Parutions récentes

< Benoît DROUILLAT >

Intelligence artificielle
L'intelligence amplifiée par la technologie

François Cazals, Chantal Cazals, Deboeck, 2020

Pour comprendre ce nouveau phénomène, les auteurs se sont attachés à expliquer ce qu'est l'intelligence artificielle, son fonctionnement et ses limites actuelles. Ils ont sollicité des développeurs, chercheurs, utilisateurs et dessinent ainsi un panorama des acteurs de ce nouvel environnement.

Comme chaque avancée technologique, l'intelligence artificielle nourrit des craintes parfois exagérées mais toujours légitimes. Pour permettre au lecteur de comprendre ce nouveau phénomène, les auteurs se sont attachés à expliquer simplement ce qu'est l'intelligence artificielle, son fonctionnement et ses limites actuelles. Ils ont sollicité des développeurs, chercheurs, utilisateurs et dressent ainsi un panorama des acteurs de ce nouvel environnement : des grands noms, connus, d'entreprises souvent américaines qui dominent le marché, mais également des entreprises plus petites, des start-ups, des institutions qui dessinent les contours d'un nouvel écosystème. Ils ont demandé à ces acteurs de l'intelligence artificielle quelles étaient les applications déjà développées ou en projet qui, selon eux, auront un impact sur nous, sur notre société, dans les années à venir. Ils les ont interrogés sur leurs craintes et les façons d'y répondre.

Forts de ces témoignages, et sans ignorer les risques et les craintes inhérentes à toute transformation, les auteurs développent au fil des pages l'idée d'une IA à notre service, qui amplifie nos capacités à apprendre, comprendre, diagnostiquer, anticiper.

L'intelligence artificielle dans toutes ses dimensions

Sous la direction de Boris Barraud, L'Harmattan, 2020

Ce livre explore l'énigmatique monde de l'intelligence artificielle. Il décrit et explique son influence sur le sens de l'histoire, sur le renouveau des sociétés et des cultures, sur l'évolution de la politique et de l'économie, sur les changements de l'homme et de la vue. Il interroge ainsi l'intelligence artificielle dans toutes ses dimensions : technique, historique, sociologique, anthropologique, économique, politique, juridique, philosophique, épistémologique ou encore prospective. Un livre essentiel pour comprendre les transformations technologiques de notre environnement.

Utopie, réforme ou révolution?

Sous la direction de Mathilde Abel, Hugo Claret et Patrick Dieuaide, L'Harmattan, 2020

Régulièrement, depuis la fin des années 2000, les plateformes numériques font la une de l'actualité. Suscitant l'espoir d'une nouvelle économie fondée sur le partage, la coopération et la confiance, en quelques années, leur image s'est fortement dégradée dans l'opinion publique. On ne compte plus les problèmes et les questions que soulève l'intrusion des plateformes dans nos comportements de tous les jours, mais aussi dans les modes d'organisation et de fonctionnement des économies et de la vie en société. À partir de grilles de lecture et de situations spécifiques, les contibuteurs identifient et discutent de notions qui font la différence avec les catégories d'analyse et les représentations usuelles généralement employées : la polarisation ; la co-régulation ; le coopérativisme ; la métropolisation ; l'auto-entrepreneuriat ; la prosumation ; la spoliation ; le marketing politique ; la performation ; la triangulation.

La numérisation en cours de la société : Points de repère, enjeux

Bernard Miège, PUG, 2020

Que sont nos perceptions du numérique, ou plus précisément des techniques numériques ? Comment se sont implantés les géants du numérique (les Big Five) ? Pourquoi, en Europe surtout, les autorités ont-elles réagi si tardivement à l'avancée des industries américaines du numérique ? Les discours sociaux actuels sur le numérique sont marqués par une projection dans le futur et une détermination fébrile à s'adap- ter aux offres de changements, dans une quasi-absence de débat public et avec une grande passivité des responsables politiques. Comment s'y retrouver ? En s'appuyant sur une connaissance précise et argumentée de l'apport des techniques numériques au fonctionnement de l'information et de la communication, Bernard Miège questionne les perceptions et les représentations du rôle de ces techniques numériques dans la société de la communication. Ainsi, cet ouvrage offre à la fois une synthèse de très nombreux travaux de recherche français et étrangers, et une interrogation approfondie sur les développements des techniques numériques dans les sociétés contemporaines, et particulièrement dans la société française.

