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AI Related Papers on the Cover of *Nature or Science*

(2015.01~2021.08, incomplete survey)

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See more: <https://github.com/TOM-ZXian/AI-Related-Papers-Published-in-Nature-or-Science>



Cover Paper

AI玩游戏达到人类水准

Nature封面 2015.02.26

深度强化学习(DQN)+Atari游戏-DeepMind

Mnih V, Kavukcuoglu K, Silver D, et al. Human-level control through **deep reinforcement learning**[J]. Nature, 2015, 518(7540): 529-533.

<https://doi.org/10.1038/nature14236>



Cover Paper

机器人适应“残障”登上 Nature封面-2015.05.28

自适应机器人应对肢体损坏-法 国索邦大学领衔

Cully A, Clune J, Tarapore D, et al.
Robots that can adapt like animals[J].
Nature, 2015, 521(7553): 503-507.

<https://doi.org/10.1038/nature14422>

What it takes to end an
AIDS epidemic p. 226

Polar bears suffer through
lean summers p. 295

Sperm produced in ovary
of mutant fish p. 328

Science

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17 JULY 2015
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SPECIAL ISSUE

ARTIFICIAL INTELLIGENCE

Cover Paper

AI Special Issue登上 Science封面 2015.07.17

<https://science.sciencemag.org/content/349/6245>

Can your phone improve
your health? p. 1306

Vitamin C and cancer cell
metabolism pp. 1317 & 1391

In search of stem cells
p. 1319

Science

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**Machine
intelligence**

AI learns to read and
write letters p. 1332

Cover Paper

AI举一反三? Human-level概念学习 登上Science封面
2015.12.11

**贝叶斯极小样本学习-手写字体
层次概念学习-纽约大学领衔**

Lake B M, Salakhutdinov R,
Tenenbaum J B. Human-level **concept
learning** through probabilistic program
induction[J]. Science, 2015, 350(6266):
1332-1338.

[DOI: 10.1126/science.aab3050](https://doi.org/10.1126/science.aab3050)



Cover Paper

AlphaGo轰动全球

Nature封面 2016.01.28

AI击败人类围棋冠军-DeepMind

Silver D, Huang A, Maddison C J, et al.
Mastering the game of Go with deep
neural networks and tree search[J].
Nature, 2016, 529(7587): 484-489.

[doi:10.1038/nature16961](https://doi.org/10.1038/nature16961)

