Artificial Intelligence In Higher Education

#AI in Higher Education #Artificial Intelligence University #Future of Education AI #AI Learning Platforms #Personalized Learning AI

Artificial Intelligence is rapidly reshaping the landscape of Higher Education, offering innovative solutions to enhance learning, teaching, and administrative processes. From personalized learning pathways and intelligent tutoring systems to data-driven insights for curriculum development, AI empowers institutions to deliver more engaging and efficient educational experiences, ultimately preparing students for future challenges.

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Artificial Intelligence in Higher Education

This volume presents the written versions of talks delivered at the symposium "The advent of AI in Higher Education" held in Prague, Czechoslovakia, October 23-25, 1989. Contributions review the current impact of AI on the educational process, stressing the problems and needs of universities. Particular systems, projects and methodologies are de scribed with the aim of gathering and generalizing the experience obtained. The latest developments prove that AI offers interesting methods which could be used with success across a wider range in the domain of education. The nature and spirit of AI forms a new phenomenon which necessitates reconsidering the whole educational process. Papers in this volume describe sophisticated tutoring systems as well as suggestions for new curricula.

Artificial Intelligence in Higher Education and Scientific Research

This book explains the interaction between artificial intelligence and higher education. It explores artificial intelligence's tangible and intangible impact on higher education and scientific research and discusses how higher education and scientific research enhance the progress of artificial intelligence technologies. Based on systematic analysis with a multidisciplinary approach and a combination of theory and practice, the book brings original perspectives from the massive use of artificial intelligence in higher education and scientific research since the appearance of COVID-19. This book also discusses ethics in artificial intelligence, taking into consideration the recommendation on ethics of artificial intelligence adopted by UNESCO. This book explains the importance of technological sovereignty and new strategies to face current and future challenges related to e-learning, deep learning, and machine learning.

Artificial Intelligence in Higher Education

The global adoption of technology in education is transforming the way we teach and learn. Artificial Intelligence is one of the disruptive techniques to customize the experience of different learning groups, teachers, and tutors. This book offers knowledge in intelligent teaching/learning systems, and advances in e-learning and assessment systems. The book highlights the broad field of artificial intelligence applications in education, regarding any type of artificial intelligence that is correlated with education. It discusses learning methodologies, intelligent tutoring systems, intelligent student guidance and assessments, intelligent education chatbots, and artificial tutors and presents the practicality and applicability implications of AI in education. The book offers new and current research along with case studies showing the latest techniques and educational activities. The book will find interest with academicians which includes teachers, students of various disciplines, higher education policymakers

who believe in transforming the education industry, and research scholars who are pursuing their Ph.D. or Post Doc. in the field of Education Technology, Education, and Learning, etc. and those working in the area of Education Technology and Artificial Intelligence such industry professionals in education management and e-learning companies.

Impact of AI Technologies on Teaching, Learning, and Research in Higher Education

Within higher education, there are enormous untapped opportunities for product/services companies, administrators, educators, start-ups. and technology professionals to begin embracing artificial intelligence (AI) across the student ecosystem and infuse innovation into traditional academic processes by leveraging disruptive technologies. This type of human-machine interface presents the immediate potential to change the way we learn, memorize, access, and create information. These solutions present new openings for education for all while fostering lifelong learning in a strengthened model that can preserve the integrity of core values and the purpose of higher education. Impact of AI Technologies on Teaching, Learning, and Research in Higher Education explores the phenomena of the emergence of the use of AI in teaching and learning in higher education, including examining the positive and negative aspects of AI. Recent technological advancements and the increasing speed of adopting new technologies in higher education are discussed in order to predict the future nature of higher education in a world where AI is part of the fabric of universities. The book also investigates educational implications of emerging technologies on the way students learn and how institutions teach and evolve. Finally, challenges for the adoption of these technologies for teaching, learning, student support, and administration are addressed. Highlighting such tools as machine learning, natural language processing, and self-learning systems, this scholarly book is of interest to university administrators, educational software developers, instructional designers, policymakers, government officials, academicians, researchers, and students, as well as international agencies, organizations, and professionals interested in implementing AI in higher education.

