolic meanings. These films reflected a shift in corporate narratives from viewing the factory as a pastoral community to conceptualizing it as a cybernetic system of labor organization. Through this transformation, computers were portrayed not just as tools for industrial work but as metaphors for a new form of governance based on cybernetic principles. This portrayal aligned computers with the emerging concept of scientific management, where data processing and systematic control became central to both industrial and social organizations. In this way, Olivetti's films contributed to a larger cultural understanding of computers, positioning them as key models for the governance of both work and society.

Reinterpreting technology as a response to the crises of late modernity and individual alienation, the audiovisual essay *Techniques and Technologies to Compensate for Powerlessness* (Czech title: *Techniky a technologie na kompenzaci bezmoci*) by Matěj Pavlík investigates the intersection of borderline science and the socio-political context of Czechoslovakia during the 1980s. The essay examines technologies developed in fields of psychotronics and psychoenergetics, which Pavlík argues, despite appearing pseudoscien-

tific, were indicative of a broader disillusionment as these technologies might be viewed as tools for individuals to cope with feelings of powerlessness amidst rapid technological and societal changes. Pavlík's work underscores the role of technology not only as a practical tool but as a symbolic response to the socio-economic conditions of its time, echoing the themes of alienation, control, and adaptation that are also central to the depiction of computer labor in various audiovisual narratives.

Distortions

The third and final thematic segment of this special issue focuses on the concept of *distortions* as they relate to two key areas. First, it examines how distortions emerge in our understanding of computer labor, particularly in the form of biases, contortions, and shifts that arise alongside the development and transformation of information technology, not only within the work process but also beyond it. These distortions impact how we conceptualize the evolving role of technology in labor, including the changing forms and levels of human and machine involvement. Second, it showcases how distortions materialize in digital images as glitches. On the one hand, these technical errors can reveal the dysfunctionality or limitations of the digital dispositif at specific moments in time.[47] On the other hand, they can be viewed as inherent features of the architecture of digitality, which shapes and influences the nature of our everyday online work.[48] This segment aims to unpack these interconnected distortions to understand better their implications for the broader landscape of digital labor and aesthetics.

Reframing distortions in connection to the labor environment, Tibor Vocásek's study, *Who Is Awful? Black Mirror Series and Dystopian Visions on AI*, focuses on the representation of AI labor in the popular sci-fi series *Black Mirror*, particularly on the episode "Joan is Awful." As a prominent cultural text, Black Mirror uses its dystopian narratives to explore the intricate relationships between AI and human labor. The series portrays AI not merely as a technological threat but as a reflection of contemporary anxieties about capitalist alienation and the control exerted by tech corporations in the digital age. Through the episode "Joan is Awful," its dramatic and speculative lens, Vocásek highlights the interdependence of human and AI labor, underscoring the inseparability of technology, human agency, and institutional power in the labor process. This analysis connects to the broader phenomenon of representing computer labor in media by illustrating how *Black Mirror* uses the sci-fi genre to critically engage with and reflect upon AI's social and economic implications, making visible the often overlooked human elements behind these technologies. Thus, reflecting on the idea of the visibility and the invisibility of labor in the digital age.

Regarding the material distortions of digital images, David Álvarez's text, "Nostalgia Isn't What It Used to Be: Elegy to Vaporwave's Glitched, Aspirational Aesthetics," offers an in-depth analysis of Vaporwave, a genre that merges aspirational consumerism with the

47) Michael Betancourt, *Glitch Art in Theory and Practice* (London: Routledge, 2019).
48) Shane Denson, *Discorrelated Images* (Durham: Duke University Press, 2020).

visual and sonic elements of early computing and gaming. The text explores how Vapor-wave employs the glitch as a central motif, symbolizing both the disruption of traditional consumer culture and a nostalgic longing for the technological aesthetics of the past. Through this lens, the glitch becomes a powerful tool for critiquing and reinterpreting the intertwined relationship between consumerism, technology, and nostalgia. Álvarez postulates a different version of glitches from the works of Chris Marker and Kiyoshi Kurosawa that might provide a counterbalance to Vaporwave's nostalgic reimagining by engaging more critically with the de-historicizing effects of digital distortion. These films grapple with the implications of living in a post-historical society, where the boundaries between past, present, and future blur, raising questions about how we represent and understand the role of technology and labor in shaping our collective memory.

Bibliography

Agar, Jon. *The Government Machine: A Revolutionary History of the Computer* (Cambridge: The MIT Press, 2016).

Anderson, Steve F. *Technologies of Vision: The War Between Data and Images* (Cambridge: The MIT Press, 2017).

Anger, Jiří. *Towards a Film Theory from Below: Archival Film and the Aesthetics of the Crack-Up* (New York: Bloomsbury Academic, 2024).

