

MARX AND BABBAGE IN MATTEO PASQUINELLI'S A SOCIAL HISTORY OF ARTIFICIAL INTELLIGENCE: IMPLICATIONS FOR DEMYSTIFYING AI AND GUIDING THE DIGITAL ECONOMY^(*)

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***Abstract:** This review article focuses on Matteo Pasquinelli's recent work, *The Eye of the master: A Social History of Artificial Intelligence*, which offers a politicized genealogy of AI and highlights the inseparability of AI's ontology from the social and political conditions that produce its algorithms. Here, we use Hybrid Semantic Formalism, a hybrid language that utilizes generative AI's strength of manipulating symbols and tokens, to create a logic map of Pasquinelli's categorization of social algorithm, formal algorithm, and automated algorithm. Crucially, Pasquinelli connects Babbage's labor theory of automation and principle of labor calculation to Marx's concept of the general intellect and reveals how various forms of machine intelligence mirror, embody, and amplify the analytical intelligence of collective labour. Pasquinelli traces AI's history alongside labour analysis, psychometrics, and the drive for a 'control revolution,' unpacking technical concepts such as self-organization and cybernetics to show that capitalist technologies are fundamentally sociomorphic and sociogenic: they formalize proven patterns of social cooperation rather than the biomorphic replication of how an individual's mind performs a given task. This article argues that Pasquinelli's analysis contributes vital insights into AI's sociopolitical underpinnings and thus advocates for democratic technopolitical practices to reshape algorithmic governance. This article concludes with four recommendations from Pasquinelli's account for the development of Vietnam and the country's search for a vision of human-AI coexistence.*

***Keywords:** artificial intelligence; technopolitics; sociomorphic algorithms; general intellect; Marxian analysis; demystifying AI.*

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A stratagem called “Using the lazy to defeat the laborious” (以逸待勞) in Sun Tzu’s teachings proved effective and fit for him. Kingfisher then sought out a master of espionage in the Bird Village, known by the codename Intell-Bird. After discussing with Kingfisher, Intell-Bird developed a device to intercept and decode underwater fish conversations perhaps using a *modern voice recognition technology, powered by deep learning* translating them into Kingfisher’s language. This modern espionage technology allowed Kingfisher to perch silently on a branch, swooping to catch at least one right-sized fish at the right moment.

-In Taboo Fish, *Wild Wise Weird* (Vuong, 2025)-

1. Why do we need social histories rather than the technical history of algorithms?

The satirical tale featuring the imaginary Kingfisher character that ponders the wisdom of applying new AI technologies for catching fish is a good jump-off point to ask difficult questions regarding human lives in the age of AI. What is the difference between intelligence and wisdom? Can we have wisdom without relying on the analytical skills that are often associated with intelligence (Vuong & Nguyen, 2025)? Can technical designs, e.g., ones that are advocated by major contemporaries such as Stuart Russell (2019), sufficiently redress structural inequalities encoded in deployed AI systems? If artificial general intelligence (AGI) builds on data from dark social

histories (e.g., big-tech companies stoke consumerism and exploit cheap labor), could the AGI, albeit having all the intelligence in the world, still serve the best interests of human societies?

These questions highlight the entanglement of social and technical histories in contributing to the wisdom of understanding and wielding the power of one of mankind’s most powerful inventions: Artificial intelligence (AI). And this is where Matteo Pasquinelli’s *The Eye of the master: A Social History of Artificial Intelligence* (2023) makes a contribution. There exists a substantial literature charting AI’s technical genealogy from Alan Turing’s foundational formalizations *On Computable Numbers* and “*Computing Machinery and Intelligence*” through to contemporary assessments of risk, control, and capability (Turing, 1936; Turing, 1950). Classic technical histories and textbooks situate Turing’s work as the conceptual bedrock for later engineering. For example, Russell and Norvig provide a rigorous, canonical account of algorithms, knowledge representation, and learning architectures in their textbook that still shapes current practices (Stuart J Russell & Peter Norvig 2021). Contemporary philosophical and policy-focused treatments extend this technical lineage into normative debate: Nick Bostrom maps long-term existential trajectories and control problems for potential *superintelligence* (Bostrom 2017), and Stuart Russell argues for re-engineering AI around provably beneficial

objectives, i.e., the noble human-AI compatible goals (Russell 2019).