Artificial Intelligence in Higher Education

The digital transformation of higher education institutions has accelerated in the last decade due to the confluent development of digital technologies. Understanding how artificial intelligence-enabled changes and improvements in universities in relation to teaching, management, sustainability, and research allows researchers to understand the advances and identify the challenges that may arise. This knowledge provides technological instruments as well as cognitive, philosophical, and epistemological tools to address different current issues. Strategy, Policy, Practice, and Governance for AI in Higher Education Institutions offers both empirical and theoretical information focused on artificial intelligence and its various applications in higher education institutions. It includes research results, authoritative overview articles, high quality analysis on trends, comparative studies, and analysis of cases that focus on issues including ethical issues and risks for applying AI in higher education, policies to introduce AI in curricula, and applications in teaching and learning. Covering topics such as artificial intelligence ethics, energy efficiency, and postsecondary administrative leadership, this premier reference source is an essential resource for computer scientists, AI scientists, administration of higher education institutions, educators and faculty of higher education, pre-service teachers, researchers, IT professionals, and academicians.

Strategy, Policy, Practice, and Governance for AI in Higher Education Institutions

How to educate the next generation of college students to invent, to create, and to discover—filling needs that even the most sophisticated robot cannot. Driverless cars are hitting the road, powered by artificial intelligence. Robots can climb stairs, open doors, win Jeopardy, analyze stocks, work in factories, find parking spaces, advise oncologists. In the past, automation was considered a threat to low-skilled labor. Now, many high-skilled functions, including interpreting medical images, doing legal research, and analyzing data, are within the skill sets of machines. How can higher education prepare students for their professional lives when professions themselves are disappearing? In Robot-Proof, Northeastern University president Joseph Aoun proposes a way to educate the next generation of college students to invent, to create, and to discover—to fill needs in society that even the most sophisticated artificial intelligence agent cannot. A “robot-proof” education, Aoun argues, is not concerned solely with topping up students' minds with high-octane facts. Rather, it calibrates them with a creative mindset and the mental elasticity to invent, discover, or create something valuable to society—a scientific proof, a hip-hop recording, a web comic, a cure for cancer. Aoun lays out the framework for

a new discipline, humanics, which builds on our innate strengths and prepares students to compete in a labor market in which smart machines work alongside human professionals. The new literacies of Aoun's humanics are data literacy, technological literacy, and human literacy. Students will need data literacy to manage the flow of big data, and technological literacy to know how their machines work, but human literacy—the humanities, communication, and design—to function as a human being. Life-long learning opportunities will support their ability to adapt to change. The only certainty about the future is change. Higher education based on the new literacies of humanics can equip students for living and working through change.

Robot-Proof

Technology is currently playing a vital role in revolutionizing education systems and progressing academia into the digital age. Technological methods including data mining and machine learning are assisting with the discovery of new techniques for improving learning environments in regions across the world. As the educational landscape continues to rapidly transform, researchers and administrators need to stay up to date on the latest advancements in order to elevate the quality of teaching in their specific institutions. Machine Learning Approaches for Improvising Modern Learning Systems provides emerging research exploring the theoretical and practical aspects of technological enhancements in educational environments and the popularization of contemporary learning methods in developing countries. Featuring coverage on a broad range of topics such as game-based learning, intelligent tutoring systems, and course modelling, this book is ideally designed for researchers, scholars, administrators, policymakers, students, practitioners, and educators seeking current research on the digital transformation of educational institutions.

Machine Learning Approaches for Improvising Modern Learning Systems

Artificial Intelligence and Learning Futures: Critical Narratives of Technology and Imagination in Higher Education explores the implications of artificial intelligence’s adoption in higher education and the challenges to building sustainable instead of dystopic schooling. As AI becomes integral to both pedagogy and profitability in today’s colleges and universities, a critical discourse on these systems and algorithms is urgently needed to push back against their potential to enable surveillance, control, and oppression. This book examines the development, risks, and opportunities inherent to AI in education and curriculum design, the problematic ideological assumptions of intelligence and technology, and the evidence base and ethical imagination required to responsibly implement these learning technologies in a way that ensures quality and sustainability. Leaders, administrators, and faculty as well as technologists and designers will find these provocative and accessible ideas profoundly applicable to their research, decision-making, and concerns.