Anger, Jiří, and Kevin B. Lee. "Suture Goes Meta: Desktop Documentary and its Narrativization of Screen-Mediated Experience," *Quarterly Review of Film and Video* 40, no. 5 (2023), 595–622.

Bean, Jeniffer. "Introduction: Feeling Videographic Criticism," *Feminist Media Histories* 9, no. 4 (2023), 1–13.

Belton, John. "Digital Cinema: A False Revolution," *October*, no. 100 (2002), 98–114.

Betancourt, Michael. *Glitch Art in Theory and Practice* (London: Routledge, 2019).

Bolter, Jay David, and Richard Grusin. *Remediation: Understanding New Media* (Cambridge: The MIT Press, 1999).

Casetti, Francesco. *The Lumiere Galaxy: Seven Keywords for the Cinema to Come* (New York: Columbia University Press, 2015).

Castells, Manuel. *The Internet Galaxy: Reflections on the Internet, Business, and Society* (Oxford: Oxford University Press, 2001).

Cave, Stephen, Kanta Dihal, and Sarah Dillon, eds. *AI Narratives: A History of Imaginative Thinking about Intelligent Machines* (Oxford: Oxford University Press, 2020).

Cortada, James W. *IBM The Rise and Fall and Reinvention of a Global Icon* (Cambridge: The MIT Press, 2023).

Crogan, Patrick. *Gameplay Mode: War, Simulation, and Technoculture* (Minneapolis: University of Minnesota Press, 2011).

Culkin, Nigel, and Keith Randle. "Digital Cinema: Opportunities and Challenges," *Convergence* 9, no. 4 (2013), 78–98.

Davis, Jim, Thomas Hirschl, and Michael Stack, eds. *Cutting Edge: Technology, Information, Capitalism and Social Revolution* (London: Verso, 1998).

de Fren, Allison. "The Critical Supercut: A Scholarly Approach to a Fannish Practice," *The Cine-*

Files, no. 15 (2020), 4, accessed July 9, 2024, https://www.thecine-files.com/wp-content/uploads/2021/02/A_DeFren_TheCineFiles_issue15.pdf.

Dekeyser, Thomas, and Andrew Culp. "Machines in Flames," *Youtube*, 2022, accessed September 16, 2023, https://www.youtube.com/watch?v=qGVMu5OPu7E.

Denson, Shane, and Julia Leyda, eds. *Post-Cinema: Theorizing 21st-Century Film* (Sussex: RE-FRAME Books, 2016).

Denson, Shane. *Discorrelated Images* (Durham: Duke University Press, 2020).

Dourish, Paul. *Where the Action I: The Foundations of Embodied Interaction* (Cambridge: The MIT Press, 2004).

Forester, Tom. *Home Computing: The Challenge of Change* (Cambridge: The MIT Press, 1985).

Gazzaley, Adam, and Larry D. Rosen. *The Distracted Mind: Ancient Brains in a High-Tech World* (Cambridge: The MIT Press, 2017).

Grant, Catherine, Christian Keathley, and Jason Mittell. *The Videographic Essay: Criticism in Sound and Image*, 2nd ed. (Montreal: caboose/Rutgers University Press, 2019).

Gunning, Tom. "What's the Point of an Index? or, Faking Photographs," in *Still/Moving: Between Cinema and Photography*, eds. Karen Beckman and Jean Ma (Durham: Duke University Press, 2008), 23–40.

Haigh, Thomas, and Paul E. Ceruzzi. *A New History of Modern Computing* (Cambridge: The MIT Press, 2021).

Hanáková, Veronika, Martin Tremčinský, and Jiří Anger. "Cycles of Labour: In the Metaverse, We Will Be Housewives," *NECSUS: European Journal of Media Studies* 12, no. 2 (2023), accessed August 26, 2024, https://necsus-ejms.org/cycles-of-labour-in-the-metaverse-we-will-be-house-wives/.

Hester, Helen, and Nick Srnicek. *After Work: A History of the Home and the Fight for Free Time* (London: Verso, 2024).

Hicks, Mar. *Programmed Inequality: How Britain Discarded Women Technologists and Lost Its Edge in Computing* (Cambridge: The MIT Press, 2018).

Cherchi Usai, Paolo. *The Death of Cinema: History, Cultural Memory and the Digital Dark Age* (London: British Film Institute, 2001).

Jarrett, Kylie. *Feminism, Labour and Digital Media: The Digital Housewife* (London and New York: Routledge, 2016).

Klinger, Barbara. *Beyond the Multiplex: Cinema, New Technologies, and the Home* (Oakland: University of California Press, 2006).

