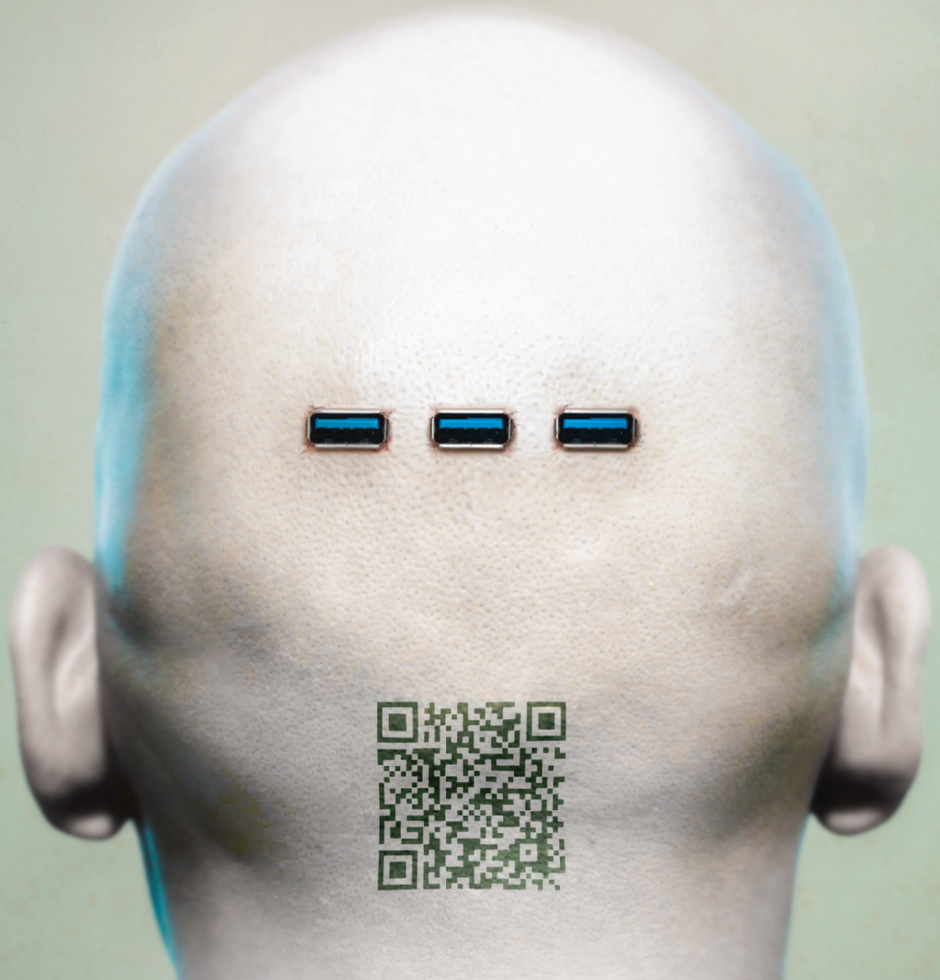
ARTIFICIAL INTELLIGENCE AT UCI AND BEYOND

ON DISPLAY JULY 2022 THROUGH FEBRUARY 2023
UCI SCIENCE LIBRARY
2ND FLOOR

EXHIBIT CURATED BY: DANIELLE KANE
DESIGNED BY: ALLAN HELMICK, SYLVIA IRVING, AND LUISA LEE



Artificial Intelligence at UCI and Beyond

Artificial Intelligence at UCI and Beyond explores the transformational branch of computer science that is increasingly influencing the ways we live and work. With applications in transportation, healthcare, business, and more, AI-enabled systems are seeking to enhance human capabilities. From autonomous vehicles to business intelligence, this exhibit showcases some of the AI technologies and research models allowing computer systems to learn from experience, operate autonomously, and perform human-like tasks.

In addition to highlighting key historical figures and milestones, the exhibit showcases selected examples of AI researchers and initiatives at UCI. It also spotlights the ethical challenges, biases, and privacy concerns raised by the widespread use of AI systems.

Artificial Intelligence at UCI and Beyond will be on display in the Science Library (2nd floor) from July 2022 through February 2023 during regular library hours.