Artificial Intelligence and Learning Futures

Chatbots powered by artificial intelligence (AI) have captivated the academic world as tools for human-like interaction across various settings. Within the realm of education, AI-powered chatbots, such as ChatGPT, hold the potential to revolutionize teaching, learning, and research processes. By simulating human conversation through vast data and machine learning algorithms, generative AI has unveiled new opportunities for personalized and adaptive learning experiences. Facilitating Global Collaboration and Knowledge Sharing in Higher Education With Generative AI delves into the promising prospects and challenges of applying generative AI in education while employing a critical interdisciplinary perspective. The book offers comprehensive insights into the transformative effects of generative AI on teaching, learning, and research. However, the application of generative AI in education also brings ethical, pedagogical, and technical challenges to the forefront. Concerns over privacy, data protection, and the impact of automation on human interaction and creativity demand thorough examination and practical solutions. Intended for educators, researchers, and administrators in higher education institutions, as well as policymakers and industry professionals at the intersection of AI and higher education. The book encompasses a wide range of themes, including the impact of AI-generated content on student engagement and performance in online learning environments, ethical implications of automating education through AI-powered chatbots, personalization of learning experiences for diverse student populations, and the challenges of integrating generative AI into traditional classroom settings.

Facilitating Global Collaboration and Knowledge Sharing in Higher Education With Generative AI

There is no more important issue facing education, or humanity at large, than the fast approaching revolution in Artificial Intelligence or AI. This book is a call to educators everywhere to open their eyes to what is coming. If we do so, then the future will be shaped by us in the interests of humanity as a whole.

The Fourth Education Revolution

Higher education is undergoing radical changes with the arrival of emerging technology that can facilitate better teaching and learning experiences. However, with a lack of technical awareness, technophobia, and security and trust issues, there are several barriers to the uptake of emerging technologies. As a result, many of these new technologies have been overlooked or underutilized. In the information systems and higher education domains, there exists a need to explore underutilized technologies in higher education that can foster communication and learning. Fostering Communication and Learning With Underutilized Technologies in Higher Education is a critical reference source that provides contemporary theories in the area of technology-driven communication and learning in higher education. The book offers new knowledge about educational technologies and explores such themes as artificial intelligence, digital learning platforms, gamification tools, and interactive exhibits. The target audience includes researchers, academicians, practitioners, and students who are working or have a keen interest in information systems, learning technologies, and technology-led teaching and learning. Moreover, the book provides an understanding and support to higher education practitioners, faculty, educational board members, technology vendors and firms, and the Ministry of Education.

Fostering Communication and Learning With Underutilized Technologies in Higher Education

Are you ready to unlock the transformative potential of Artificial Intelligence in higher education? Whether you're a faculty member, an administrative professional, or even a student, "Academia & A.I.: How Artificial Intelligence is Reshaping Higher Education" is a compass helping you navigate this exciting yet complex landscape. Imagine a world where administrative bottlenecks are a thing of the past, personalized learning is the standard, and where educators are free to focus on what truly matters-teaching and research. Sounds like a dream, right? This book is one step towards turning that dream into reality. What sets this book apart? It's not just another theoretical tome, but a practical guide that walks you through the myriad of AI tools available right now and offers some creative ways to use them. From chatbots that streamline student support to predictive analytics that offer a personalized roadmap to academic success, you'll discover a plethora of AI tools that are just a click away. And for those already on their AI journey, you'll find advanced strategies to elevate your current initiatives. But it's not all rosy; we delve into the ethical maze that accompanies AI adoption. Data privacy, algorithmic bias, and other moral considerations are dissected to ensure you're fully equipped to implement AI responsibly. By the end of this quick read, you'll not only understand the rhetoric surrounding AI but also how to practically implement these tools in your institution. If you haven't yet, this will encourage you to take the plunge, create an account with an AI tool, and experience firsthand both its capabilities and limitations. So why wait? Embark on your AI journey today and be a part of the collective effort that is reshaping higher education for the better.

Academia & A.I.

This book presents a practical, effective, and systematic approach to the measurement, assessment, and sensemaking of institutional performance. Included are strategies to measure and assess the performance of Curriculum, Learning, Instruction, Support Services, and Program Feasibility as well as a meaningful Environmental Scanning method.

A Machine Learning, Artificial Intelligence Approach to Institutional Effectiveness in Higher Education

This open access book tackles the pressing problem of integrating concerns related to Artificial Intelligence (AI) ethics into higher education curriculums aimed at future AI developers in Africa and beyond. For doing so, it analyzes the present and future states of AI ethics education in local computer science and engineering programs. The authors share relevant best practices and use cases for teaching, develop answers to ongoing organizational challenges, and reflect on the practical implications of different theoretical approaches to AI ethics. The book is of great interest to faculty members, researchers, and students in the fields of artificial intelligence, computer science, mathematics, computer engineering, and related areas, as well as higher education administration.

