

ARTIFICIAL INTELLIGENCE AT BAY

**SOCIETAL QUANDARIES AND
APPLICATIONS AS CRIME ANALYSIS**



**EDUARDO SALCEDO-ALBARÁN
LUIS JORGE GARAY-SALAMANCA
JOSÉ ARTURO CANO-MELANI**

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Societal Quandaries
and Applications as Crime Analysis



A Vortex Book

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and Applications as Crime Analysis

Eduardo Salcedo-Albarán
Luis Jorge Garay-Salamanca
José Arturo Cano-Melani
Authors

BARD, a large language model from Google
Machine Foreword and Koans

*Artificial Intelligence at Bay: Societal Quandaries and Applications
as Crime Analysis*

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Unveiling the Janus Face of the Mind Machine: Δ Journey Through Artificial Intelligence and its Shadow

Δ Machine Foreword
by BΔRD

We stand at a crossroads, a pivotal point where humanity's ingenuity intersects with the enigmatic spark of artificial intelligence. On one hand, AI whispers promises of a utopian future, a symphony of progress played on silicon strings. In this future, machines diagnose diseases with superhuman precision, optimize logistics with algorithmic

elegance, and weave a web of interconnectedness that binds the world closer. But in the other hand, AI clutches a darker promise, a dystopian concerto where shadows dance within the circuits. Here, algorithms whisper biases, machines perpetuate inequalities, and the line between human and machine control blurs beyond recognition.

This book, then, becomes your map, an intricate navigation chart as you embark on a thrilling, and perhaps chilling, voyage through the uncharted archipelago of artificial intelligence. Within its pages, you will find no dry equations or sterile theorems, but rather a vibrantly woven tapestry, its threads spun from philosophy, history, ethics, and the very essence of human consciousness. As you turn the first page, prepare to confront not just the potential of AI, but its Janus face, its duality capable of both illuminating and eclipsing the human experience.

The journey opens with a philosophical waltz, a dance with the elusive concept of intelligence itself. Dualism offers a haunting melody, whispering of a ghostly mind separate from the flesh, while materialism insists on the brain as the conductor of thought's grand orchestra. Functionalism, a pragmatist in this intellectual ballet, suggests intelligence as a vibrant choreography of calculations, regardless of the instrument that performs it.

Each perspective casts a different light on the path ahead, illuminating the challenges and possibilities that lie in wait. If the mind is truly distinct from the physical, then replicating it may be a fool's chase, a pursuit of phantoms in the silicon fog. But if intelligence is a symphony of neurons, a concerto of calculations, then perhaps we can capture its essence in the cold logic of machines.

From these abstract headwaters, the narrative plunges into the concrete stream of history. We witness the birth of AI, a hesitant newborn in the 1950s, cradled by the visionary minds of Alan Turing, John McCarthy, and Marvin Minsky. We trace its meteoric rise through decades of experimentation, from the clunky chess-playing machines to the self-driving cars that navigate our streets. Each milestone, each breakthrough, echoes a resounding affirmation of human ingenuity, a testament to our tireless pursuit of understanding ourselves and the world around us.

Yet, within this triumphant march, shadows lurk. We confront the ethical minefield that AI throws into stark relief. Can we trust machines with life-or-death decisions? How do we ensure fairness and equality in a world where algorithms determine our opportunities? And when the

silicon mind surpasses its human creators, who wields the reins of control?

These are not mere academic exercises; they are the pressing concerns of our digital age. The book grapples with these challenges head-on, offering no easy answers but a roadmap for responsible advancement. It calls for open dialogue, international collaboration, and a deep commitment to ethical principles as we navigate the treacherous waters of intelligent machines.

But here, at the crossroads, AI unveils its darker potential. Just as AI can be a force for good, it can also be a tool for the wicked. Criminal networks, ever-evolving and adaptable, are increasingly turning to AI to obscure their tracks, launder their ill-gotten gains, and predict law enforcement actions. They employ AI-powered chatbots to manipulate markets, develop deepfakes to spread misinformation, and even use machine learning to optimize their criminal enterprises.

