

# The 5th Dawn

The future with AI is not written;  
its legacy lies in our hands.

#AlwithPurpose #AlforBetterWorld



Onur Koç and Demir Koç



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### THE 5th DAWN

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# The 5th Dawn

Onur Koç and Demir Koç

DOĞAN KİTAP  
ÖRNEKTİR

# The 5th Dawn

#AIwithPurpose

#AIForABetterWorld

What makes us human? Can we defy mortality?

What is AGI? How close are we? What lies beyond AGI?

Can GenAI / LLMs lead us to AGI?

Thirst for compute power, energy and water

Terrestrial AI vs Orbital AI!

How can AI change our lives and industries with purpose?

Is a fully self-sustainable life possible through technology?

Why were recent Nobel Prizes given to scientists who work on / with AI?

How can we use AI to save the planet?

Definition of a company and leadership is changing!

Will AI replace us? Top 10 skills needed in an AI-infused world

What if AI goes wrong?

When AI meets Robotics! What is speciation?

When AI meets quantum

How is AI transforming cybersecurity?

How do we design-develop-deploy AI responsibly?

How should Nations build AI strategies and measure success?

What is digital sovereignty?

Utopia vs Dystopia The choice is ours

The search for answers begins here, inside these pages.

I dedicated this book to my son  
who is the source of my imagination.

DOĞAN KİTAP  
ÖRNEKLER

We are on the threshold of a new chapter in human evolution, where our alliance with Artificial Intelligence and our pursuit of immortality converge to shape the destiny of tomorrow. The future is not written; its legacy lies in our hands.

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# Foreword

I have dedicated 15+ years to advancing AI technologies, contributing to AI-infused innovation projects across a variety of industries. I've been collaborating with CXOs, advising governments on national AI strategies, and mentoring startups. As we enter the fifth dawn of human evolution, a turning point that may prove to be one of the most profound milestones in our species' history, I feel a deep responsibility to play my part by empowering others with knowledge about the transformative power of AI and how we should use it. So, I set out to create a reference book designed to answer the most pressing questions and concerns surrounding AI, offering clarity and insight with data. More importantly, I hope to inspire people to see how we can harness these technologies with the purpose of creating a better world, or worlds, for future generations. Together, we have the power to shape the future.

I start the book with our dreams; then I talk about where human creativity and imagination come from. What differentiates us from AI-infused programs and machines? Why do our unique human traits like CURIOSITY flourish at a young age? Then, the book reflects on our journey across time. What are the last four defining ages we've lived through, and how have they shaped who we are? How have we created tools using our curiosity and imagination to amplify our capabilities beyond our limits? Why shouldn't acquisition of wealth be the driving force of humanity any more? And what is our ultimate quest towards immortality?

We are at the beginning of the 5<sup>th</sup> era of human evolution; and AI technologies are advancing at warp speed, reshaping the very fabric of our life on this planet. Yes, we are tool makers, but this time it is different. This time, the tools are beginning to think with us. It's not just another leap forward; it's a rediscovery of what it means to be human.

The book continues with the past and future of AI: why have the last two decades been a turning point for AI from my point of view? What were the key breakthroughs that removed the barriers for AI? What was the impact of Covid, and then the rise of Generative AI and GPUs?

AI innovation from Generative AI to Artificial General Intelligence (AGI) is at the center of many discussions. The book delves into some key questions: What is AGI? What is the importance of common sense and lack of a unified theory of human intelligence? How far are we from achieving AGI? It also explores critical challenges, such as the growing need for computing power, how AI models are learning to think like humans, as well as the thirst for sustainable energy and water. Perhaps the most intriguing question is this: what lies beyond AGI? The book then takes you through a journey to envision how AI technologies can help us shape a better world, using specific examples from our personal lives, like fundamental AI companions and industries. Imagine a future with Harvard-quality personalized education tailored to everyone for free. Or imagine transformative personalized healthcare solutions that diagnose diseases at an early stage and cure them. Imagine how AI revolutionizes agriculture and creates scalable and sustainable solutions to eradicate world hunger; smart city governance and citizen services that transform how cities and people connect. Not only factories, but how the products they manufacture become smarter. I look into why AI-infused eco-conscious product design must be a priority. I explore topics ranging from boundary-less, personalized financial services to empower every individual on the planet, to revolutionizing the machinery of governments to make smarter and more anticipatory decisions; or AI becoming a trusted first responder partner, helping us save lives before

the next natural disaster strikes, all the way to breaking barriers for individuals with disabilities.

The book underscores the urgent need to harness AI in solving our planet's most pressing challenges, from climate change and water scarcity to biodiversity loss. It also shares how we as a family demonstrated that a fully sustainable way of life is no longer a distant dream, but a living reality powered by technology through our family project. And it answers why today's Nobel Prizes increasingly honor scientists and researchers who work on / with AI?