L'âge des postmachines

Sous la direction d'Isabelle Boof-Vermesse et Jean-François Chassay, Presses de l'Université de Montréal, 2020

Depuis l'Antiquité, avec le mythe de Galatée, l'objet qui s'anime traverse les âges et les arts. Comment l'imaginaire contemporain s'est-il emparé de la machine ? Sa représentation, sa symbolique, les récits qui lui sont associés sont évidemment tributaires de ceux de la société en général, du discours sur le progrès, du rapport à la technique. L'évolution des technologies du numérique et ses conséquences imprévisibles pour l'humanité ont rendu nécessaire le débat philosophique portant sur nos rapports avec elle. La machine est inséparable du sujet qui la crée, et les théories et les fantasmes autour d'une posthumanité ou du transhumanisme sont autant de réponses à cette symbiose imaginée ou réelle.

Pour comprendre la spécificité et l'identité de la machine – ou plutôt des machines –, cet ouvrage convoque non seulement la littérature et le cinéma, mais il explore aussi sa matérialisation dans les arts plastiques, les réseaux sociaux, les dispositifs écraniques, la bande dessinée et les jeux vidéo. En tout, dix-sept textes où se côtoient automates, intelligences artificielles et postmachines dans différents milieux – *in vivo, in vitro, in silico* – dont certains relèvent de dispositifs et de systèmes auto-engendrés.

Designing for Behavior Change: Applying Psychology and Behavioral Economics

Stephen Wendel, O'Reilly, 2020

Designers and managers hope their products become essential for users—integrated into their lives like Instagram, Lyft, and others have become. Such deep integration isn't accidental : it's a process of careful design and iterative learning, especially for technology companies. This guide shows you how to apply behavioral science—research that supports many products—to help your users achieve their goals using your product.

In this updated edition, Stephen Wendel, head of behavioral science at Morningstar, takes you step-by-step through the process of incorporating behavioral science into product design and development. Product managers, UX and interaction designers, and data analysts will learn a simple and effective approach for identifying target users and behaviors, building the product, and gauging its effectiveness.

Learn the three main strategies to help people change behavior

Identify behaviors your target audience seeks to change—and obstacles that stand in their way

Develop effective designs that are enjoyable to use

Measure your product's impact and learn ways to improve it

Combine behavioral science with data science to pinpoint problems and test potential solutions

The Coevolution: The Entwined Futures of Humans and Machines

Edward Ashford Lee, The MIT Press, 2020

Are humans defining technology, or is technology defining humans ? In this book, Edward Ashford Lee considers the case that we are less in control of the trajectory of technology than we think. It shapes us as much as we shape it, and it may be more defensible to think of technology as the result of a Darwinian coevolution than the result of top-down intelligent design. Richard Dawkins famously said that a chicken is an egg's way of making another egg. Is a human a computer's way of making another computer ? To understand this question requires a deep dive into how evolution works, how humans are different from computers, and how the way technology develops resembles the emergence of a new life form on our planet.

Lee presents the case for considering digital beings to be living, then offers counterarguments. What we humans do with our minds is more than computation, and what digital systems do—be teleported at the speed of light, backed up, and restored—may never be possible for humans. To believe that we are simply computations, he argues, is a "dataist" faith and scientifically indefensible. Digital beings depend on humans—and humans depend on digital beings. More likely than a planetary wipe-out of humanity is an ongoing, symbiotic coevolution of culture and technology.

The Artist in the Machine
The World of AI-Powered Creativity

Arthur I. Miller, The MIT Press, 2020

An authority on creativity introduces us to AI-powered computers that are creating art, literature, and music that may well surpass the creations of humans.

Today's computers are composing music that sounds "more Bach than Bach," turning photographs into paintings in the style of Van Gogh's *Starry Night*, and even writing screenplays. But are computers truly creative—or are they merely tools to be used by musicians, artists, and writers ? In this book, Arthur I. Miller takes us on a tour of creativity in the age of machines.