AI Ethics in Higher Education: Insights from Africa and Beyond

Artificial intelligence (AI) is exerting unprecedented pressure on the global higher educational landscape in transforming recruitment processes, subverting traditional pedagogy, and creating new research and institutional opportunities. These technologies require contextual and global ethical analysis so that they may be developed and deployed in higher education in just and responsible ways. To-date, these efforts have been largely focused on small parts of the educational environments leaving most of the world out of an essential contribution. This volume acts as a corrective to this and contributes to the building of competencies in ethics education and to broader, global debates about how AI will transform various facets of our lives, not the least of which is higher education.

AI Ethics and Higher Education

Artificial Intelligence (AI) is a rapidly growing field transforming how we interact with technology. AI has the potential to revolutionize education by creating new opportunities for teaching, Learning, and assessment. In this paper, we will explore the potential of AI in higher education, the challenges and opportunities associated with it, and the best practices for implementing and evaluating AI in higher education. AI has been used in education for decades to support teaching, Learning, and assessment. However, the recent advances in AI technology have opened up new opportunities to use AI in innovative and exciting ways in higher education. AI applications in higher education include automated grading of assignments, personalized learning pathways, and automated tutoring. AI can also identify student problems and recommend solutions, develop more effective curricula, and create new learning experiences. AI can be used to automate repetitive tasks, personalize instruction, identify student problems, and create more effective curricula and assessment tools. However, some challenges are associated with its use, such as the need for more understanding regarding AI technology and the lack of AI infrastructure and resources in higher education. Institutions must ensure that AI is used responsibly and ethically, that all data collected is secure and that students' privacy is respected. By understanding the potential of AI in higher education and following the best practices for implementing and evaluating AI, institutions can unlock the potential of AI and create new opportunities for teaching, Learning, and assessment. The paper will be based on a secondary data reviewing journals on the topics of Artificial Intelligence, Higher Education and the future of Learning. The limitations to the findings are limited to the information available in the research material reviewed. The paper can be a foundational overview related to the impacts of AI on the future of higher education for further primary research.

Unlocking the Potential of AI in Education

This book presents how Digital Transformation is a requirement to upgrade Latin American universities to a next level in management, lecturing and learning processes and strategies. The book starts with a thorough introduction of the Latin American context addressing the three main topics in the book: Digital Transformation, Higher Education and Artificial Intelligence & Industry 4.0. They will be depicted by region, with a clear distribution between Central America & Mexico, Comunidad Andina (Perú, Colombia, Chile, Ecuador, Bolivia), Mercosur (Argentina, Brasil, Paraguay and Uruguay), and other countries. The book also shows how online learning is a key part of the transformation, with a clear focus on learning management systems, innovation and learning analytics. Further, personalised services for every single profile at the university (students, lecturers, academic managers) are presented to guarantee inclusive education service aggregation for networked campuses. Following, the book addresses strategy and overall services that concentrate on sustainability and revenue models integrated with a strategic planning. Finally a set of chapters will show specific experiences and case studies of direct application of Artificial Intelligence and Technology 4.0, where the readers can learn from and transfer directly into their educational contexts.

Radical Solutions for Digital Transformation in Latin American Universities

This book provides the latest viewpoints of scientific research in the field of e-business. It is organized into three sections: “Higher Education and Digital Economy Development”, “Artificial Intelligence in E-Business”, and “Business Intelligence Applications”. Chapters focus on China’s higher education in e-commerce, digital economy development, natural language processing applications in business, Information Technology Governance, Risk and Compliance (IT GRC), business intelligence, and more.

E-Business

"A thoroughly updated and revised edition of a university president's recommendations for providing the next generation of college students with the critical skills needed to work with, and alongside, AI"--

Robot-proof

This book aims to explore the next generation of online learning challenges including the security and privacy issues of digital transformation strategies that is required in teaching and learning. Also, what efforts does the industry need to invest in changing mind-sets and behaviours of both students and faculty members in adoption of virtual and blended learning? The book provides a comprehensive coverage of not only the technical and ethical issues presented by the use of AI, blockchain and self-sovereign identity, but also the adversarial application of AI and its associated implications. The authors recommend a number of novel approaches to assist in better detecting, thwarting and addressing AI challenges in higher education. The book provides a valuable reference for cyber security experts and practitioners, network security professionals and higher education strategist and decision-makers. It is also aimed at researchers seeking to obtain a more profound knowledge of machine learning and deep learning in the context of cyber security and AI in higher education. Each chapter is written by an internationally renowned expert who has extensive experience in industry or academia. Furthermore, this book blends advanced research findings with practice-based methods to provide the reader with advanced understanding and relevant skills.