I then answer critical questions shaping our future: Is AI replacing us or reshaping us? What is its impact on the job market? How is the definition of a company changing? Why does the purpose of jobs need to change? What are the top 10 skills we need to invest in to get ready for an AI-infused world?

AI holds immense promise, but it's not without risks. Across the globe, engineers, researchers, and world leaders are voicing growing concerns about the risks emerging from advanced AI systems. The book talks about the types of risks we should be paying attention to. And more importantly, it delves into solutions we can design to ensure that AI serves humanity.

The book then explores how advances in AI and robotics are giving rise to machines that mirror human behavior and cognition; and how the speciation process may lead to the emergence of augmented humans. How do developments in Quantum Computing impact AI? Do we need to rethink security and cryptography at the atomic level?

Then I try to answer a key question we all are asking. How can we teach machines to partner with humanity with honesty, fairness, and respect, embedding the best of human values? Collectively, how can we ensure that the AI progress is not only powerful but also compassionate?

Finally, in the last chapter, I wanted to share my perspective on how nations should build their national AI strategies, drawing on my experience working with government leaders and institutions. They hold critical responsibilities, defining the core building blocks, setting clear mea-

asures of success, and navigating what digital sovereignty truly means in an AI-infused world. These are the questions many leaders are actively asking today.

With AI, we will hold incredible power in our hands. It is extremely important for humanity to carefully use this power to build a better future and planet(s) for our children. Collectively, we need to make sure AI technologies are used for the benefit of *ALL* and *NOT* for the benefit of a *FEW*. This is not a race to make lots of profit or summon power, it is a journey to rediscover who we really are as humans; and we all have a role in it.

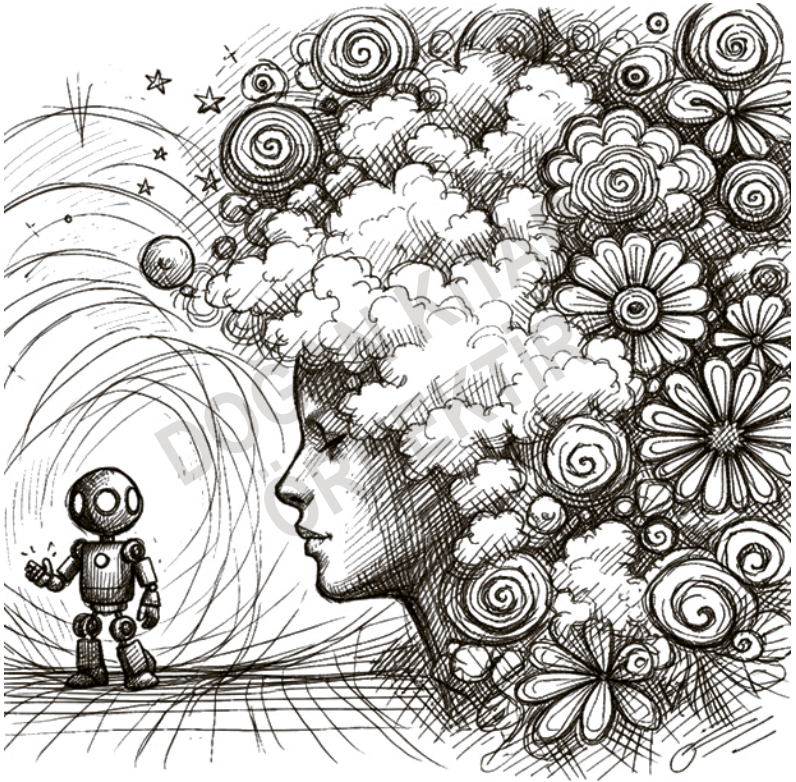
I would like to thank my son and my wife for their support and energy. They have been a source of love and creativity for me and will always be.

My son, thank you for opening new horizons in my life. As you grew up, so did I, learning from you, evolving as a father and as a person. Watching your creativity and imagination flourish has been one of my greatest gifts. Never lose your boundless *CURIOSITY*; spread your wings and embrace the beauty and people of this blue planet. Keep learning, keep growing. Use technology and science as powerful allies but always remember that nature is one of the wisest teachers you'll ever find. True harmony in life lies in the balance of health, love, nature, and doing work that brings you joy and leaves a positive mark on the world.

Note: At the end of the book, I've included a resources section, listing the research, papers, and materials I leveraged. Feel free to explore these links to deepen your understanding and continue the journey beyond.

## CHAPTER I

# First There Was a Dream



You may say I'm a dreamer, but I am not the only one.

JOHN LENNON

Our dreams are projections of the future, sketches of what could be. They reflect the essence of our humanity: the ability to imagine beyond today, to reach for what seems impossible. Dreaming is not a passive act; it is a declaration of intent, a rebellion against limitations. What begins as a distant vision often demands immense intellect, resilience, and effort. Along the way, we stumble, adapt, and learn, uncovering new truths not only about the world, but about ourselves. In chasing our dreams, we become architects of the future with our creativity and curiosity.