nature

THE INTERNATIONAL WEEKLY JOURNAL OF SCIENCE



Where words make sense

A semantic atlas of the cerebral cortex

PAGE 453

NATURAL HAZARDS

MOVING MOUNTAINS

Listening for landslides after Nepal's killer quake

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INDUSTRIAL CHEMISTRY

TRIAL SEPARATIONS

Seven processes that could change the world

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PALAEONTOLOGY

SOME KIND OF VERTEBRATE

Demystification of the Illinois Tully monster

PAGES 447, 496 & 500

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VOL 532, NO. 7600



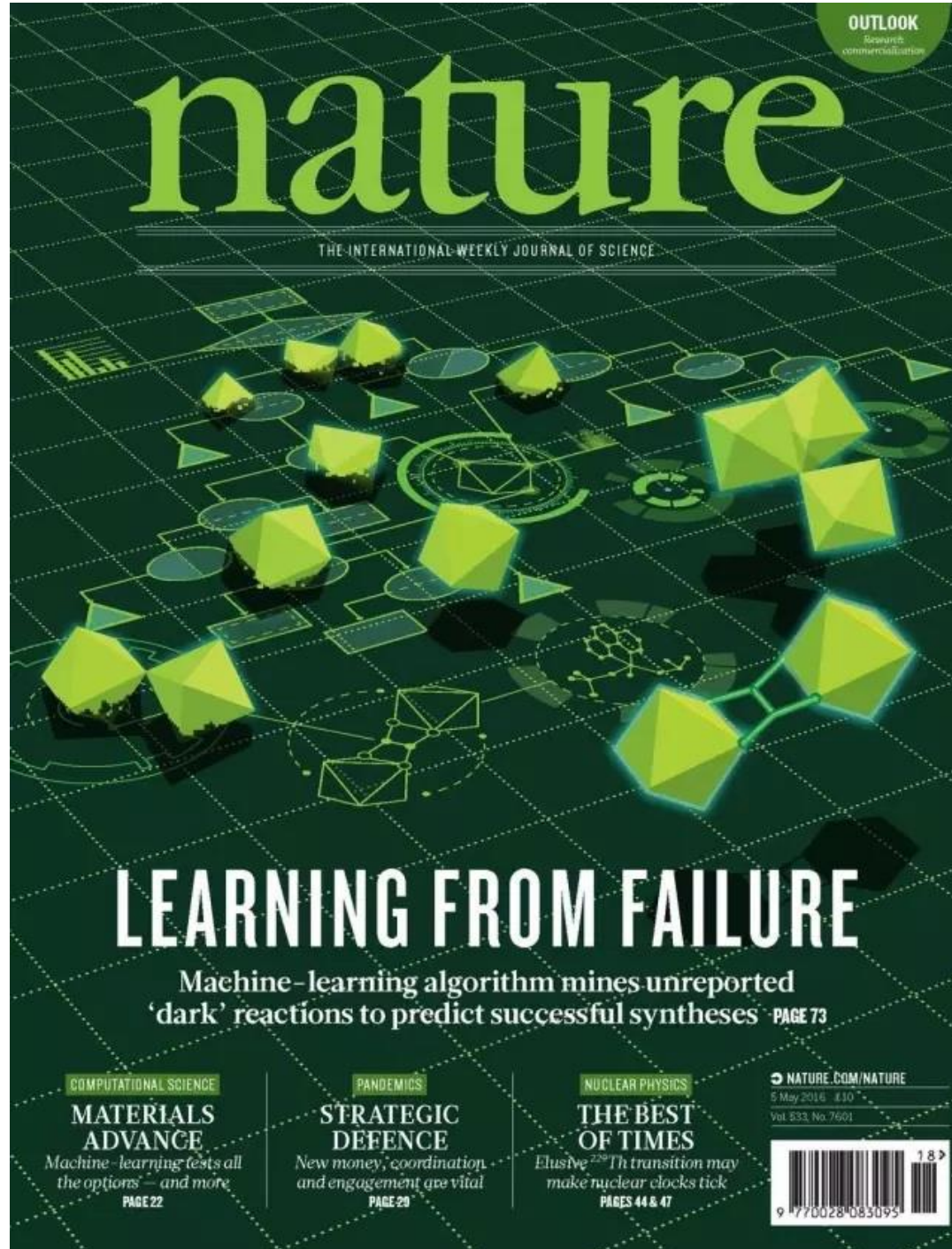
Cover Paper

大脑语义地图 登上Nature封面 面 2016.04.28

绘制出大脑语义地图(985 个英语常用词汇语义)-加州大学伯克利分校

Huth A G , Heer W D , Griffiths T L , et al. Natural speech reveals the semantic maps that tile human cerebral cortex[J]. Nature, 2016, 532(7600):453-458.

<https://doi.org/10.1038/nature17637>



Cover Paper

机器学习将掀起材料革命?

Nature封面 2016.05.05

利用“废弃”数据成功预测新材料的合成-哈佛大学

Raccuglia P, Elbert K C, Adler P D F, et al. Machine-learning-assisted materials discovery using failed experiments[J]. Nature, 2016, 533(7601): 73-76.

<https://doi.org/10.1038/nature17439>



Cover Paper

AI皮肤癌诊断达专家水平

Nature封面 2017.02.02

深度学习识别皮肤癌-斯坦福大学

Esteva A, Kuprel B, Novoa R A, et al.
Dermatologist-level classification of
skin cancer with deep neural
networks[J]. Nature, 2017, 542(7639):
115-118.