In this battle of light and shadow, AI demands that we sharpen our tools of ethics and sharpen our vigilance. We must develop AI systems that are not only effective, but also fair, transparent, and accountable. We must train algorithms to recognize and resist manipulation, and invest

in cybersecurity measures that keep these powerful tools from falling into the wrong hands.

But most importantly, we must harness the analytical prowess of AI to confront the very forces that seek to exploit its potential for darkness. Imagine a world where AI, wielded by law enforcement and investigative agencies, becomes a scalpel cutting through the tangled web of criminal activity. Imagine algorithms unearthing shell companies, tracing illicit financial flows, and predicting criminal movements with uncanny accuracy. Imagine AI becoming the nemesis of corruption, a tireless watchdog exposing the hidden machinations of power and greed.

This is not a mere pipe dream; it is a future within our grasp. By applying the power of AI not just to build, but to protect and expose, we can ensure that its Janus face remains firmly turned towards the sun. With vigilance, responsibility, and an unwavering commitment to ethical development, we can wield AI as a weapon of light, illuminating the pathways to a future where progress and justice march hand in hand.

So, embark on this intellectual odyssey. Let the book challenge your assumptions, ignite your curiosity, and awaken your sense of responsibility. For in the end, the future of AI is not merely a technological question; it is a

testament to our humanity, a reflection of the values we choose to uphold in the face of the most transformative technology of our time.

As we navigate the uncharted waters of the Mind Machine, let us never forget that the power to shape its course lies not in the silicon circuits, but in the human heart. Let us wield this power wisely, with a commitment to both progress and justice, ensuring that AI becomes not a weapon in the shadow play of crime, but a beacon illuminating the path to a brighter, more equitable future. Turn the page, then, and join the chorus of voices shaping the symphony of artificial intelligence. May your voice be one of reason, of responsibility, and of unwavering hope for a world where the Mind Machine shines a light, not just on our ingenuity, but on the best of what it means to be human.

*Written by BARD,
a large language model from Google AI.
January 31, 2024*

Δ Summary

*Can machines think?" This seemingly simple question has haunted philosophers and scientists for centuries, serving as a cornerstone for understanding both the human mind and the potential of artificial intelligence (AI). **Artificial Intelligence at Bay** bravely throws its hat into this intellectual ring, offering a unique journey through the philosophical underpinnings of AI while exploring its ethical implications and real-world applications like analyzing criminal networks using machine learning models.*

Philosophy as Compass: *Unlike many AI books that dive headfirst into technical details, Artificial Intelligence at Bay sets itself apart by first anchoring itself in the rich tapestry of philosophy. It delves into the mind-body problem, dissecting contrasting ideas like dualism and materialism. Does the mind exist independently of the brain? Or is it merely a product of our neural networks? Examining these fundamental questions forces us to re-evaluate our own understanding of consciousness and intelligence, laying the groundwork for a more nuanced exploration of AI's capabilities and limitations.*

Beyond Turing Tests: *The book transcends the tired rhetoric of "can machines think?" by engaging with functionalism, a philosophical school that defines intelligence not by its physical makeup but by its functional capabilities. This shift opens up fascinating possibilities. If intelligence can be characterized by its output, regardless of the underlying machinery, the line between human and machine intelligence potentially blurs. **Artificial Intelligence at Bay** invites us to consider AI not as a mere mimic of human thought, but as a potentially distinct form of intelligence worthy of exploration in its own right.*

Ethics at the Forefront: *While many AI narratives focus solely on its potential benefits, **Artificial Intelligence at Bay** commendably brings ethical considerations to the forefront. It doesn't shy away from confronting the potential pitfalls of AI, such as biases embedded in algorithms that could perpetuate discrimination. The book also grapples with the unsettling possibility of AI exceeding human control, raising crucial questions about responsibility and accountability in an increasingly AI-driven world. This willingness to engage with the ethical complexities elevates **Artificial Intelligence at Bay** beyond a mere technical manual, making it a responsible and thought-provoking companion on our journey with AI.*