AI, Blockchain and Self-Sovereign Identity in Higher Education

Using Marxist critique, this book explores manifestations of Artificial Intelligence (AI) in Higher Education and demonstrates how it contributes to the functioning and existence of the capitalist university. Challenging the idea that AI is a break from previous capitalist technologies, the book offers nuanced examination of the impacts of AI on the control and regulation of academic work and labour, on digital learning and remote teaching, and on the value of learning and knowledge. Applying a Marxist perspective, Preston argues that commodity fetishism, surveillance, and increasing productivity ushered in by the growth of AI, further alienates and exploits academic labour and commodifies learning and research. The text puts forward a solid theoretical framework and methodology for thinking about AI to inform critical and revolutionary pedagogies. Offering an impactful and timely analysis, this book provides a critical engagement and application of key Marxist concepts in the study of AI’s role in Higher Education. It will be of interest to those working or researching in Higher Education.

Artificial Intelligence in the Capitalist University

This book explores the purpose, role and function of the university and examines the disconnection between students’ approaches to learning and university strategy. It centres on the idea that it is vital to explore what counts as a university in the twenty-first century, what it is for, and for whom, as well as how it can transcend social divisions. The universities of the twenty-first century need to have larger audiences, a broader voice, a shift away from othering and an effective means of progressing such shifts. What is central to such exploration is the idea that learning needs to be seen as postdigital. With a focus on how the growth of technology has and continues to affect university learning, this book: explores the concepts of the digital and the postdigital promotes just and inclusive pedagogies for higher education considers ways to ensure learning is an ethical and political experience studies how to understand community and collective values through higher education suggests ways of promoting personal and collective responsibility for our world and its peoples presents ways in which the university can challenge ideologies based on capitalist modes of consumption, privilege and exploitation Digital and Postdigital Learning for Changing Universities is essential reading for anyone seeking to reimagine the university in a postdigital age, despite institutional structuration and government intervention. It challenges current assumptions and practices, and encourages new ways of thinking about higher education and learning in the twenty-first century.

Digital and Postdigital Learning for Changing Universities

This book explores the integration of AI-powered chatbots tools such as ChatGPT into higher education for instructional and communication purposes. The author emphasizes the responsibility of higher education institutions to equip students with advanced skills for writing with AI assistance, and prepare them for an increasingly AI-driven world. Offering numerous practical tips, the book demonstrates how universities can increase student success, and stem the rising cost of higher education by employing

AI tools. The chapters discuss streamlining tasks such as grading, providing feedback, and handling administrative duties, to show how educators can be enabled to focus on more meaningful aspects of their work. The author also reflects on the philosophical and ethical considerations and potential pitfalls of relying on AI in higher education, including concerns about academic integrity and the importance of human input in the learning process. The author offers a responsible and informed approach to incorporating the new powerful tools into the academic landscape. This volume will be a key resource for higher education faculty and administrators seeking to navigate the complex intersection of AI and writing.

Artificial Intelligence in Higher Education

Artificial Intelligence (AI) has the potential to address some of the biggest challenges in education today, innovate teaching and learning practices, and ultimately accelerate the progress towards SDG 4. However, these rapid technological developments inevitably bring multiple risks and challenges, which have so far outpaced policy debates and regulatory frameworks. This publication offers guidance for policy-makers on how best to leverage the opportunities and address the risks, presented by the growing connection between AI and education. It starts with the essentials of AI: definitions, techniques and technologies. It continues with a detailed analysis of the emerging trends and implications of AI for teaching and learning, including how we can ensure the ethical, inclusive and equitable use of AI in education, how education can prepare humans to live and work with AI, and how AI can be applied to enhance education. It finally introduces the challenges of harnessing AI to achieve SDG 4 and offers concrete actionable recommendations for policy-makers to plan policies and programmes for local contexts. [Publisher summary, ed]

Embracing Chatbots in Higher Education

This new volume focuses on the application of artificial intelligence, blockchain technology, and the Internet of Things to meet the new challenges faced by higher education due to the Covid-19 pandemic, which necessitated restrictions to gathered groups of students and others and increased the need for alternative means of teaching, learning, and communication. With a need to find alternatives to the traditional face-to-face teaching and learning during the pandemic, the authors of Advancements in Artificial Intelligence, Blockchain Technology and IoT in Higher Education: Mitigating the Impact of Covid-19 discuss the best use of technologies in many areas of study in higher education. The book addresses the growing role of AI in the digital transformation in higher education systems, looking at learning and teaching models. The authors look at using digital technologies to create smart universities and the use of blockchain and IoT technologies in higher education. With chapters from eminent professors, researchers, and others involved in higher education from a selection of different countries, the peer-reviewed chapters in this volume highlight how educators, administrators, and students in higher education have embraced these new technologies and how they can be continued and enhanced even after the threat of Covid has passed and in preparation for new deadly pandemics.