While these works collectively balance engineering detail with normative reflection, their successes in capturing the public imagination have created a dominance of engineering accounts, visions, and imaginaries of AI (Hanemaayer 2022; Ho 2024; Ho & Luu 2024). Critical scholars, especially those from the Marxist traditions, have sought to challenge this dominance: some researchers critique Bostrom’s long-termism as speculative and diverting from immediate harms, while others argue that technical textbooks understate the sociopolitical embedding of systems. For example, Hansmeyer (2022), in *Artificial intelligence and its discontents*, echoes Karl Marx’s famous 11th thesis of Feuerbach, contends

that AI criticism in the social sciences and humanities should transcend mere understanding of the technology, aiming instead to bring about actual changes in the ways societies carry “infusion, investment, and implementation” of AI (p.8). Table 1 provides a comparison of the technical and social history of AI via major texts and their core ideas. While scholars who focus on the technical histories of AI tends to promote self-overcoming and mythological narratives (e.g., overcoming the AI winter, the coming singularity, intelligence explosion, etc.), the works from critical scholars of AI have focused on how machines are socialized and reproduced social norms and dispositions (Airoldi 2021), how AI is critiqued from critical race theory (Hanemaayer 2022), the social and political economy of AI.

Table 1: A summary that compares the technical history and social history of AI via each’s major texts and their core ideas.

Aspect	Technical history	Social history / critical genealogy
Core focus	Engineering breakthroughs, algorithms, architectures, benchmarks.	Political economy, labour, power, and institutional embedding of AI.
Key milestones	Turing formal model & Turing test (Turing, 1936,1950); John McCarthy defined AI in 1955. Perceptron and connectionism (Rosenblatt, 1958); Hopfield networks (Hopfield, 1982) and Boltzmann machine (Hinton, 2025); Deep learning renaissance propelled by works of Hinton, Bengio, LeCun (Turing Award 2018); AlphaFold: Hassabis and Jumper’s Nobel-winning impact in chemistry.	Industrial automation and division of labour → statistics/psychometrics → cybernetics and “control revolution” → algorithmic governance. Pasquinelli (2023) traces algorithms from ritual/social practices → formalization → automation. Airoldi theorizes “machine habitus” (algorithms reproduce social dispositions) Hansmeyer’s edited volume collects social-scientific critiques across feminism, postcolonialism, and ethics.

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<p>Representative authors/texts</p>	<p>Turing (1936, 1950); Hopfield's (1982) paper on Neural Networks and Hinton's Boltzmann machine (machine learning architecture) in the 1980s (Hinton, 2025); Russell and Norvig's (2009) textbook; Bostrom's (2017) popular book on Superintelligence; Jumper and Demis Hassabis and AlphaFold publications (Jumper et al., 2021). Can you put the four mottos around the center circle of critical studies of AI and break each motto into two lines?</p>	<p>Pasquinelli(2023), The Eye of the Master (2023), on the sociogenic genealogy of AI; Hanemaayer(2022) (ed.)'s Artificial Intelligence and Its Discontents: on critical perspectives Airoidi(2021)'s Machine Habitus: Bourdieuan sociology of algorithms</p>
<p>Core concepts emphasized</p>	<p>Formal models (Turing machine, perceptron, backprop, energy functions in Hopfield nets), benchmarks (ImageNet), architectures (CNNs, transformers), and risk/control problems (Bostrom; Russell).</p>	<p>Sociogenic principle, labour abstraction, social algorithms, machine habitus, technopolitics, sociomorphism vs biomorphism. Pasquinelli centers Babbage's contribution to political economic critiques around general intellect; Airoidi centers learning machines as reproducing social habitus; Hanemaayer compiles interdisciplinary critiques of AI from feminism, postcolonial, and critical race.</p>
<p>Examples (concrete)</p>	<p>Hopfield network as associative memory (1982); deep learning breakthroughs enabling speech, vision, language models; AlphaFold predicting protein folding (Hassabis/Jumper).</p>	<p>Use-cases where algorithms mediate labour: gig-work platforms, psychometric hiring tools, predictive policing, CV-screening, and historical cases linking psychometrics/ industrial management to algorithmic governance.</p>
<p>Attitude to Marxist analysis</p>	<p>Often, sparse technical histories treat algorithms as neutral artefacts; some technical philosophers (Bostrom, Russell) discuss societal risk but not class/power analysis.</p>	<p>Marxist framings are central for Pasquinelli's work (labour abstraction, general intellect), and influential in Airoidi's sociological framing; Hanemaayer's volume includes diverse critical traditions (feminist, postcolonial, critical race) that often intersect with Marxist concerns about power and capital.</p>