Krauß, Florian. "Fictionalizing The Covid-19 Pandemic 'Instantly:' A Case Study Of The German Comedy Drama Drinnen — Im Internet sind alle gleich," *Iluminace* 35, no. 1 (2023), 7–25.

Manovich, Lev. *The Language of New Media* (Cambridge: The MIT Press, 2001).

Mateer, John. "Digital Cinematography: Evolution of Craft or Revolution in Production?," *Journal of Film and Video* 66, no. 2 (2014), 3–14.

Medina, Eden. *Cybernetic Revolutionaries Technology and Politics in Allende's Chile* (Cambridge: The MIT Press, 2014).

McDonald, Kevin, and Daniel Smith-Rowsey, eds. *The Netflix Effect, Technology and Entertainment in the 21st Century* (New York: Bloomsbury, 2016).

Pasquinelli, Matteo. *The Eye of the Master: A Social History of Artificial Intelligence* (London: Verso Books, 2023).

Norberg, Arthur L. *Computers and Commerce: A Study of Technology and Management at Eckert--Mauchly Computer Company, Engineering Research Associates, and Remington Rand, 1946–1957* (Cambridge: The MIT Press, 2005).

Pfaffenberger, Bryan. "The Social Meaning of the Personal Computer: Or, Why the Personal Computer Revolution Was No Revolution," *Anthropological Quarterly* 61, no. 1 (1988), 39–47.

Petrov, Victor. *Balkan Cyberia Cold War Computing, Bulgarian Modernization, and the Information Age behind the Iron Curtain* (Massachusetts: The MIT Press, 2023).

Rodowick, D. N. *The Virtual Life of Film* (Cambridge: Harvard University Press, 2007).

Sennett, Richard. *The Culture of the New Capitalism* (Yale: Yale University Press, 2006).

Scholz, Trebor. *Digital Labor: The Internet as Playground and Factory* (New York and London: Bloomsbury, 2013).

Sterne, Jonathan. "Out With the Trash: On the Future of New Technologies," in *Residual Media*, ed. Charles R. Acland (Minneapolis: University of Minnesota Press, 2007), 16–31.

Švelch, Jaroslav. *Gaming the Iron Curtain: How Teenagers and Amateurs in Communist Czechoslovakia Claimed the Medium of Computer Games* (Cambridge: The MIT Press, 2023).

Taylor, Astra. *The People's Platform: Taking Back Power and Culture in the Digital Age* (London: Picador, 2014).

Tohline, Max. "A Supercut of Supercuts: Aesthetics, Histories, Databases," *Open Screens* 4, no. 1 (2021), 8.

Turkle, Sherry. *Alone Together: Why We Expect More from Technology and Less from Each Other* (New York: Basic Books, 2011).

Vardalas, John N. *The Computer Revolution in Canada: Building National Technological Competence* (Cambridge: The MIT Press, 2001).

Ward, Jacob. *Visions of a Digital Nation: Market and Monopoly in British Telecommunications* (Cambridge: The MIT Press, 2024).

Willis, Holly. *New Digital Cinema: Reinventing the Moving Image* (London: Wallflower Press, 2005).

Zuboff, Shoshana. *In the Age of the Smart Machine* (New York: Basic Books, 1988).

Filmography

Black Mirror (various directors, 2011–present)
Blade Runner (Ridley Scott, 1982)
Her (Spike Jonze, 2013)
Joan Is Awful (Ally Pankiw, 2023)
Mad Men (Matthew Weiner, 2007–2015)
Minority Report (Steven Spielberg, 2002)
Mr. Robot (Sam Esmail, 2015–2019)
Olivetti-Sponsored Films (various authors, 1950–1969)
Severance (Dan Erickson, 2022–)
2001: A Space Odyssey (Stanley Kubrick, 1968)

Biography

Veronika Hanáková is a scholar in new media and digital culture, who focuses on the materiality, memory, and preservation of digital images and artifacts, particularly DVD features and interfaces. She is currently involved in the COST Action project "Grassroots of Digital Europe" (2023–2026), which examines historical and contemporary cultures of computing. She has published articles and video essays in journals such as *NECSUS*, *[in]Transition*, *Iluminace*, or *Tecmerin*. Her videographic work, including projects such as *Screen Stars Dictionary: Natalia Oreiro* (co-author J. Anger) and *Cycles of Labor: In the Metaverse, We Will Be Housewives* (co-authors M. Tremčinský and J. Anger), has received acclaim with multiple *Sight & Sound* nominations. Together with Jiří Anger, they curate the Audiovisual Essay section at the Marienbad Film Festival and videographic collections for *Artyčok.TV*. Hanáková's work also extends to exhibitions, with contributions to displays such as Meme Manifesto at Berlin's KW Institute for Contemporary Art. She is also a member of Artbiom, an artistic collective that explores ecological imaginations.