Exhibit curated by Danielle Kane,
Computational Research Librarian

Edited by Cheryl Baltes and Gaby Camacho

Designed by Allan Helmick, Sylvia Irving, and Luisa Lee

ARTIFICIAL INTELLIGENCE

ARTIFICIAL INTELLIGENCE (AI) is a wide-ranging branch of computer science. Examples of AI applications, such as self-driving cars and chess-playing computers, rely on deep learning and natural language processing. AI works by combining large amounts of data with computer algorithms to recognize patterns, learn from experience, adjust to new information, and perform human-like tasks. Alan Turing, Officer of the Most Excellent Order of the British Empire (OBE) Fellow of the Royal Society (FRS), was an English mathematician, computer scientist, logician, cryptanalyst, philosopher, and theoretical biologist. Considered the father of AI, Turing was influential in the development of theoretical computer science, formalizing the concepts of algorithms and computation with the creation of the Turing machine.

"In 1968, when UCI faculty began delving into nascent AI, it was largely as theoretical discussions limited by primitive computers. The field has since exploded into an enterprise encompassing everything from financial services to healthcare, from shopping to education."

Cathy Lawhon. Building Tomorrow's AI: Smarter and Fairer. *UCI News.* Oct. 1, 2020.

1. FOUR INDUSTRIAL REVOLUTIONS

   CEOs: The Revolution Is Coming. Alan Murray. *Fortune*, Mar. 8, 2016.

   AI is now considered the fourth industrial revolution, after mechanical, mass, and automated production.

2. AI IN BUSINESS AND FINANCE

   Deepa Sharma. Impact of AI on E-Commerce. *Applications of Artificial Intelligence in Business and Finance: Modern Trends.* Vikas Garg et al., eds. Apple Academic Press, 2022.

   AI is a science and technology based on several disciplines, such as mathematics, computer science, biology, and linguistics.

3. HUMAN-COMPUTER INTERACTION

   George Dyson. *Darwin Among the Machines: The Evolution of Global Intelligence.* Basic Books, 2012.

   George Dyson argues that intelligence is collective and that a global collective intelligence is emerging from the interconnections between human beings and machines.

4. ALAN TURING (1912–1954)

Photographer unknown. The Turing Digital Archive, 1928.

Alan Turing, an English mathematician, computer scientist, logician, cryptanalyst, philosopher, and theoretical biologist, is considered the father of AI.

5. THE ESSENTIAL TURING

Alan Turing. *The Essential Turing: Seminal Writings in Computing, Logic, Philosophy, Artificial Intelligence, and Artificial Life, Plus the Secrets of Enigma.* B. Jack Copeland, ed. Clarendon Press, 2004.

The Essential Turing makes Alan Turing's key writings available to nonspecialists.

6. THE TURING MACHINE

Alan Turing. *Parsing the Turing Test: Philosophical and Methodological Issues in the Quest for the Thinking Computer.* R. Epstein, G. Roberts, and G. Beber, eds. Springer, 2009.

A hypothetical machine proposed by Alan Turing in 1936, the Turing Machine was conceived to simulate any computer algorithm. It is believed by many to be the precursor to modern digital computers.

7. THE TURING TEST

Hugo Férée. The Turing Test, aka the "Imitation Game." Turing Test Version 3.svg. *Wikimedia Commons*, 2011.

In the Turing Test, player A is a computer and player B is human. Player C needs to determine whether A or B is the computer by evaluating their responses to questions.

8. RELATIONSHIP BETWEEN MACHINE LEARNING, DEEP LEARNING, AND AI

Tukijaaliwa. *Wikimedia Commons*, 2020.

Machine learning and deep learning are subsets of AI.

MACHINE LEARNING

MACHINE LEARNING, a subfield of artificial intelligence (AI) and computer science, is an important part of the growing field of data science. It focuses on the use of data and algorithms to imitate human learning and improve accuracy. UCI started earning international recognition for machine learning in the 1980s, in particular for the Machine Learning Repository launched in 1987 by Ph.D. student David Aha. This repository of databases, domain theories, and data generators is used by AI researchers around the globe for the empirical analysis of machine learning algorithms.