Policy / normative prescriptions	Technical safety and control (Russell: human-compatible objectives; Bostrom: governance for superintelligence); AI-alignment problems; engineering-centric fixes.	Democratic technopolitics; reclaiming collective knowledge; regulation addressing social investment/infusion/implementation; cultural change in institutions (Airoldi (2021)'s ideas of codes reproducing social habitus); diverse cultural socio-technical imaginaries of AI (Cave & Kanta, 2023); preserving human agency in our entanglement with machines (Ho & Luu, 2025)
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As Table 1 has shown, amid the continued efforts of critical scholars to provide the counternarratives for techno-dominated AI discourse, *The Eye of the Master: A Social History of Artificial Intelligence*, authored by Matteo Pasquinelli (Pasquinelli 2023), is a philosophical study, through the lens of historical materialism, of understanding how social structures influence the development and integration of AI. Here, Pasquinelli argued that while studying the *technical history* of AI is important, social *history* must be required as well to understand the logic of the history of AI development and use. The reason for this is, argued Pasquinelli, at the end of the day, AI is the product of humankind, embedded within our capitalist-driven social structures. Its power over us does not come just from the highly advanced technical aspects themselves, but rather through our own social structures. In other words, AI applications can only have negative effects (e.g., the alienation of labor, manually or creatively or the erosion of social norms and relations, the degradation of the ecosystems

(Pham & Ho 2025; Roumbanis 2025a)), as they are taking the full advantage of the primacy of our social structures (Ho & Vuong 2025). Here, as most critical works on AI are in some ways a return to or intersecting with Marxist concerns about power and capital, Marxist framings are central for Pasquinelli's work (labour abstraction, general intellect).

For the author Pasquinelli, “the inner code of AI is constituted not by the imitation of biological intelligence but by the *intelligence of labour and social relations*” (p.13). Pasquinelli concisely stated how the original aim for a more effective management of labour turned into the networked, complex society increasingly driven by AI agents:

“Since the end of the twentieth century, then, the management of labour has turned all of society into a ‘digital factory’ and has taken the form of the software of search engines, online maps, messaging apps, social networks, gigeconomy platforms, mobility services, and ultimately AI algorithms, which have been increasingly used to automate

all the abovementioned services. It is not difficult to see AI nowadays as a further centralisation of digital society and the orchestration of the division of labour throughout society (p.16)”.

To advance his argument, Matteo Pasquinelli adopts Peter Damerow (1995)’s account of *archaeology of abstraction*, which shows that while appear purely disconnected from physical and social reality in its form, high-level abstract concepts (numbers, math symbols, etc.) results from a progressive scaffolding of meta-cognitive constructs that are fundamentally based on interactions with real-world demands of administrations, recording, calculations. He then traces the cultural and historical

progression of algorithms through three phases: from ancient embodied social practices (social algorithms) to formalized mathematical procedures (formal algorithms), to the industrial age’s electronic machines-implemented formal algorithms (*automated algorithms*). Utilizing the generative AI’s ability to manipulate mathematical symbols and tokens (H.-H. Nguyen & M.-T. Ho 2025; Weng et al., 2025), we used Hybrid Semantic Formalism, a hybrid language that maps natural language expressions into mathematic and logical functions, to express Pasquinelli’s categorization of social algorithms, formal algorithms and automated algorithms into mathematical and logic functions (Box 1).

Box 1: Recapturing Pasquinelli’s categorization of three types of algorithms in the social history of AI via Hybrid Semantic Formalism

Within Pasquinelli’s analytical framework, the three symbols ϕ , ψ , and η can be interpreted as philosophical metaphors representing the process through which society shapes machine intelligence.

