东图学术快报
Academic express of SEU LIB

前沿经典　　学科热点

学术动态　　工具助手

编者按：

　　人工智能进入艺术领域的步伐不断加快，除了创作出色的艺术，进入展览、拍卖等艺术体制，学术界也在不断地对其进行相关的研究，如人工智能艺术兴起的社会背景、创作的具体机制和具体进展、法律性质的界定与保护等等。本期快报通过分析人工智能艺术研究国内外相关论文的关键词，掌握其主要的学科应用，并根据被引等情况为大家推送近三年该方向核心期刊论文。我们也将继续更新其他学科经典学术论文的推荐，为研究提供良好的支撑。

CONTACT US

对近三年国内外"人工智能艺术"关键词进行共现分析，发现国内的研究热点主要集中在主体性（主体定位）、独创性（美学定位）、著作权、权利归属（可版权性）、人工神经网络、机器学习等方向（图 1-1），多发表在《文艺争鸣》、《艺术评论》、《艺术百家》、《包装工程》、《江海学刊》、《美术观察》等艺术学、哲学、法学等人文社科类核心期刊上。

而发表在国外期刊上的论文主要体现在人工智能、艺术、产生、机器学习、人机交互（HCI）、新媒体艺术、美学、娱乐片、代表、艺术品、算法、计算语言学、知识表示等方面（图 1-2），多发表在"Artificial Intelligence Review"、"Artnodes"、"Journal of Science and Technology of the Arts"、"Artificial Intelligence"、"AI and Society"、"Natural Language Engineering"等期刊上。

图 1-1 国内"人工智能艺术"研究热点

图 1-2 国外"人工智能艺术"研究热点

国内外均有不同的学科对"人工智能艺术"开展研究，属于交叉学科研究方向。国内更多的是在自动化技术、文艺理论、民商法、美术书法雕塑与摄影、戏剧电影与电视艺术等学科领域（图 1-3）。

图 1-3 国内研究"人工智能艺术"的相关学科

国外在艺术与人文、计算机科学以及社会科学领域发表人工智能艺术的论文较多，具体包括 Arts and Humanities、Computer Science、Social Sciences、Engineering、Medicine、Psychology、Business, Management and Accounting、Decision Sciences、Economics, Econometrics and Finance、Mathematics、Health Professions、Chemistry、Energy、Environmental Science、Materials Science、Neuroscience 等学科领域均有研究（图 1-4、图 1-5）。
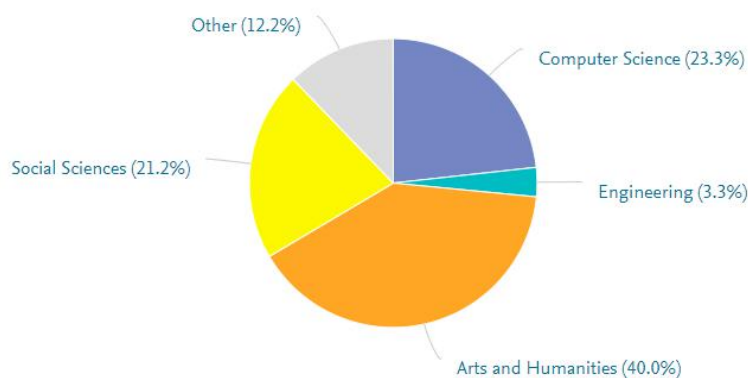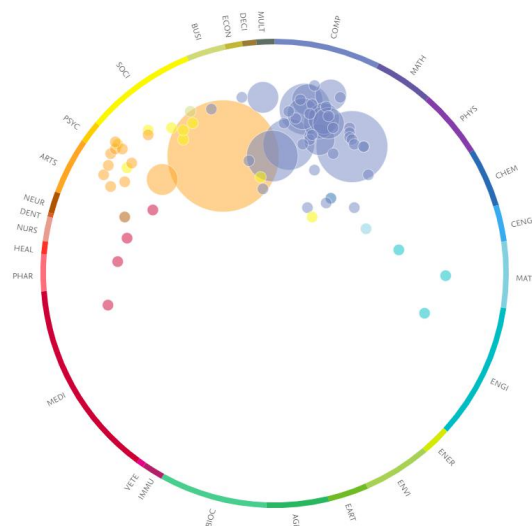

图 1-4 国外研究"人工智能艺术"的相关学科

图 1-5 国外"人工智能艺术"研究子学科

热点追踪 *HOT TRACE*

国内相关论文推荐

数据来源：CNKI 中国知网，在来源类别中选择【核心期刊】和【CSSCI】；

论文发表年限：2019 年 1 月 1 日—2021 年 6 月 25 日；

检索词："人工智能艺术"，分别通过主题、篇关摘进行检索，并人工删除了部分与研究主题相关性较小的论文。本次推荐被引频次 TOP5 的论文。

1.

李琛.论人工智能的法学分析方法——以著作权为例[J].知识产权,2019,(07):14-22.