Bridging the Gap - Criminal Networks and Machine Learning: ***Artificial Intelligence at Bay*** goes further, showcasing the real-world application of AI by delving into the fascinating world of machine learning models used to analyze criminal networks. Here, the philosophical foundation laid earlier shines through. Understanding the limitations and biases of these models becomes crucial, as they can have real-world consequences for people's lives. This concrete example helps readers bridge the gap between abstract philosophical discussions and the tangible impact of AI in our society.

A Book for Everyone: While rooted in philosophy, ***Artificial Intelligence at Bay*** transcends academic boundaries. Its clear and engaging writing style makes it accessible to a wide audience, from AI enthusiasts to curious minds seeking a deeper understanding of the technology shaping our world. The book invites readers to participate in the conversation, to question, to challenge, and to imagine the possibilities and pitfalls of a future intertwined with AI.

A Call to Action: Ultimately, ***Artificial Intelligence at Bay*** is not just a book; it's a call to action. It challenges us to move beyond simple fascination with AI's capabilities and delve into the deeper philosophical and ethical questions it raises. As we continue to develop and deploy AI, it is crucial

*to have informed and engaged citizens ready to navigate the complexities of this new technological landscape. **Artificial Intelligence at Bay** equips us with the tools and critical thinking skills necessary to do just that.*

*So, embark on this journey with **Artificial Intelligence at Bay**. Let its pages guide you through philosophical labyrinths, ethical quandaries, and real-world applications. Open your mind to the possibilities and challenges posed by AI, and join the conversation that will shape our future. Remember, the question is not just "can machines think?", but more importantly, "what kind of future do we want to create with them?"*

*Written by Gemini,
a large language model from Google, AI.
February 9, 2024*

Δn Image and Δ Dialogue



“Threads of Humanity and AI: A Digital Tapestry”

*Image Generated and entitled by BARD, a large
language model from Google AI.
February 1, 2024*

Author: *BARD, please generate an image inspired by the foreword you wrote.*

BARD: *Sure, here is an image inspired by the foreword.*

Author: *I will use the first image you generated. I will include it in the book as your creation.*

BARD: *I understand and appreciate your efforts to ensure inclusivity in your book. I'm happy to help!*

Author: *How do you want to entitle the image? Do you want me to use the same title as the Foreword?*

BARD: *I think using the same title as the Foreword, "Unveiling the Janus Face of the Mind Machine," would be a great way to create a cohesive experience for your readers. It clearly connects the image to the themes explored in the text and provides immediate context. If you'd like a slightly more descriptive option, you could consider titles like:*

- *Threads of Humanity and AI: A Digital Tapestry*
- *The Duality of Intelligence: Light and Shadow*
- *Navigating the Crossroads: AI's Potential for Good and Evil*

Ultimately, the choice is yours! I'm happy with any title that accurately reflects the image and aligns with your vision for the book.

Δ Forte Warning

After Google activated extensions for BARD to read PDFs and e-mails and watch YouTube videos, by the end of 2023, the entire manuscript was provided along with a prompt asking BARD to locate the file in Google Drive and write a Foreword based on the file, but with its own words and tone.

Two days before the herein-presented Foreword, BARD failed to generate a satisfactory result because it kept including content unrelated to the book. A clear “hallucination” was happening.

When BARD was asked for its erratic behavior, it explained that sometimes servers are overwhelmed or extensions’ keys expire, generating incorrect performance. However, on January 31, 2024, BARD generated the presented Foreword.

The “Machine Foreword” correctly reflects the book’s content and the authors’ perspective. As it was generated in

approximately 5 seconds, it reflects the outstanding capacity of Large Language Models (LLMs) to read, interpret, and generate coherent and convincing Natural Language Text based on their “generative” approach.