Miller, an authority on creativity, identifies the key factors essential to the creative process, from "the need for introspection" to "the ability to discover the key problem." He talks to people on the cutting edge of artificial intelligence, encountering computers that mimic the brain and machines that have defeated champions in chess, *Jeopardy !*, and Go. In the central part of the book, Miller explores the riches of computer-created art, introducing us to artists and computer scientists who have, among much else, unleashed an artificial neural network to create a nightmarish, multi-eyed dog-cat ; taught AI to imagine ; developed a robot that paints ; created algorithms for poetry ; and produced the world's first computer-composed musical, *Beyond the Fence*, staged by Android Lloyd Webber and friends.

But, Miller writes, in order to be truly creative, machines will need to step into the world. He probes the nature of consciousness and speaks to researchers trying to develop emotions and consciousness in computers. Miller argues that computers can already be as creative as humans—and someday will surpass us. But this is not a dystopian account ; Miller celebrates the creative possibilities of artificial intelligence in art, music, and literature.

Information Visualization: Perception for Design

Colin Ware, Morgan Kaufmann, 2020

Information Visualization : Perception for Design, Fourth Edition explores the art and science of why we see objects the way we do. Based on the science of perception and vision, the author presents the key principles at work for a wide range of applications--resulting in visualization of improved clarity, utility and persuasiveness. This new edition has been revised and updated to include the latest relevant

research findings. Content has been updated in areas such as the cognitive neuroscience of maps and navigation, the neuroscience of pattern perception, and the hierarchy of learned patterns.

New changes to the book make it easier to apply perceptual lessons to design decisions. In addition, the book offers practical guidelines that can be applied by anyone, including interaction designers and graphic designers of all kinds.

Powered by Design

Renée Stevens, O'Reilly, 2020

The design industry has evolved rapidly over the past decade. Effective and successful designers no longer need to just "make things," they need to be curious thinkers who understand how to solve problems that have a true impact on the world we live in and how to show the power of designing for social good. Now more than ever, the graphic design industry needs a book that teaches the foundations and theories of design while simultaneously speaking to the topics of history, ethics, and accessibility in order to make designs that are the most effective for all people.

In *Powered by Design*, educator, designer, and public speaker Renee Stevens brings a truly up to date and thoughtful approach to an introduction to graphic design. As Assistant Professor at the S.I. Newhouse School of Communication at Syracuse University, Stevens created this book to be at home equally in academia and outside of the school setting. With a conversational and approachable tone, Stevens' book is for anyone who wants to gain a more practical understanding of what graphic design is today, and the power and potential it has : from students to novice graphic designers to anyone who wants to build a solid foundation of design skills so that they can work more effectively with professional designers.

What Is DesignOps?

Dave Malouf, O'Reilly, 2020

Design is no longer a value-add that only some companies choose to afford. In today's marketplace it's a valuable strategic contributor for every organization. But getting the most value out of a design practice requires that these same organizations create an intentional operational practice—design operations (DesignOps). This comprehensive report provides an introduction to DesignOps along with practical patterns for using it within your organization.

Author Dave Malouf takes you through DesignOps concepts, components, methods, and tools and shows you how to put them to work. Operationalize your design practices and demonstrate and amplify the value of design for your company and customers alike.

– Explore frameworks, including the DesignOps Canvas and Projects, Process, People, to help you better understand DesignOps practices and create your own

– Understand the pieces that make up DesignOps, from human resources to delivery management, culture, and more

– Learn the role Agile can play in DesignOps

– Dive into common metrics to help determine the health of your design organization

– Discover how to assess the effectiveness of design operations in meeting goals

Human-Machine Shared Contexts

William Lawless, Ranjeev Mittu, Donald Sofge, Academic Press, 2020

Human-Machine Shared Contexts considers the foundations, metrics, and applications of human-machine systems. Editors and authors debate whether machines, humans, and systems should speak only to each other, only to humans, or to both and how. The book establishes the meaning and operation of "shared contexts" between humans and machines ; it

also explores how human-machine systems affect targeted audiences (researchers, machines, robots, users) and society, as well as future ecosystems composed of humans and machines.