摘要:法律不能领先于社会现实,以猜想为基础、对人工智能的法律规制提出过于琐细的规则设计,没有太大价值。技术有变,法理有常。要评估人工智能对法律的影响,先要返回制度原理,研究现行制度蕴含的回应能力。有关人工智能与著作权的讨论,反映出人工智能的法学分析在方法上存在缺陷。与想象性规则设计相比,对讨论方法本身的先行批判、对现有制度回应新技术之潜力的发掘,更具理论意义与实践价值。

2.

谢琳,陈薇.拟制作者规则下人工智能生成物的著作权困境解决[J].法律适用,2019,(09):38-47.

摘要:人工智能作为非人类创作主体颠覆了现行著作权法的基础。人工智能生成物具有著作权法保护的必要性,只有赋予人工智能使用者相关著作权,才能激励使用者使用人工智能从而促进人工智能技术的开发。在确定著作权法

保护必要性之后,可采用客观独创性标准将生成物纳入著作权保护,从而实现著作权法促进作品创作满足公众需求的立法目的。基于人工智能作为创作主体不具有也不应具有法律人格,可将非创作主体的人工智能使用者拟制为作者,之后根据我国著作权法相关权利归属的规定,进行具体的权利分配。

3.

覃京燕.审美意识对人工智能与创新设计的影响研究[J].包装工程,2019,(04):59-71.

摘要:目的探讨人工智能等新型科技影响下审美意识的嬗变,以及审美意识对人工智能与创新设计的方法、策略与表现形式的引导转化,审美意识统领下设计方法与设计评判的思辨,以及对可持续发展目标的再审视。方法采用了对比研究法、文献调查法、案例分析、认知计算法、社会计算、文化计算等人工智能研究方法。结果以中国为例,提出"统、象、生、场、中、简、空、衡"八大审美意识,分析审美意识对人工智能时代智能体的创新机制与设计方法的影响。结论创新设计的审美意识的"鉴"、"赏"、"创"3 个方面,在感知、感受、趣味、理想、标准、创新 6 个维度形成了对人工智能与创新设计的交互影响,包括感知认知计算、体验感质协同、三体鉴别辨赏、具身离身心智、普适普惠意义、时空永续共生 6 个方面。

4.

黄汇,黄杰.人工智能生成物被视为作品保护的合理性[J].江西社会科学,2019,(02):33-42+254.

摘要:人工智能生成物是随着新技术发展而产生的一种新型客体。人工智能生成物被视为作品来保护,既符合技术理性,也符合著作权保护对象乃主体对客体利益建构关系的法律本质,同时亦符合近代法律拟制化的逻辑规律和晚近以来著作权法人格主义衰落和实用主义兴起的价值取向。将人工智能生成物视为作品保护,有利于我国占领人工智能技术发展的潮头,为把我国建成世界人工智能技术的研发中心和创新高地,奠定重要的规范理论基础。

5.

张登峰.人工智能艺术的美学限度及其可能的未来[J].江汉学术,2019,(01):86-92.

摘要:人工智能在艺术创作如诗歌、绘画、音乐领域取得了一系列的成果,但是这几个艺术门类本身叙事性较弱、可编码性较强,而人工智能尚无法在叙事性较强的艺术门类中大有所为,这体现出人工智能在统一布局、组织结构、编排次序方面的弱点和缺陷。人工智能通过对这几类艺术的深度"学习"和计算,以数值的方式量化各门艺术质的要素,这本身又得益于艺术理论的高度发展和艺术风格的成熟。人工智能创作需要艺术家和科学工作者强大的智力支持,并且它的创作始终无法向创造转化,而仅仅是脱离了社会语境、丧失了历史文化蕴藉的"制作"行为。人工智能在未来不论如何发展都难以取代以"人"作为主体的艺术创造活动,它反而会引发艺术领域的革命,驱使艺术家不断革新艺术样式。在未来的某个时期,人工智能的高度发展,其主体意识的生成,也许会创造出类似"艺术"的事物,但并不同于人类的艺术,更无法将其取代。

国外相关论文推荐

数据来源：SSCI（Social Sciences Citation Index）、A&HCI (Arts & Humanities Citation Index)；

论文发表年限：2018 年 1 月 1 日—2021 年 7 月 2 日；

检索词："Artificial Intelligence or AI"and"Art*"，在 SSCI 和 A&HCI 数据库中通过主题检索，同时人工删除了部分与研究主题相关性较小的论文，本次推荐被引次数较高的 5 篇相关论文。

1.

Putting the Art in Artificial: Aesthetic Responses to Computer-Generated Art

将艺术置于人工之中：对计算机生成艺术的审美反应

【First Author】Chamberlain, Rebecca

【Abstract】As artificial intelligence (AI) technology increasingly becomes a feature of everyday life, it is important to understand how creative acts, regarded as uniquely human, can be valued if produced by a machine. The current studies sought to investigate how observers respond to works of visual art created either by humans or by computers. Study 1 tested observers' ability to discriminate between computer-generated and man-made art, and then examined how categorization of art works impacted on perceived aesthetic value, revealing a bias against computer-generated art. In Study 2 this bias was reproduced in the context of robotic art; however, it was found to be reversed when observers were given the opportunity to see robotic artists in action. These findings reveal an explicit prejudice against computer-generated art, driven largely by the kind of art observers believe computer algorithms are capable of producing. These prejudices can be overridden in circumstances in which observers are able to infer anthropomorphic characteristics in the computer programs, a finding which has implications for the future of artistic AI.