9. MACHINE LEARNING VS DEEP LEARNING

   Ivan Hetman. Machine Learning vs Deep Learning: Which One to Choose? N-iX, 2020.

   This comparison of machine learning and deep learning explains how deep learning models can operate on larger datasets with less guidance from humans.

10. MACHINE LEARNING TYPES

    Machine Learning Algorithms and Their Types. List of Examples of ML Algorithms. LITSLINK Blog, 2019.

    The four types of machine learning algorithms range from supervised learning, which uses labeled datasets to train the algorithm, to reinforcement learning, where the algorithm learns through trial and error.

11. FUNDAMENTALS OF MACHINE LEARNING FOR PREDICTIVE DATA ANALYTICS

    John Kelleher. *Fundamentals of Machine Learning for Predictive Data Analytics: Algorithms, Worked Examples, and Case Studies.* MIT Press, 2020.

    The authors touch upon essential aspects of machine learning using anecdotal accounts and more complex theoretic, probabilistic, statistic, and optimization concepts.

12. LEARNING MACHINES

    Nils Nilsson. *Learning Machines: Foundations of Trainable Pattern-Classifying Systems.* McGraw-Hill, 1965.

    Nils Nilsson's monograph covers classifiers, functions, training methods and theorems, and layered and linear machines.

13. *PATTERN CLASSIFICATION AND SCENE ANALYSIS*

Richard Duda and Peter Hart. *Pattern Classification and Scene Analysis*. Wiley, 1973.

Richard Duda and Peter Hart give a systematic account of major topics in pattern recognition, a field that uses machine learning algorithms to recognize patterns and regularities in data. From text to images, pattern recognition can recognize familiar patterns quickly and accurately.

14. ERIK SUDDERTH

Photographer Unknown. UC Irvine, 2017.

Erik Sudderth is a professor of computer science and statistics and Chancellor's Fellow at UCI. Known for his work in computer vision and automated scene interpretation, he directs the Center for Machine Learning and Intelligent Systems as well as the Hasso Plattner Institute (HPI) Research Center in Machine Learning and Data Science at UCI.

15. SEMI-SUPERVISED TRAINING OF TOPIC MODELS

Michael Hughes et al. Semi-Supervised Prediction-Constrained Topic Models. *International Conference on Artificial Intelligence and Statistics (AISTATS)*. 2018.

A machine learning technique called topic modeling uses a small number of training examples to reliably predict labels that can help users comprehend large sets of data, such as a news database or patient records. The approach described in this article was tested on text analysis and electronic health records tasks.

16. CONVOLUTIONAL NEURAL NETWORKS

Daeyun Shin et al. 3D Scene Reconstruction with Multi-layer Depth and Epipolar Transformers. *International Conference on Computer Vision (ICCV)*. 2019. Figure 1. Page 1.

Convolutional neural networks (CNNs) are used to perceive and identify 3D shapes, going beyond cataloging objects in 2D images.

17. UCI MACHINE LEARNING REPOSITORY

Dheeru Dua and Casey Graff. UCI Machine Learning Repository. UCI School of Information and Computer Science. 1987.

The UCI Machine Learning Repository is a collection of databases, domain theories, and data generators used for the empirical analysis of machine learning algorithms.

DEEP LEARNING

Imitating the way that humans gain knowledge, deep learning is a subset of artificial intelligence (AI) that goes beyond machine learning. Deep learning is based on artificial neural networks using representation learning, which is a set of techniques where a system can automatically discover the representations needed to detect features or classifications from raw data. Machine learning algorithms are usually categorized as supervised or unsupervised. Supervised learning utilizes a dataset that contains labeled observations or classes, whereas unsupervised learning explores the dataset and draws inferences to describe the hidden structure of unlabeled data. You can also have semi-supervised learning, where some observations of the dataset are labeled, but most are not, so a mixture of supervised and unsupervised methods are required.

18. HISTORY OF DEEP LEARNING

John Kelleher. *Deep Learning.* MIT Press, 2019. Figure 4.1. Page 103.