This book explores how user interventions may improve the context for autonomous machines operating in unfamiliar environments or when experiencing unanticipated events ; how autonomous machines can be taught to explain contexts by reasoning, inferences, or causality, and decisions to humans relying on intuition ; and for mutual context, how these machines may interdependently affect human awareness, teams and society, and how these "machines" may be affected in turn. In short, can context be mutually constructed and shared between machines and humans ? The editors are interested in whether shared context follows when machines begin to think, or, like humans, develop subjective states that allow them to monitor and report on their interpretations of reality, forcing scientists to rethink the general model of human social behavior. If dependence on machine learning continues or grows, the public will also be interested in what happens to context shared by users, teams of humans and machines, or society when these machines malfunction. As scientists and engineers "think through this change in human terms," the ultimate goal is for AI to advance the performance of autonomous machines and teams of humans and machines for the betterment of society wherever these machines interact with humans or other machines.

Designing with the Mind in Mind
Simple Guide to Understanding User Interface Design Guidelines

Jeff Johnson, Morgan Kaufmann, 3rd ed., 2020

User interface (UI) design rules and guidelines, developed by early HCI gurus and recognized throughout the field, were based on cognitive psychology (study of mental processes such as problem solving, memory, and language), and early practitioners were well informed of its tenets. But today practitioners with backgrounds in cognitive psychology are a minority, as user interface designers and developers enter the field from a wide array of disciplines. HCI practitioners today have enough experience in UI design that they have been exposed to UI design rules,

but it is essential that they understand the psychological basis behind the rules in order to effectively apply them. In Designing with the Mind in Mind, best-selling author Jeff Johnson provides designers with just enough background in perceptual and cognitive psychology that UI design guidelines make intuitive sense rather than being just a list of rules to follow.

− Provides an essential source for user interface design rules and how, when, and why to apply them

− Arms designers with the science behind each design rule, allowing them to make informed decisions in projects, and to explain those decisions to others

− Equips readers with the knowledge to make educated tradeoffs between competing rules, project deadlines, and budget pressures

− Completely updated and revised, including additional coverage in such areas as persuasion, cognitive economics and decision making, emotions, trust, habit formation, and speech UIs

Security, Privacy and User Interaction

Markus Jakobsson, Springer, 2020

This book makes the case that traditional security design does not take the end-user into consideration, and therefore, fails. This book goes on to explain, using a series of examples, how to rethink security solutions to take users into consideration. By understanding the limitations and habits of users ? including malicious users, aiming to corrupt the system ? this book Illustrates how better security technologies are made possible.

Traditional security books focus on one of the following areas : cryptography, security protocols, or existing standards. They rarely consider the end user as part of the security equation, and when they do, it is in passing. This book considers the end user as the most important design consideration, and then shows how to build security and privacy technologies that are both secure and which offer privacy. This reduces the risk for social engineering and, in general, abuse.

Advanced-level students interested in software engineering, security and HCI (Human Computer Interaction) will find this book useful as a study guide. HCI (Human Computer Interaction) practitioners designing user interfaces and privacy researchers and practitioners working in security, as well as software engineers designing software solutions (that can be abused) will also be interested in this book.

Imagination + Technology
Phil Turner, Springer, 2020

Imagination is highly valued and sought-after, yet elusive and ill-defined. Definitions range from narrowly cognitive accounts to those which endow imagination with world-making powers. Imagination underpins our ability to speculate about the future and to re-experience the past. The everyday functioning of society relies on being able to imagine the perspectives of others ; and our sense of who we are depends on the stories our imaginations create. Our soaring imaginations have taken us to the moon and allowed Einstein to race a light beam. Unsurprisingly, imagination underlies every aspect of human-computer interaction, from the earliest conceptual sketches, through the realistic possibilities portrayed variously in well-known tools as scenarios and storyboards, through to the wilder shores of design fictions. Yet, curiously, imagination is very rarely addressed directly in the design and HCI literature (and is wholly missing from virtual reality).

This book addresses this gap in our accounts of how we imagine, conceptualise, design and use digital technologies. Drawing on many years of practical and academic experience in human computer-interaction, together with a wide range of material from psychology, design, cognitive science and HCI, seasoned with a little philosophy and anthropology, *Imagination + Technology* first considers imagination itself and the principal farthings of a new account. Later chapters discuss the role of imagination in the design, aesthetics, use and experience of digital technologies before the concluding chapter focusses on the provocative nature of imagination. The book will be stimulating reading for anyone working in the field of interactive technology and related areas, whether academics, students or practitioners.