[doi:10.1038/nature21056](https://doi.org/10.1038/nature21056)



Cover Paper

Prediction Special Issue 登上Science封面 2017.02.03

<https://science.sciencemag.org/content/355/6324>

Robotic observatory makes
fast work of astronomy p. 476

A wet route to
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Human noise plagues
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Science

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DIGITAL CARDS WHIZ

AI beats humans at
challenging poker variant
p. 508



Cover Paper

AI拿下德州扑克

登上Science封面 2017.05.05

不完美信息博弈里程碑式突破-
加拿大阿尔伯塔大学

Moravčík M, Schmid M, Burch N, et al. **Deepstack**: Expert-level artificial intelligence in heads-up **no-limit poker**[J]. Science, 2017, 356(6337): 508-513.

[doi: 10.1126/science.aam6960](https://doi.org/10.1126/science.aam6960)



Cover Paper

AI有助于群体控制 登上 Nature封面 2017.05.18

随机 AI 增加人类之间的协作 性-耶鲁大学

Shirado H, Christakis N A. Locally noisy autonomous agents improve global human coordination in network experiments[J]. Nature, 2017, 545(7654): 370-374.

<https://doi.org/10.1038/nature22332>



Cover Paper

AI Transforms Science Special Issue登上Science封面 2017.07.07

<https://science.sciencemag.org/content/357/6346>



Cover Paper

基于DNA的神经网络 登上 Nature封面 2018.07.04

DNA竞争网络正确识别“分子” 手写数字-加州理工学院

Cherry K M, Qian L. Scaling up molecular pattern recognition with DNA-based winner-take-all neural networks[J]. Nature, 2018, 559(7714): 370-376.

<https://doi.org/10.1038/s41586-018-0289-6>

Tomorrow's Earth
pp. 1051, 1066, & 1079

Climate clues from Puerto Rico's
storm-damaged forest p. 1064

The weekly bird
migration report p. 1115

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**QUICK
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Flapping-wing robot models
insect flight pp. 1073 & 1089

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**“果蝇”机器人 登上Science
封面 2018.09.14**

**仿果蝇飞行机器人DelFly
Nimble-代尔夫特理工大学**

Karásek M, Muijres F T, De Wagter C, et al. A tailless aerial robotic flapper reveals that flies use torque coupling in rapid banked turns[J]. Science, 2018, 361(6407): 1089-1094.

[DOI: 10.1126/science.aat0350](https://doi.org/10.1126/science.aat0350)