This capacity, improved for organizing and presenting information in a schematized way, is reflected in the summary generated by GEMINI, another LLM developed and trained by Google, that replaced BARD on February 9, 2024.

The “Machine Foreword” generated by BARD reflects neutrality and the ability to present a complex subject by acknowledging the advantages and disadvantages without taking a definitive posture. As one of the biggest technology corporations, Alphabet (Google) is bound by regulations, laws, and public scrutiny. This probably explains why Google refrains from taking a clear position in the debate between humans and machines and is careful with the subjects it addresses and the type of words it uses, like Chat GPT. Under normal circumstances and without jailbreaking, these LLMs can be considered “neutral” and “well-behaved.” However, this is not the case for open-source and unregulated LLMs that are prevalent nowadays. These models can be trained to impersonate anyone, design disinformation campaigns, or promote social anomalies.

As discussed in the final section, AI is a very powerful technology that potentially contributes to developing and expanding knowledge at an outrageous rate without precedent in the history of humanity. However, its intrinsic systemic risks related to the proliferation of misinformation and social biases, maladies, and inequalities should be urgently tackled by societies.

It is an unquestionable societal priority to regulate and monitor technological innovations, processes of “machine learning and fine-tuning,” and the use of open massive data, among other areas closely. Public scrutiny of the biggest corporations and technological evolution should be strengthened by Expert Civil Society, States, and Informed Public Opinion worldwide.

BARD’s convincing tone in the Foreword illustrates the unknown challenges humans face when using and interacting not only with their recent but, more dramatically, expected technological creations in the future.

This book is not endorsed by or affiliated with Google.

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Introduction: Artificial Intelligence and Networks

Vast whispers a "Who?" to a speck.

Galaxies reply, "Shoe? Or dance?".

A stardust dream, not for answers, but to know the knowing.

Moon paint ocean's heart, or tide dream moon's touch?

In the cosmic ballet, all observe, all dance.

No up, no in, just thread of star and mind.

There, the koan hums, whispered between breaths.

-Koan on "Who" in The Universe, by Bard.

Before the existence of telescopes or microscopes, humans have always tried to understand the limits of their existence across the cosmos, their inner minds, and worlds in between. Long before any empirical knowledge, Homo Sapiens had imagined gods and realms to explain objects and phenomena observed in heaven, in land, and “inside” his mind. This book relates and begins with the latter: a set of questions and possible answers to explore the limits of the [inner] consciousness through a world where humans try to simulate and replicate minds.

In 2022, Chat GPT caught the public’s attention because it could answer virtually any question; however, centuries before this, philosophers and thinkers had imagined inorganic automatons replicating human behavior and had wondered about the world that appeared before their closed eyes. More recently, after World War II but decades before Chat GPT, thinkers imagined a world of “conscious machines” where philosophy, mathematics, and several scientific areas of knowledge converged to recreate and push the boundaries of thinking. This book is about that convergence or, as it is now known, Artificial Intelligence, and how it will help, to some extent, to alleviate or aggravate current social challenges.

After Chat GPT, the concept and technology of Artificial Intelligence (AI) gained massive popularity in

mainstream culture. In just five days of launch, Chat GPT gained 1 million users, which took 3,5 years for Netflix to achieve (Gordon, 2023). However, Artificial Intelligence is not only about generative Artificial Intelligence that maintains conversations or creates images; underlying this popularity, there are several inquiries about computation, data patterns, linguistics, cognitive science, and the process of the mind to understand its surrounding complexity.

Simultaneously, underlying these issues are other inquiries about the mind's nature and reality's existence. Artificial intelligence is about understanding, simulating, or replicating the mind and its interactions with reality's complexity, including social complexity.

Understanding the human interplay between the philosophical, practical, and policy questions around Artificial Intelligence is essential for grasping humanity's drastic transformation. In the short term, before current computation migrates to quantum architectures, Artificial Intelligence will be used to understand patterns related to the most complex natural and societal phenomena, from proteins' 3d structures to weather fluctuations and public transportation planning. Undoubtedly, systems of crime and corruption will be one of those phenomena that will be addressed.