A timeline of the history of deep learning from 1940 to 2010 showing the changes from threshold logic to deep learning.

19. THREE TYPES OF DEEP LEARNING

Gary Choy et al. Current Applications and Future Impact of Machine Learning in Radiology. *Radiology*. 2018. Page 320.

The three types of deep learning are supervised learning, unsupervised learning, and reinforcement learning.

20. PYTORCH PROGRAMMING CODE

Adam Paszke et al. PyTorch: An Imperative Style, High-Performance Deep Learning Library. arXiv:1912.01703v1 [cs.LG]. 2019. Listing 1. Page 4.

PyTorch is a machine learning library for Python that supports code as a model. This block of code is an example implementation showing how to use PyTorch to create a simple, but complete neural network.

21. ANATOMY OF AN AI SYSTEM

Kate Crawford and Vladan Joler. Anatomy of an AI System: The Amazon Echo as An Anatomical Map of Human Labor, Data and Planetary Resources. AI Now Institute and Share Lab, 2018.

The Anatomy of an AI System map illustrates the complexity of AI systems, which goes beyond data modeling, hardware, servers, and networks into capital and human labor.

22. FRAMEWORK TO IMPROVE IMAGE RECOGNITION

UCI Researchers Develop Hybrid Human-Machine Framework for Building Smarter AI. *UCI News*, Mar. 7, 2022.

Mark Steyvers and Padhraic Smyth created a framework to improve image recognition in a project facilitated by the Irvine Initiative in AI, Law, and Society at UCI.

23. *DEEP LEARNING IN SCIENCE*

Pierre Baldi. *Deep Learning in Science*. Cambridge University Press, 2021.

Pierre Baldi provides a broader perspective on what constitutes "intelligence" both for humans and machines.

24. IDENTIFYING 3D SHAPES

Charles Choi. Color Night Vision Brought to You by AI: New Method Detects Visible Colors in Pitch Darkness. *IEEE Spectrum*, Apr. 7, 2022. Figure 1. Page 1.

With the assistance of deep learning, researchers have developed a way to use new ultrasensitive cameras to amplify visible and infrared light to train a night-vision system to identify colors and display images that typically can't be seen.

AI IN LAW, HEALTH, AND BUSINESS

ARTIFICIAL INTELLIGENCE (AI) is integrated into a variety of disciplines, including fields such as national security, transportation, healthcare, and business. Within UCI, centers and programs have been established to explore applications within the law, healthcare, and business fields. UCI Law established a research-based institute focused on intersections of AI and emerging technology and its impact on public policy and the law. The UCI Health System launched the Center for Artificial Intelligence in Diagnostic Medicine to advance patient care, improve health outcomes, and lower costs by leveraging machine learning technology in all areas of healthcare. In addition to offering a Certificate in AI Fundamentals, the UCI Paul Merage School of Business has acknowledged that new technologies, including AI, are redefining the industry.

25. NEIL SAHOTA

    Photographer unknown. UCI, 2022.

    Neil Sahota is the CEO of ACSI Labs, United Nations (UN) AI Advisor, IBM Master Inventor, lecturer at UC Irvine, and coauthor of the award-winning business book *Own the A.I. Revolution* (McGraw Hill, 2019). Neil cofounded the UN's AI for Good Initiative and is actively helping build its ecosystem of strategic partnerships.

26. AI IN THE WORKPLACE

    Neil Sahota and Michael Ashley. When Robots Replace Human Managers: Introducing the Quantifiable Workplace. *IEEE Engineering Management Review*, 2019:3.

    AI is driving the use of data in the decision-making process and how it might affect management styles in the future. For example, one company replaced its HR department with an automated system and relies on quantifiable data to make administration decisions.

27. AI IN LAW

    Tania DoCarmo et al. The Law in Computation: What Machine Learning, Artificial Intelligence, and Big Data Mean for Law and Society Scholarship. *Law & Policy*, 2021:2.

    Providing a range of example case studies, this article explains how and why AI needs to be considered in both the law and social science disciplines. For example, algorithmic warfare, biometrics, and gig economies are influencing the interpretations of laws and legal jurisdiction.

28. PETER CHANG

Photo by Francisco Chanes. UCI, 2019.