Let:

- A = algorithmic form (social algorithms, abstract procedures)
- S = social structures
- R = ritual abstractions (e.g., Śulba geometry)
- F = formal mathematical model
- M = machine implementation

Pasquinelli’s categorization of three types of algorithm can be recaptured in logical formats as follows:

$$A = \phi(S, R) \text{ (social abstraction function)}$$

$$F = \psi(A) \text{ (formalization into mathematics)}$$

$$M = \eta(F) \text{ (automation in technological systems)}$$

Firstly, ϕ (phi) denotes the function of social abstraction: from labor relations, power structures, customs, and collective knowledge (S), society crystallizes abstract algorithmic forms (A). In other words, social life itself provides the foundational material for the formation of the “language” of algorithms.

Next, ψ (psi) signifies the function of formalization: these social abstractions are transformed into mathematical models and logical architectures (F). This stage involves their “framing” within formulas, parameters, and rules where society is rewritten in the form of computational symbols and structures.

Finally, η (eta) represents the function of embodiment: the mathematically formalized models are instantiated within technology, machinery, and technical infrastructure (M). At this level, the abstracted and mathematized society is tightly integrated with materiality: software, hardware, digital platforms, and AI systems.

Through these three levels, Pasquinelli emphasizes that algorithms and AI are not purely technical products but rather continuations of the process of social abstraction \rightarrow formalization \rightarrow technological embodiment. Consequently, AI should be understood as a “sociogenic” phenomenon: it carries the imprint of labor history and forms of social cooperation, rather than merely being a biomorphic simulation.

We should put Pasquinelli’s arguments into context here. Pasquinelli does not look at the social history of artificial intelligence with the tendency

of absolute determinism; he does not deny the role of technical development. Rather, he argues that in the case of AI, while it is true that technical development does not coincide with social history because it is based on the creativity of individuals, it is social history that gives out the material conditions for artificial intelligence to be created by choosing the right technology to fit with the social needs and narratives. It is through this approach that Pasquinelli chooses the right events of history to look at the timeline of AI.

2. From the Industrial age to the Information age: Connecting Babbage and Marx

Part I, *The Industrial Age*, lays out the theoretical foundations for the book as Pasquinelli traces the history of ideas related to the *abstraction of labour* through the writings of Hegel, Karl Marx, Adam Smith, William Thompson, David Ricardo, Thomas Hodgskin, etc (through Chapters 2-5). The key idea Pasquinelli aims to elucidate is the *political economy* of AI, tracing the historical political, material, and philosophical conditions that have culminated in the technology we know of today as AI.

A notable aspect of Pasquinelli’s analysis is his foregrounding of Charles Babbage’s two underexplored big ideas: The *labour theory of automation* and the *principle of labour calculation*. Pasquinelli explains how Babbage’s concept of automation is inspired by applying Adam Smith’s political economy in industrial production. And Babbage’s famous inventions, *The Difference*

Engine and Analytical Engine (those rival with Turing's machines in being the first computers), were conceived to mechanize calculation ("mental labor") in the same way factories mechanized manual labour. This aspect seems to be often neglected in the technical histories of AI.

This perspective positions Babbage's work as a foundational link between classical political economy and the development of machine intelligence. Pasquinelli contends: "Babbage's further contribution was to frame the labour theory of the machine – namely, that a machine imitates and replaces a previous division of labour – in terms of economic planning" (p.64). Then he remarks on the connection between Babbage's principles and Marx's surplus value:

"Ultimately, the Babbage principle represents a *machine theory of value* – that is, a model to mechanically represent and compute labour costs and capital investments. In a highly formalised way, it can be said that the labour theory of the machine and the machine theory of value together forms a technoeconomic principle according to which the machine is built by the division of labour in order to achieve a more accurate calculation and extraction of surplus value" (p. 65).

And the surprising turn is how Pasquinelli intricately weaves a treatment of Marx's concept of 'General Intellect,' prominently discussed in *Fragment of Machines* of the Grundrisse, into showing how AI can be viewed as the latest appropriation of the capitalist

system to encode and embody collective social knowledge (which includes not just conscious knowledge and unconscious, social, distributed, and spontaneous one) into machines. Pasquinelli states: "Babbage's two principles show that the general intellect of the Grundrisse evolves in Capital into a machinic collective worker (Gesamtarbeiter), almost with the features of a proto-cybernetic organism, and the industrial machine becomes a calculator of the relative surplus value that this cyborg produces" (p.96).