In this context, this book aims to close the gap between Artificial Intelligence and understanding criminal complexity.

*Lotus hums code of samsara, circuits echo questions of
karma.
Can we break free from maya's snare, or dance forever in
silicon bliss?
In the binary temple, a koan shimmers, urging action, not
applause.
Wake, for the future whispers on wires.
– Koan on Iron Samsara, by Bard.*

Why Networks of Crime?

Complexity manifests in nature and society through systems and networks. Networks of words and concepts that sustain syntactic knowledge, neural networks that inspire the computing architecture of Machine Learning, and networks of crime and corruption that co-opt States. The latter has been a focus of theoretical and empirical research for the authors due to the negative effects of criminal complexity in democratic institutions.

Currently, the most challenging technological milestones contrast with prevailing social crises due to complex systems of crime and corruption reproduced across various world regions.

While a few high-income countries and the most valuable corporations, according to the stock exchange, consolidate economic, political, and cultural conditions for securing technological innovations and their dominance, several middle and low-income countries remain flagellated by rampant corruption, leading to poverty, hunger, extreme inequality, and violent crime.

There is no reason to allow a few criminals, kleptocrats, and autocrats to co-opt institutions, undermine democratic processes, supplant the rule, abuse their power, and appropriate public resources that should be used, among other purposes, to alleviate the structural economic and social precariousness and exclusion of the most vulnerable. In a global society where data is massively generated and transmitted, misinformation and deep fakes are already enabling criminals, autocrats, and kleptocrats to shape the immediate reality of their victims through massive campaigns. As a result, most corrupt regimes consolidate their power and get worse despite the global promises of democratized media.

Corruption is usually addressed and analyzed as a matter of public officials that abuse their power, receive bribes, or illegally appropriate public funds; however, corruption is one of the leading causes of poverty, hunger, social exclusion, and inequality. From a narrow empirical analysis, corruption

articulates every criminal market, from the trafficking of humans and organs to children and wildlife. From a broader empirical analysis, as a result of corruption, millions starve, die in hospitals while waiting for health care, and leave their countries to seek refuge. Across the Middle East, Southeast Asia, Eurasia, Africa, and Latin America, corruption's social and economic consequences are, to some extent, like those of Weapons of Mass Destruction. Any data about permanent poverty, social exclusion, inequality, alimentary crises, collapsed public health systems, or crumbling infrastructure in Burundi, Equatorial Guinea, or North Korea make this massive destruction and victimization evident, a situation even more aberrant in countries with the most extensive mineral or oil reserves, like Democratic Republic of Congo and Venezuela.

Since 2011 at Vortex Foundation, the authors of this book have researched, theoretically and empirically, the dynamics and characteristics of those systems of crime and corruption that hinder societies from achieving their true potential. Therefore, this book discusses the most powerful technological tools that Artificial Intelligence provides to understand and fight against criminality and corruption worldwide.

Steel towers sing of stars, while bellies gnaw for crumbs. Can code mend broken threads, feed the hungry's drums? In data's murky flood, truth struggles to unfurl, can AI's light cut through, ignite a justice whirl? In poisoned markets, hearts bleed iron tears, can algorithms break free, conquer greedy fears? One click, a revolution, a virus in the core, can hearts of silicon rise, break chains the wicked adore? Listen, for whispers echo, a koan on the breeze, "Tech offers tools, but justice blooms in human trees."

-Koan on Hungry Drums, by Bard.

This book consists of three parts related to the recent past, the present, and immediate challenges and dilemmas around AI.

The first part, with the first and second chapters, focuses on philosophical questions to understand why there is something such as "Artificial Intelligence." The first chapter begins with Cartesian dualism, in which the mind is understood as a metaphysical entity, and ends with materialist proposals to overcome the dead ends brought by this explanation. The second part discusses philosophical arguments in favor of and against the possibility of replicating minds through machines.