AI and education

An overview of the current status of new information technologies (NIT) in teaching, training, research, and administration of higher education internationally includes 25 papers: "The Impact of NITS of Higher Education" (C. Calude and M. Malitza); "Educational Implications of Artificial Intelligence" (M.A. Boden); "On Theory of Knowledge" (L. Iliev); "Computer Technology and Education" (L. P. Steier); "New Information Technologies: The Role of Artificial Intelligence" (G. S. Pospelov); and "The Challenges of Cognitive Science and Information Technology to Human Rights and Values in University Life" (M. Pellery); "Computers at Stanford: An Overview" (P. Suppes); "The Use of the Personal Computer in Education at the University of Buckingham" (J. E. Galletly); "End User Computing--A Challenge for University Organization" (P. Baumgartner and S. Payr); "The Influence of Informatics and the Use of Computers in the Content and Methodology of Higher Education" (H. Mohle); and "Informatics in Higher Education in Switzerland" (excerpt from a report on informatics issued by the Federal Ministry for Education and Science); "Searching for Patterns of Knowledge in Science Education" (A. Kornhauser); "Medical Educational Computing" (D. Ingram); "Patient Simulation by Computer--C.A.S.E.S., Software for the Construction of Computer Patients" (H. A. Verbeek); "Microcomputers in Statistical Education: the Buckingham Experience" (E. Shoesmith); "Courses in Computer Graphics in Faculties of Mechanical Engineering in Czechoslovakia" (J. Novak); "On the Way to Chaos--An Analysis of a Family of Logistic Models" (T. Kinnunen); "Educational Technology and the New Technologies" (P. W. Verhagen

and T. Plomp); "A Knowledge-Base for Instructional Design" (F. C. Roberts); "Facilities Concerning the Infrastructure for Development of CAI in Advanced, Further, and Higher Vocational Education in the Netherlands" (R. van Asselt); "Some Thoughts on Structures, Objectives, and Management of Centres for Computation Sciences and Software Technology" (D. Bjorner); and "The Social Impact of Technology: An Issue for Engineering Education" (A. Bitzer and R. Sell); and "The Emergence of Institutional Research and the Use of Microcomputers: New Roles for Institutional Researchers in Western Europe Higher Education Institutions" (E. Frackmann); "The Student Information System of the University of Helsinki" (A. Heiskanen); "The Impact of Information Technologies on University Administration" (R. Bouchet); and "An International Centre for Computers and Informatics (ICCI) to Promote Third World Development" (M. Munasinghe). (SM)

Advancements in Artificial Intelligence, Blockchain Technology, and IoT in Higher Education

"The landscape for education has been rapidly changing in the last years: demographic changes affecting the makeup of families, multiple school options available to children, wealth disparities, the global economy demanding new skills from workers, and continued breakthroughs in technology are some of the factors impacting education. Given these changes, how can schools continue to prepare students for the future? In a world where information is readily available online, how can schools continue to be relevant? The emergence of Artificial Intelligence (AI) has exacerbated the need to have these conversations. Its impact on education and the multiple possibilities that it offers are putting pressure on educational leaders to reformulate the school curriculum and the channels to deliver it. The book "Artificial Intelligence in Education, Promises and Implications for Teaching and Learning" by the Center for Curriculum Redesign immerses the reader in a discussion on what to teach students in the era of AI and examines how AI is already demanding much needed updates to the school curriculum, including modernizing its content, focusing on core concepts, and embedding interdisciplinary themes and competencies with the end goal of making learning more enjoyable and useful in students' lives. The second part of the book dives into the history of AI in education, its techniques and applications -including the way AI can help teachers be more effective, and finishes on a reflection about the social aspects of AI. This book is a must-read for educators and policy-makers who want to prepare schools to face the uncertainties of the future and keep them relevant." --Amada Torres, VP, Studies, Insights, and Research, National Association of Independent School (NAIS) "The rapid advances in technology in recent decades have already brought about substantial changes in education, opening up new opportunities to teach and learn anywhere anytime and providing new tools and methods to improve learning outcomes and support innovative teaching and learning.Research into artificial intelligence and machine learning in education goes back to the late 1970s. Artificial intelligence methods were generally employed in two ways: to design and facilitate interactive learning environments that would support learning by doing, and to design and implement tutoring systems by adapting instructions with respect to the students' knowledge state.But this is just the beginning. As Artificial Intelligence in Education shows, AI is increasingly used in education and learning contexts. The collision of three areas - data, computation and education - is set to have far-reaching consequences, raising fundamental questions about the nature of education: what is taught and how it is taught. Artificial Intelligence in Education is an important, if at times disturbing, contribution to the debate on AI and provides a detailed analysis on how it may affect the way teachers and students engage in education. The book describes how artificial intelligence may impact on curriculum design, on the individualisation of learning, and on assessment, offering some tantalising glimpses into the future (the end of exams, your very own lifelong learning companion) while not falling victim to tech-hype. The enormous ethical, technical and pedagogical challenges ahead are spelt out, and there is a real risk that the rapid advances in artificial intelligence products and services will outstrip education systems' capacity to understand, manage and integrate them appropriately. As the book concludes: "We can either leave it to others (the computer scientists, AI engineers and big tech companies) to decide how artificial intelligence in education unfolds, or we can engage in productive dialogue."I commend this book to anyone concerned with the future of education in a digital world." --Marc Durando, Executive Director, European Schoolnet