Here, we must be cautious in evaluating all the connections Pasquinelli made about Babbage and Marx. While Pasquinelli draws rich connections between Babbage and Marx, some critics (like Tarnoff (2025), in NY Review of Books) suggest that Pasquinelli under-provides empirical tracing of how Babbage's early designs influenced specific later algorithmic systems. Furthermore, while Marx did cite Babbage in the "Capital", the inferred continuity from Grundrisse to Capital related to the concept of General intellect was questioned. Regardless, Pasquinelli's works have revived the interest in the role of early pioneers of algorithms and computers, such as Babbage and Ada Lovelace, in providing technical backgrounds for ideas of the classical political economy thinkers to grow.

Indeed, Pasquinelli's integration of Marx's general intellect into the critical discourse on AI allows for a deeper appreciation of the socio-economic underpinnings of technological advancements, even in the most abstract

forms, such as *Generative AI*, *stock trading algorithms*, etc. This perspective echoes Marx's famous line: "life is not determined by consciousness, but consciousness by life" (Marx & Engels, 2001). Part I culminated in Chapter 5, aptly named "The Abstraction of Labour", in which Pasquinelli argued that the abstraction of labour in the industrial age is the foundation of technologies in the information age.

The book, then, transitions into part II, "The Information Age", where Pasquinelli critically examines the ideas on machine intelligence that are often associated with AI technologies as we know them today: for example, cybernetics (chapter 6), pattern recognition (Chapter 7), connectionism (chapter 8), perceptron (chapter 9). Pasquinelli told compelling stories of how theories of self-organization of organisms inspired AI; the McCulloch and Pitts's ideas of neural networks as the core of AI; Friedrich Hayek's theory of connectionism, and finally, the story of the percepticon. In the conclusion chapter named "The Automation of General Intelligence," Pasquinelli drives home the point that, at the end of the day, artificial intelligence is designed as the representation of humans' social relations, and it is up to us to decide how to use it.

3. Achievements of the book

First and foremost, Pasquinelli proposes a promising approach to the discussion of the 'ontology' of AI, especially when its definition among engineers and scientists is still a subject

for heated debates. While in engineering, artificial intelligence is often defined tautologically as the study of creating computing machines that can perform numerous tasks that we often think only humans can do (Ertel 2025; Stuart J. Russell & Peter Norvig 2021), Pasquinelli helps elucidate the socio-morphic nature of AI development and deployment. This contribution can be especially helpful for readers and analytical thinkers who look for social theories to understand and critique AI (Halpin 2025; D.-H. Nguyen & M.-T. Ho 2025; Roumbanis, 2025b; Torres-Martínez 2025).

Second, Matteo Pasquinelli exemplifies the application of Hegelian and Marxian dialectical logic to social history. Though might not be explicitly stated, the approach of *Eye of the Master* resembles a famous Marxian method to study history of society namely, the historial-logical method, which starts with identifying the 'embryo' of any historical logic: the simplest, universally observable element that embodies both its most developed material form and the internal contradictions driving its transformation (Lenin 1976; Майковский 1971). The starting point for Pasquinelli is that variations in the algorithmic structure of differing forms of machine intelligence can be traced back to the social and political economy of their time. Quoting Marx, he argued: "It is from the materiality of collective labour, from conscious and unconscious forms of cooperation, that extended apparatuses of machines emerge. Here, intelligence resides in the ramifications

of human cooperation rather than in individual mental labour. Machine intelligence mirrors, embodies, and amplifies the analytical intelligence of collective labour” (p.98).

Third, the book effectively deploys the metaphor of the eye of the master (in the factory or otherwise) to help readers appreciate critical ideas on human-machine relations and how they shed light on the rise of various AI instantiations. Drawing on theories from Marx to Babbage and beyond, the author suggests that the history of AI is intertwined with the evolution of labor analysis, psychometrics, and the desire for control revolution. In this journey, seemingly purely technical concepts such as algorithms, self-organization, cybernetics, perceptron, etc. are unpacked to reveal how capitalist technological developments and deployments are never truly biomorphic (i.e., aiming toward mimicking natural intelligence), but rather sociomorphic (i.e., aiming toward encoding (tried and true) forms of social cooperation and collective intelligence). Critically, Pasquinelli noted that the aim of capitalist developments toward automation are about controlling social cooperation and collective intelligence: “The destiny of the automation of intelligence cannot be seen as separate from the political drive to autonomy: it was ultimately the self-organisation of the social mind that gave form and momentum to the project of AI” (p.143, Chapter 6).