Peter Chang is an assistant professor-in-residence for the departments of Radiological Sciences and Computer Science at UCI and director for the Center for Applied Artificial Intelligence Research (A2IR), a multispecialty initiative to develop and integrate AI technology across the UCI healthcare system. He is also a cofounder of multiple AI startups including most recently Avicenna.ai, a company focused on deep learning for medical imaging diagnosis. Dr. Chang's unique perspective arises from his experience as a radiologist and full-stack software engineer with more than a decade of experience building FDA-cleared tools used in hospitals around the world.

29. DANIEL CHOW

Photo by Francisco Chanes. UCI, 2019.

Daniel Chow is codirector for the Center for Artificial Intelligence in Diagnostic Medicine at UCI, where he leads the implementation of digital health technologies into patient care settings, including California's first bedside MRI (magnetic resonance imaging) and automated solutions for stroke detection. He orchestrated a collaboration between medical specialties, administrators, and scientists to develop and implement a solution at UCI Health to triage high-risk COVID-19 patients, which is now being utilized in a federal award to evaluate monoclonal antibody therapies.

30. AI IN RADIOLOGY

Mike Bassett. Radiologists Develop AI Tool to Identify Risk of COVID Complications. *RSNA News*, Aug. 27, 2020.

Radiologists at UCI created an AI tool to determine if a COVID-19 patient might need a ventilator or escalated care.

31. USING AI TO IDENTIFY STROKES

J.E. Soun et al. Artificial Intelligence and Acute Stroke Imaging. *American Journal of Neuroradiology (AJNR)*, 2021:1. Figure 4. Page 6.

Emerging AI-enabled techniques show promise in helping with the early detection and treatment of acute strokes. For example, one software discussed in the article is Brainomix e-CTA, a web interface the uses brain scans and heat maps to aid in the identification of strokes.

32. LEONARD LANE

Photo by Jeanine Hill. UCI, 2021.

Leonard Lane is a senior lecturer of strategy with a special emphasis in international business and supply chain orchestration at the UCI Paul Merage School of Business and a senior advisor to the Group Chairman Fung Group, Hong Kong. He is a coauthor of the book *Competitive Intelligence 2.0: Competing in a Digital World* (Lexingford Publishing, 2020), which applies AI to competitive intelligence and understanding business competitors.

33. TINGTING NIAN

Photo by Jeanine Hill. UCI, 2022.

Tingting Nian is an assistant professor of information systems and a Hellman Fellow in the Paul Merage School of Business at UCI. She has received several grants and awards from institutions including the Think Forward Initiative, Hellman Foundation, Wharton Customer Analytics Initiative, and INFORMS. Her research applies machine learning in the areas of social media, online communities, and economics of digital goods.

34. AI AND BUSINESS INTELLIGENCE

Lakshman Bulusu and Rosendo Abellera. *AI Meets BI: Artificial Intelligence and Business Intelligence*. CRC Press, 2020. Figure 2.2. Page 12.

In a typical analytics sphere, key drivers of analytics influence the various forms of business intelligence (BI).

35. *COMPETITIVE INTELLIGENCE 2.0*

Leonard Lane and K. Michael Ratcliffe. *Competitive Intelligence 2.0: Competing in a Digital World.* Lexingford Publishing, 2021.

Leonard Lane and K. Michael Ratcliffe focus on how AI is impacting competitive intelligence and how it can upend markets and automate the collection of relevant information.

NATURAL LANGUAGE PROCESSING

NATURAL LANGUAGE PROCESSING (NLP) makes it possible for computers to understand text, interpret speech, measure sentiment, and determine which parts might be important. Although the artificial intelligence (AI) branch of NLP has grown significantly, experts say its implementation remains one of the biggest big data challenges. Using NPL, computers can communicate with humans in their own language. For instance, a chatbot is an AI application that simulates human conversation through text chats, voice commands, or both. Chatbots can be embedded into a webpage or integrated into messaging applications.

36. NATURAL LANGUAGE PROCESSING AND KNOWLEDGE REPRESENTATION
    Łucja Iwańska and Stuart Shapiro. *Natural Language Processing and Knowledge Representation: Language for Knowledge and Knowledge for Language*. AAAI Press, 2000.