New Information Technologies in Higher Education

This book is about perspectives in Higher Education. The book consists of chapters related to higher education themes of Knowledge, Society and Technology. The present book include chapters on Knowledge creation, challenges and opportunities in higher education, Inclusiveness, Artificial intelligence, Transgender concerns, impact of Tagore’s philosophy on higher education, positive Education and

certain technological concerns in Higher Education. This book would give readers a bird’s eye view of the various concerns of higher education spread across disciplines.

Artificial Intelligence in Education

As explored in this open access book, higher education in STEM fields is influenced by many factors, including education research, government and school policies, financial considerations, technology limitations, and acceptance of innovations by faculty and students. In 2018, Drs. Ryoo and Winkelmann explored the opportunities, challenges, and future research initiatives of innovative learning environments (ILEs) in higher education STEM disciplines in their pioneering project: eXploring the Future of Innovative Learning Environments (X-FILEs). Workshop participants evaluated four main ILE categories: personalized and adaptive learning, multimodal learning formats, cross/extended reality (XR), and artificial intelligence (AI) and machine learning (ML). This open access book gathers the perspectives expressed during the X-FILEs workshop and its follow-up activities. It is designed to help inform education policy makers, researchers, developers, and practitioners about the adoption and implementation of ILEs in higher education.

Perspectives on Higher Education

Due to automation, nearly half of the jobs will vanish over the next two decades in the US. However, the problem is not confined to any particular country. Management educators in higher education are faced with two fundamental questions: (a) how we prepare our students for new required technology competencies when conducting international business and (b) how we work with new technologies to prepare our students. While the next generation of employees requires competencies in working with artificial intelligence relying on data analytics, the emergence of artificial intelligence and new technologies in augmenting teaching is changing the nature of higher education across the globe. Management Education and Automation explores international management education in light of exponential development of artificial intelligence, big data, demographic shifts, expansion of robotic utilization in many economic sectors, aging populations and negative population growth in developed economies, multipolar international political systems, migration patterns, and fundamental shifts in individual and social interactions via digital media. It shows the latest state of knowledge on the topic and will be of interest to researchers, academics, policymakers, and students in the fields of international business and management, globalization, management education, and management of technology and innovation.

Innovative Learning Environments in STEM Higher Education

Modes and models of learning and instruction have shown a significant shift from yesterday's conventional learning and teaching given this era’s current educational and social contexts. Learners are no longer learning and communicating with human-generated, computed, and mediated—or traditional—learning and instructional practices, paving the way for machine-facilitated communication, learning, and teaching tools. Learning and instruction, communication and information exchange, as well as gathering, coding, analyzing, and synthesizing data have proven to be in need of even more innovative technology-moderated tools. Applications of Machine Learning and Artificial Intelligence in Education focuses on the parameters of remote learning, machine learning, deep learning, and artificial intelligence under 21st-century learning and instructional contexts. Covering topics such as data coding and social networking technology, it is ideal for learners with an interest in the deep learning discipline, educators, educational technologists, instructional designers, and data evaluators, as well as special interest groups (SGIs) in the discipline.