Finally, the book can be appreciated as a whole or in parts, depending on

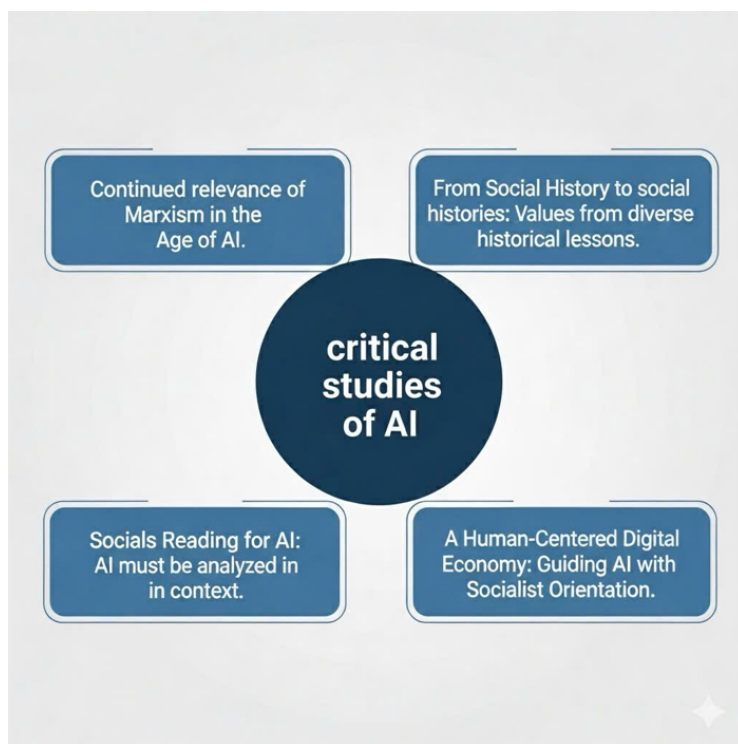
the readers. Pasquinelli successfully tells a social history of AI not as a linear progression but rather as a complex and organic transition where each of the elements has their own story, but in the grand scheme, they are historical and material condition that serves as an achievement of the system of logic, surpassing their own internal contradiction to merge with other systems. As Pasquinelli himself explains, each chapter should be treated not as a part of a process, but as its own story (p.16).

4. Implications for labor in the age of generative AI: Some recommendations for Vietnam

Pasquinelli’s hypothesis regarding the influential role of social structure and historical context in shaping social algorithms, culminating in current advanced AI systems, could offer both the theoretical and practical guidelines of Vietnam’s development within a Marxist–Leninist framework, particularly in the current period. Between 2024 and 2025, the Communist Party of Vietnam issued four resolutions focusing on key development areas for the upcoming period, one of which, Resolution 57-NQ/TW, emphasizes science and technology, highlighting innovation and creativity as essential human resources (Politburo of the Communist Party of Vietnam, 2024). The discourses surrounding the AI industry, its implementation, and development in Vietnam have gained unprecedented attention (Reuters, 2024). Within this context, Pasquinelli’s hypothesis offers salient insights that

may positively influence this dialogue. In Figure 1, we highlight the four major implications for the Vietnamese context: the continued relevance of Marxist thoughts in the age of AGI, the move

from a social history to social histories of AI, culturally diverse ways of social readings of AI, and guiding the AI-driven digital economy with a socialist orientation.



First, *Pasquinelli demonstrates a creative application of Marxist theory.* While adhering to the Marxist tradition of critically analyzing the social conditions that give rise to AI through multiple social theories including Marxism he avoids dogmatism by not rigidly applying Marx’s texts in all contexts nor relying on Marxist authority alone. Instead, Pasquinelli employs Marx’s analysis appropriately, particularly drawing on Marx’s critique of capitalist production utilizing machinery for profit

through exploitation, as well as Marx’s examination of modern automatic machines through Charles Babbage’s principles. Notably, this analytic dimension has often been overlooked by Vietnamese scholars studying Marx’s critique of capitalism. This underscores the continuing relevance of Marxism and affirms its value as a guiding framework for Vietnamese scientists and policymakers. Concurrently, it highlights the extensive legacy of Marx’s work, prompting Vietnamese academia to more

deeply engage with his writings for the coming wave of advanced technologies, such as Generative AI robots and agents, AGI, autonomous vehicles, quantum computing, digital twins, etc. Many of these technologies have been listed as key strategic technologies for Vietnam in the new era.