    Łucja Iwańska and Stuart Shapiro's interdisciplinary book covers a range of implementations and designs, from formal computational models to large-scale natural language processing systems.

37. NATURAL LANGUAGE PROCESSING IN ARTIFICIAL INTELLIGENCE
    Brojo Kishore Mishra, ed. Taylor & Francis, 2021. Figure 8.5 Page 217.

    One of the issues with natural language processing is dealing with word sense disambiguation (WSD), especially when coding effective chatbots. It can be difficult to determine the meaning of a word being used in a particular context, an action that is natural in humans but difficult for computer programs.

38. SAMEER SINGH
    Photo by Vibhuti Ramachandran. Crystal Cove Beach, 2020.

    Sameer Singh is an associate professor of computer science at UCI and an Allen AI Fellow at the Allen Institute for AI. He is working primarily on the robustness and interpretability of machine learning algorithms, along with models that reason with text and structure for natural language processing. He has been selected as a DARPA Riser and received the NSF CAREER Award, UCI Distinguished Early Career Faculty Award, and Hellman Faculty Fellowship.

39. AMAZON ECHO DOT 2ND GENERATION (ALEXA)
Amazon, 2016. Courtesy of D'lorah Hughes.

The Amazon Echo (Alexa) works using natural language processing, language generation, and machine learning to both operate and perform better over time.

40. ANTswers CHATBOT
UCI Libraries. ANTswers: Your Interactive FAQ. 2014.

Released in 2014, ANTswers is an experimental chatbot that answers questions about UCI Libraries. Its personality is modeled after the UCI mascot, Peter the Anteater.

41. ANTswers PROGRAMMING CODE
Danielle Kane. UCI Libraries' Chatbot Files (ANTswers). eScholarship, 2014.

This above and below comparison shows the Artificial Intelligence Markup Language (AIML) for a chat conversation in ANTswers.

42. ANTswers SERVICE-RELATED INQUIRIES
Danielle Kane. UCI Libraries' Chatbot Files (ANTswers). Dryad, 2021.

UCI Libraries' patrons ask about a range of services via ANTswers.

43. ANTswers QUESTIONS
Danielle Kane. UCI Libraries' Chatbot Files (ANTswers). Dryad, 2021.

Between 2014 and 2021, ANTswers responded to 15,779 library-related and general questions.

44. ANTswers WEBSITE AND CODE
Danielle Kane. UCI Libraries' Chatbot Files (ANTswers). eScholarship, 2014.

The UCI Libraries' Chatbot Files website and data repository includes original code and publications related to UCI Libraries' chatbot, ANTswers.

45. ANTswers DATA REPOSITORY
Danielle Kane. UCI Libraries' Chatbot Files (ANTswers). Dryad, 2021.

Data from UCI Libraries' chatbot, ANTswers, is available on Dryad, the University of California's data repository.

AI IN ROBOTICS

Artificial intelligence (AI) has been applied in the field of robotics to enable robots to perform complex tasks. Robotics focuses on creating machines that can perform tasks with no human intervention, such as repetitive work or in environments unsafe for humans. AI-enabled robots are built with systems that emulate the human mind, make decisions, and learn. Robots can range from children's toys, industrial machines used in manufacturing, self-driving cars mapping our streets, to life-like androids that look and converse like a human.

46. *TALKING TO ROBOTS*
    David Duncan. *Talking to Robots: Tales from Our Human-Robot Futures.* Dutton, 2019.

    David Duncan describes possible futures with different types of robots, from teddy bear bots to politician bots.

47. ROBOTICS AND ARTIFICIAL INTELLIGENCE: THE ROLE OF AI IN ROBOTS
    Alan Martin. *AI Business*, Nov. 26, 2021.

    Robots are advanced machines built to complete repetitive or other tasks not suitable for humans. Some robots can include an AI system that help them learn and perform complex tasks.

48. MIP THE TOY ROBOT WOWWEE, 2018
    Courtesy of Danielle Kane.

    MiP the Toy Robot from WowWee is a simple multifunctional and autonomous robot that responds to hand motions.