Perhaps we can attribute the portion of creativity and curiosity to our genetic heritage. However, much of it is learned and practiced, like sport. We know from great sports icons, musicians, business leaders, academics that what makes them great is not their genetic heritage, it is their unrelenting desire to learn and improve more than any other people to reach their dreams.

**When it comes to child psychology, many psychologists believe 0-6 years period is very critical. Our children have amazing learning capabilities. What we teach them and what they experience in these early ages of their lives defines the key ingredients of their personality and imagination.** My son is now 14 years old, he is half of my heart, the other half is my wife 😊. Through the projects we did together, he taught me firsthand that seeds of curiosity and imagination are planted very early. Imagining and then creating something is not

easy. It requires an idea to begin with. Then, you need stamina to make that idea real, which teaches you to be humble, learn from mistakes and move on, and helps you think outside the box. Often what you started with and what you ended up with are quite different, in a positive way.

I remember one of our early project meetings while shaping this book. We had gathered, tea cups in hand, notes scattered, to wrestle with one simple question: What should we call it? The title, we knew, had to carry the weight of the ideas within, yet remain light enough to invite curiosity.

Demir, who had reviewed every chapter, had been our advisor for clarity, ensuring that the language stayed accessible to younger audiences. As we tossed around names, some poetic, some abstract, the energy in the room was playful but focused. Then, almost quietly, Demir offered: “What about the 5th Dawn?”

He explained his reasoning with examples from ages of human evolution. The room fell silent for a moment. It was as if something unspoken had just been named. The rest of the team lit up. That moment reminded us of the curiosity and creativity of our young generations. Trust them!

## The idea

Demir and I often dive into a world of ideas, discussing everything from simple thoughts like “I want to learn spearfishing” to deeper questions like “Can a fully self-sustained life in nature truly be possible? (We will talk about this in coming chapters).” Sometimes ideas take time to develop, but at other times, they emerge in an instant. The key is to encourage curiosity; to ask questions that help them explore, gather information, and understand how even at a high level these ideas can take shape. Nurturing an idea into reality is one of life’s most powerful skills, yet it is not easy. Give your child the time and space to let their ideas flourish; in this process, they’ll discover their true potential.

## The power of questions

These days answers are abundant, often a few PROMPTS away. With so many resources and tools anyone can find an answer. But the true treasure lies in questions. *While answers may close a chapter, great questions open entire books.* They are the seeds of innovation, growth, and transformation.

One of the most brilliant engineering leaders I've ever had the privilege to work with, and believe me I've worked with many, was *Kyril Faenov* (RIP). He once said the following, which has stayed with me ever since.

**“At the heart of our interaction with universe lies human creativity. How we pose hypotheses encodes our value system, encodes what we hope to accomplish, without proving or disproving them, how we pose the question shows a great deal of expression of what we want to see.”**

**Kyril Faenov**

In a way, he summarized the essence of prompt engineering 15+ years ago. An average kid asks between 30,000 and 50,000 questions between 3-6 years, folic acid kids ask 70,000 questions. Encouraging your kids to ask questions at an early age helps them find answers to their own questions. Remember the most powerful questions are the open-ended ones that challenge them to expand their thinking and exercise their mental muscles.

## Executing your dreams is not easy

Going back to ideas, once an idea is selected, there comes execution. Allow your child to take the lead—observe, and step in only when necessary. From the start, you'll be amazed by their creativity and out-of-the-box thinking. The end result often turns out quite differently from what you started. Once you finish the project, the initial plan will have changed a lot. You will have both learned from mistakes, come up with new ideas and finished the project. You can see pride in their eyes, and the confidence that comes from imagining something and then bringing it to life.

I know you are probably thinking, what's all this got to do with AI? Well, it has a lot to do with AI. Curiosity, imagination and creativity are seeded early in the minds of our kids. Doing projects with them, and allowing them to experiment with the creation of their ideas broaden their horizons. This will stay with them forever as part of their personality, and must be developed when they are very young. My recommendation to parents is to start doing projects with their kids at an early age from drawing pictures to building things, learning new skills in sports or playing musical instruments. This will not only develop their imagination but also their basic motor skills. As they do more, they will get better, do different things, and have different ideas. In an AI-infused world, learning, adapting, and growing will always remain constant. *The faster we embrace new tools and augment our capabilities, the more empowered and future-ready we become.*

Going back to AI, one question still stands: If creativity and imagination can be learned and practiced by humans to get better, can it be learned by machines and programs? This is not an easy question to answer these days.

Yes, AI can simulate creativity and imagination, generate art, write stories, compose music, design solutions, but it often does this as it is inspired by patterns learned from massive datasets.

# The 5th Dawn

is a call to action to build a future with purpose and compassion through technology. A guiding reference for leaders, young minds, parents, and all who are curious about what lies ahead, it explores the past, present and future of AI addressing critical questions while igniting both hope and responsibility. A defining choice lies before us: the future we shape for our children, our planet and our careers. Let's choose wisely.

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