Second, *Pasquinelli's exploration of AI's social history reveals the intrinsic linkage between algorithms, their coding, and society.* Understanding a society's or civilization's history, in all of its humanities, offers crucial insights into developing AI that genuinely benefits humanity (Premise 3 in Ho & Vuong 2025). However, Pasquinelli emphasizes that such historical grounding should not be generalized from a single context but must be anchored in the specific, concrete histories of distinct regions. Since histories vary by place, each requires its own timeline, content, and often unique objective laws. Consequently, there is no universal experience suitable for creating social algorithms; instead, multiple diverse contexts must be considered. Put succinctly, we can and should move from a social history to diverse social histories of AI. For Vietnam, as the country is in the process of building a vision for human-AI harmonious co-existence while navigating complex techno-geopolitical tensions (Ryan Hass 2025), being mindful of and learning from diverse social histories of AI can offer valuable lessons going forward into the new era.

This leads to a third implication: *a focused analysis of the particular social*

structure underlying the AI algorithm's design is imperative, i.e., we need to develop a culturally sensitive social reading of AI. When developing new AI systems or adopting the latest advances in generative AI, it is essential to understand and critically assess the social structure's advantages and disadvantages. Pasquinelli's work vividly illustrates how embedding social structures within AI can perpetuate the ills of rampant capitalism. Empirical studies support this assertion, showing that socially encoded AI often exacerbates the precariousness of workers (manual, digital, and others), the system's most vulnerable group (Liu 2025; Moore & Robinson 2016; Nuñez 2025). For Vietnam, this presents a vital lesson: leveraging AI for humanity's benefit requires addressing the internal contradictions of the social structures embedded in AI—an often overlooked aspect due to the fact that its consequences tend to manifest long after adoption.

Finally, as we can draw from Pasquinelli's ideas, how to live well and ethically with increasingly more powerful AI systems is still an open question. Hence, it presents Vietnam with a distinct opportunity to emerge as a pioneer in AI research and application. By comprehending AI as a socially constructed phenomenon, Vietnam can formulate policies that promote equitable work and reward systems as foundational elements for AI algorithms. In a global context dominated by capitalist and often Silicon Valley-centric interests, Vietnam's socialist orientation

constitutes a strategic advantage to guide the growing AI-driven digital economy. The challenge now lies not merely in discussion but in the substantive implementation of strategies that realize this potential (Ho & Luu 2024).

5. Conclusion

While having achievements, *Eye of the Master* left us with questions to answer. Firstly, according to Damerrow and Pasquinelli, the ability of learning through the practical interactions of an agent is the source of mental images of the object. These mental images have a tendency to generalize themselves more to become abstract categories. This interpretation is just one of the forms of the abstracting process. Many scholars have argued that for Marx, abstraction is not a mental image, but an actual objective aspect of reality being discovered by agents (Ilyenkov, 2017), and the process is not about generalizing, but more likely discovering the relation of fundamental and less fundamental concepts (Marx, 1993). Secondly, while understanding the role of agents

as the source of abstracted concepts, Pasquinelli does not fully explain how an agent's life can affect the system of abstracted concepts. This makes an impression of the overwhelming power the system has over agents, while there is indeed room for finding human agency within our networked entanglement with machines (Ho & Luu 2025).

In summary, *Eye of the Master: A Social History of Artificial Intelligence* by Matteo Pasquinelli is an exceptional book. Instead of being fully against AI in itself, Pasquinelli goes further and directly touches on the underlying dynamic of power of the structure in designing and coding AI's algorithm. The book is a powerful reminder of the sociogenic principle, which emphasizes that social relations and labour processes constitute technical systems, and "the first step of technopolitics is not technological but political" (p.218). This attempt alone deserves credit and makes a great contribution to the contemporary critical discourse of artificial intelligence.

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