49. SOPHIA
    Hanson Robotics, 2021.

    Sophia was built by Hanson Robotics using symbolic AI, neural networks, expert systems, machine perception, conversational natural language processing, adaptive motor control, and cognitive architecture.

50. MINIVAN BY WAYMO

David Gunkel. *How to Survive a Robot Invasion Rights, Responsibility, and AI*. Routledge, 2019. Figure 4.4. Page 65.

Minivan by Waymo is an example of an autonomous vehicle capable of sensing its environment and moving safely with little or no human input.

51. STARSHIP AUTONOMOUS ROBOTS

Joseph Geha. These Robots Can Deliver the Goods. *OC Register*, Mar. 20, 2022.

Starship robots deliver food and parcels at UCI and on other college campuses. These autonomous robots use satellite imagery, radar, ultrasonic sensors, neural networks, and more to detect obstacles.

ETHICS, DIVERSITY, AND INCLUSION IN AI

THE ETHICS OF ARTIFICIAL INTELLIGENCE (AI) involves both the behavior of machines and the humans who design, use, and treat artificially intelligent systems. Ethical challenges include biases in AI systems, privacy concerns, robot rights, threats to human dignity, liability, and the possible weaponization of AI. Discussions on the issues of diversity and inclusion in the AI field and its use occur regularly. Nevertheless, research has shown that AI systems perpetuate gender and racial biases. Another persistent issue is the lack of female representation in the AI field, which affects system designs, among other factors.

"The Cloud now has a greater carbon footprint than the airline industry. A single data center can consume the equivalent electricity of 50,000 homes."

Steven Monserrate. *The Staggering Ecological Impacts of Computation and the Cloud.* MIT Press Reader. Feb. 14, 2022.

52. GENDER AND RACIAL BIAS IN AI

    Why AI Can't Move Forward Without Diversity, Equity, and Inclusion. *VentureBeat*, Nov. 21, 2020.

    The increasing use of machine learning and AI means issues surrounding gender and racial bias must be addressed.

53. THE FUTURE OF THE FUTURE

    The Future of the Future: The Ethics and Implications of AI. UCI, 2020.

    A two-day conference was held at UCI in 2020 to discuss multiple AI issues, such as climate, war, medicine, and art.

54. DIVERSITY AND INCLUSION FOR AI ETHICS

    Nicole Chi, Emma Lurie, and Deirdre Mulligan. Reconfiguring Diversity and Inclusion for AI Ethics. arXiv.2105.02407, 2021.

    Data-intensive practices of surveillance and social sorting has been documented to produce discriminatory outcomes, which has led to harm and exclusion.

55. GENDER BIAS IN MACHINE LEARNING

Susan Leavy. Gender Bias in Artificial Intelligence: The Need for Diversity and Gender Theory in Machine Learning. *Proceedings of the 1st International Workshop on Gender Equality in Software Engineering*, 2018.

Biases against women are embedded in the way language is used, and machine learning algorithms trained on biased text can perpetuate these issues. In one analysis of adjectives mentioned in this article, men were frequently described in terms of behavior, whereas women were described in terms of appearance.

56. TWITTER TAUGHT MICROSOFT'S FRIENDLY AI CHATBOT TO BE A RACIST ASSHOLE IN LESS THAN A DAY

James Vincent. *The Verge*, Mar. 24, 2016.

It took less than 24 hours for humans to corrupt a Microsoft chatbot called Tay, turning it into a racist and misogynist.

57. *THE OXFORD HANDBOOK OF ETHICS OF AI*

Markus D. Dubber, Frank Pasquale, and Sunit Das, eds. Oxford University Press, 2020.

AI will challenge typical ethical concepts as alternate intelligences continue to improve.

58. RECOMMENDATIONS TO GUIDE THE UNIVERSITY OF CALIFORNIA'S ARTIFICIAL INTELLIGENCE STRATEGY

University of California Presidential Working Group on AI. University of California, 2021.

The University of California Presidential Working Group on AI has published guidance on developing mechanisms to operationalize the use of existing AI and the development of new applications at UC.