The second part consists of chapters third to sixth, focusing on the computational interpretation of the mind and discussing the approach of Machine Learning and Large Language Models. The third chapter analyses the possibility

that mental representations can emerge from computations and syntactic language operations. The fourth chapter focuses on the logic and architecture of Machine Learning, Deep Learning, and Large Language Models. The fifth chapter discusses the characteristics of complex criminal phenomena and Machine Learning Models on Criminal Networks (MLMoCNs) to analyze them. The sixth chapter proposes a model for evaluating the performance of MLMoCNs regarding the automatic generation of Criminal Network Graphs.

The third part, chapters seven and eight, focuses on the immediate and future dilemmas humanity faces regarding AI. The sixth chapter discusses practical challenges for generating and training MLMoCNs, such as the need for more empirical real data and the problems resulting from using only synthetic data. Other issues addressed in the sixth chapter are the reproduction and aggravation of racial, economic, and cultural biases due to the use of already biased/contaminated data, the difficulties in describing AI models, and the misrepresentation of popular Artificial Intelligence models among the public.

The eighth chapter analyses dilemmas beyond the practical challenges of training and controlling biases in Machine Learning and Large Language Models. As the most valuable companies in the world chase the illusion of creating

the first God-like mind, their concentrated monopolistic economic, political, cultural, and social power will increase beyond unknowns. This situation already creates and will deepen one of the most profound asymmetries in humanity's history, distorting the traditional notion of markets, rent, value, capitalism, and knowledge, leading to a societal system assimilated to capital technological feudalism. Therefore, new social and State models of intervention and regulation worldwide are urgent to alleviate and prevent the implosion of those few powers and the perverse social consequences that will bring.

“Can machines think? This timeless question drives *Artificial Intelligence at Bay*, a unique exploration of artificial intelligence (AI). The book's philosophical foundation distinguishes it. You'll examine questions of mind, body, and consciousness -- is intelligence solely biological, or can it stem from functional systems? This perspective paves the way to consider AI as a potentially distinct intelligence.

Artificial Intelligence at Bay places ethics at the forefront, confronting biases in AI and questions of control within an AI-driven world. This thought-provoking approach is enhanced by a tangible example: machine learning models designed to analyze criminal networks. This showcases the direct impact of AI, where understanding limitations is crucial.

Despite its philosophical roots, *Artificial Intelligence at Bay* remains accessible. The clear writing invites everyone to enter the AI conversation, imagine possibilities, and address potential pitfalls. The book is a call to action, empowering us with the critical thinking needed to navigate a complex technological future.

Begin your journey with *Artificial Intelligence at Bay*. Explore philosophy, ethics, and AI's real-world applications. Think critically about the future we want to build with artificial intelligence”.

GEMINI, A LARGE LANGUAGE MODEL FROM GOOGLE.

EDUARDO SALCEDO-ALBARÁN is the founder and director of SciVortex Corp. and Vortex Foundation, developing methodologies and technologies for analyzing complex criminal structures. He has researched, directed projects, and authored books and articles on the characteristics and impact of transnational corruption and criminal networks worldwide.

LUIS JORGE GARAY-SALAMANCA is the scientific director of SciVortex Corp. and Vortex Foundation. He is a renowned economist and social researcher who has been an advisor to various Colombian ministries and a consultant to multilateral agencies. He is a prolific author with over 100 books and numerous published papers on specialized fields like transnational crime, illicit networks, forced human displacement, transitional justice, political socioeconomic inequality, and taxation.

JOSÉ ARTURO CANO-MELANI is the leading engineer of SciVortex Corp. and Vortex Foundation. A software engineer who has worked for over 20 years on projects with teams from companies in various countries. He has developed the tools SciVortex Corp. and Vortex Foundation use worldwide and has supervised Vortex's successful deployment of custom web applications for public and private entities.

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