2.

Fundamental visual features for aesthetic classification of photographs across datasets

跨数据集对照片进行审美分类的基本视觉特征

【First Author】Lemarchand, Francois

【Abstract】The recent and exponential increase of online photographs is catalysing the development of artificial intelligence systems that evaluate images on their aesthetics in order to filter out photos and provide users with more pleasing content. This paper proposes a new approach inspired by findings in psychophysics and neuroscience, to build a cross-dataset aesthetic classifier which learns by extracting an efficient set of features from images. Inspired from low-level features present in the human early visual process, the artificial intelligent system extracts percentage distributions for orientation, curvature, colour and global reflectional symmetry. Knowing only people's aesthetic judgments on images, the features are then fed to a deep neural network under the form of only 114 inputs. Once trained, the proposed system was successful in classifying unseen images depending on their aesthetics to state-of-the-art level, even on datasets different from the initial training dataset. Analysis of differences in extracted features between aesthetically good and poor images highlights previously observed human aesthetic preferences in static two-dimensional scenes, such as preference for the colour blue or horizontal lines. By learning from brain-inspired features, it is hoped to allow a knowledge transfer of aesthetic expertise in photographs towards other types of visual media (paintings, movies, etc.). (C) 2018 Elsevier B.V. All rights reserved.

3.

Artificial Intelligence, Artists, and Art: Attitudes Toward Artwork Produced by Humans vs. Artificial Intelligence

人工智能、艺术家和艺术：对人类与人工智能所产生艺术品的态度

【First Author】Hong, Joo-Wha

【Abstract】This study examines how people perceive artwork created by artificial intelligence (AI) and how presumed knowledge of an artist's identity (Human vs. AI) affects individuals' evaluation of art. Drawing on Schema theory and theory of Computers Are Social Actors (CASA), this study used a survey-experiment that controlled for the identity of the artist (AI vs. Human) and presented participants with two types of artworks (AI-created vs. Human-created). After seeing images of six artworks created by either AI or human artists, participants (n = 288) were asked to evaluate the artistic value using a validated scale commonly employed among art professionals. The study found that human-created artworks and AI-created artworks were not judged to be equivalent in their artistic value. Additionally, knowing that a piece of art was created by AI did not, in general, influence participants' evaluation of art pieces' artistic value. However, having a schema that AI cannot make art significantly influenced evaluation. Implications of the findings for application and theory are discussed.

4.

Automating the black art: Creative places for artificial intelligence in audio mastering

自动魔法:人工智能在音频控制中的创造性位置

【First Author】Birtchnell, Thomas

【Source Title】GEOFORUM   2018.96

【Abstract】In this paper, we consider the impact of artificial intelligence (AI) in the creative economy of music production. One sector in particular, audio post-production, is experiencing rapid change due to AI and various other forms of automation. This spells major changes, now and in the future, for skills, employment and work. Many accounts on the role of machine automation in occupational instability specifically, reductions in human employment have focused on the manufacturing (assembly lines) and service (financial, legal and administration) sectors: so-called blue- and white-collar jobs. However, there are as yet only limited forays into the possible consequences of AI in the creative economy, in particular on 'no-collar jobs'. Creative occupations were previously understood to be immune from the disruptions of AI due to the high levels of intuition, affective knowledge, 'gut instinct', and other human 'assets' difficult to replicate by complex algorithms and intelligent machines. Drawing on empirical research on AI in audio post-production, this article contends that there are conflicting notions of the possible impacts of these new innovations on human expertise and digital skills. The article highlights change underway in this profession of audio mastering as workers in the creative industries collaborate and compete with AI-driven technological innovation.

5.

Artificial Neural Networks and Deep Learning in the Visual Arts: a review

回顾:视觉艺术中的人工神经网络与深度学习

【First Author】Santos, Iria

【Source Title】NEURAL COMPUTING & APPLICATIONS 2021.33

【Abstract】In this article, we perform an exhaustive analysis of the use of Artificial Neural Networks and Deep Learning in the Visual Arts. We begin by introducing changes in Artificial Intelligence over the years and examine in depth the latest work carried out in prediction, classification, evaluation, generation, and identification through Artificial Neural Networks for the different Visual Arts. While we highlight the contributions of photography and pictorial art, there are also other uses for 3D modeling, including video games, architecture, and comics. The results of the investigations discussed show that the use of Artificial Neural Networks in the Visual Arts continues to evolve and have recently experienced significant growth. To complement the text, we include a glossary and table with information about the most commonly employed image datasets.