Management Education and Automation

The Fourth Industrial Revolution is introducing automation technology into all major disciplines, including business, engineering, and education. Higher education institutions need to incorporate this digital transformation in order to remain competitive. Redesigning Higher Education Initiatives for Industry 4.0 is an essential reference source that discusses education strategies for human-computer interactions in an automated world and the role of education in conjunction with artificial intelligence and virtual technologies. Featuring research on topics such as e-learning, mobile devices, and artificial intelligence, this book is ideally designed for professionals, IT specialists, researchers, librarians, administrators, and educators.

Robot-Proof, revised and updated edition

This book researches the current status of Artificial Intelligence in higher education

Applications of Machine Learning and Artificial Intelligence in Education

In the rapidly evolving landscape of industrial activities, artificial intelligence (AI) has emerged as a powerful force driving transformative change. Among its many applications, AI has proven to be instrumental in reducing processing costs associated with optimization challenges. The intersection of AI with optimization and multi-criteria decision making (MCDM) techniques has led to practical solutions in diverse fields such as manufacturing, transportation, finance, economics, and artificial intelligence. Using Traditional Design Methods to Enhance AI-Driven Decision Making delves into a wide array of topics related to optimization, decision-making, and their applications. Drawing on foundational contributions, system developments, and innovative techniques, the book explores the synergy between traditional design methods and AI-driven decision-making approaches. The book is ideal for higher education faculty and administrators, students of higher education, librarians, researchers, graduate students, and academicians. Contributors are invited to explore a wide range of topics, including the role of AI-driven decision-making in leadership, trends in AI-driven decision-making in Industry 5.0, applications in various industries such as manufacturing, transportation, healthcare, and banking services, as well as AI-driven optimization in mechanical engineering and materials.

Redesigning Higher Education Initiatives for Industry 4.0

What will universities look like in 30- or 40-years' time? This book looks at that future, examining the potential impact of technologies like artificial intelligence, virtual reality, smart buildings, drones, robots, and holograms in future universities. It is a story told in three acts. The first act takes the reader through a history of the modern university, highlighting major innovations that have transformed the academy since the founding of the University of Bologna in 1088. A second act builds on this history and transports the reader to the future, observing the application of these technologies in a future university from the point of view of professors, administrators, and students, as we tour the transformed campus with them. The third act examines how these technologies might be adopted most effectively through the combined effort of university leaders, administrators, faculty and students.

Digital Directions

We task fewer industries to think about the future than we ask from education. In societies where constant change is the norm, schools today must prepare students to be successful in environments and contexts that may differ greatly from what we experience today. But, are we really thinking about the future? With contributions from four continents, this book reveals a 'snapshot' of some of our best thinking for building new education futures. Diverse experiences, visions, and ideas are shared to help spark new thinking among educators and policymakers, provoke conversation, and facilitate new ideas for meeting human development needs in a rapidly transforming world. Edited by John W. Moravec Chapters authored by: Leona Ungerer; Lisa B. Bosman, Julius C. Keller, & Gary R. Bertoline; Audrey Falk & Russell Olwell; Silvia Cecilia Enríquez, Sandra Beatriz Gargiulo, María Jimena Ponz & Erica Elena Scorians; Robert Thorn; Erling N. Dahl, Einar N. Strømmen & Tor G. Syvertsen; John W. Moravec & Kelly E. Killorn; Pekka Ihanainen; Stefania Savva; Gabriela Carreño Murillo; Erik Mileti

Using Traditional Design Methods to Enhance AI-Driven Decision Making

This collection focuses on the role of higher education institutions concerning datafication as a complex phenomenon. It explores how the universities can develop data literac(ies) shaping tomorrow skills and "formae mentis" to face the most deleterious effects of datafication, but also to engage in creative and constructive ways with data. Notably, the book spots data practices within the two most relevant sides of academics' professional practice, namely, research and teaching. Hence, the collection seeks to reflect on faculty's professional learning about data infrastructures and practices. The book draws on a range of studies covering the higher education response to the several facets of data in society, from data surveillance and the algorithmic control of human behaviour to empowerment through the use of open data. The research reported ranges from literature overviews to multi-case and in-depth case studies illustrating institutional and educational responses to different problems connected to data. The ultimate intention is to provide conceptual bases and practical examples relating to universities' faculty

development policies to overcome data practices and discourses' fragmentation and contradictions: in a nutshell, to build “fair data cultures” in higher education.

The Promises and Pitfalls of Technology in Higher Education

Emerging Education Futures