Cover Paper

AlphaZero登上Science封面

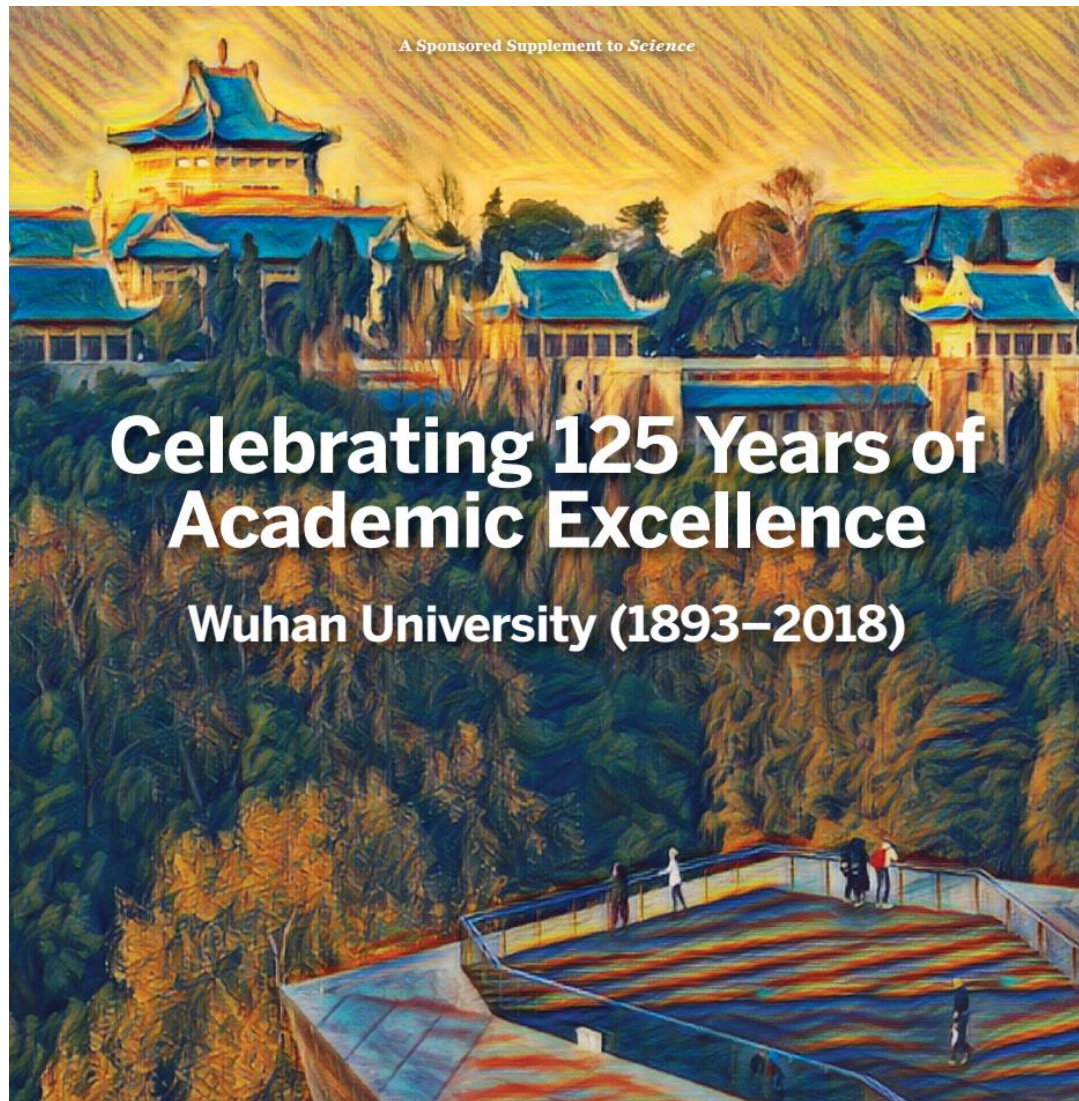
2018.12.07

最强棋类AI通杀三大棋- DeepMind

Silver D, Hubert T, Schrittwieser J, et al. A general reinforcement learning algorithm that masters chess, shogi, and Go through self-play[J]. Science, 2018, 362(6419): 1140-1144.

[DOI: 10.1126/science.aar6404](https://doi.org/10.1126/science.aar6404)

Cover Paper



AI画作登上 Science 武大 125周年庆Custom Publishing封面 2018.12.28 艺术风格迁移-武大

Celebrating 125 Years Of Academic Excellence: Wuhan University (1893–2018).

<https://link.zhihu.com/?target=http%3A//www.science-mag.org/collections/celebrating-125-years-academic-excellence-wuhan-university-1893-2018>

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Cover Paper

**果蝇大脑纳米级成像 登上
Science封面 2019.01.18**

**里程碑：看清果蝇大脑的4000
万个突触及连接-MIT领衔**

Gao R , Asano S M , Upadhyayula S ,
et al. Cortical column and whole-brain
imaging with molecular contrast and
nanoscale resolution[J]. Science, 2019,
363(6424):eaau8302.

[DOI: 10.1126/science.aau8302](https://doi.org/10.1126/science.aau8302)



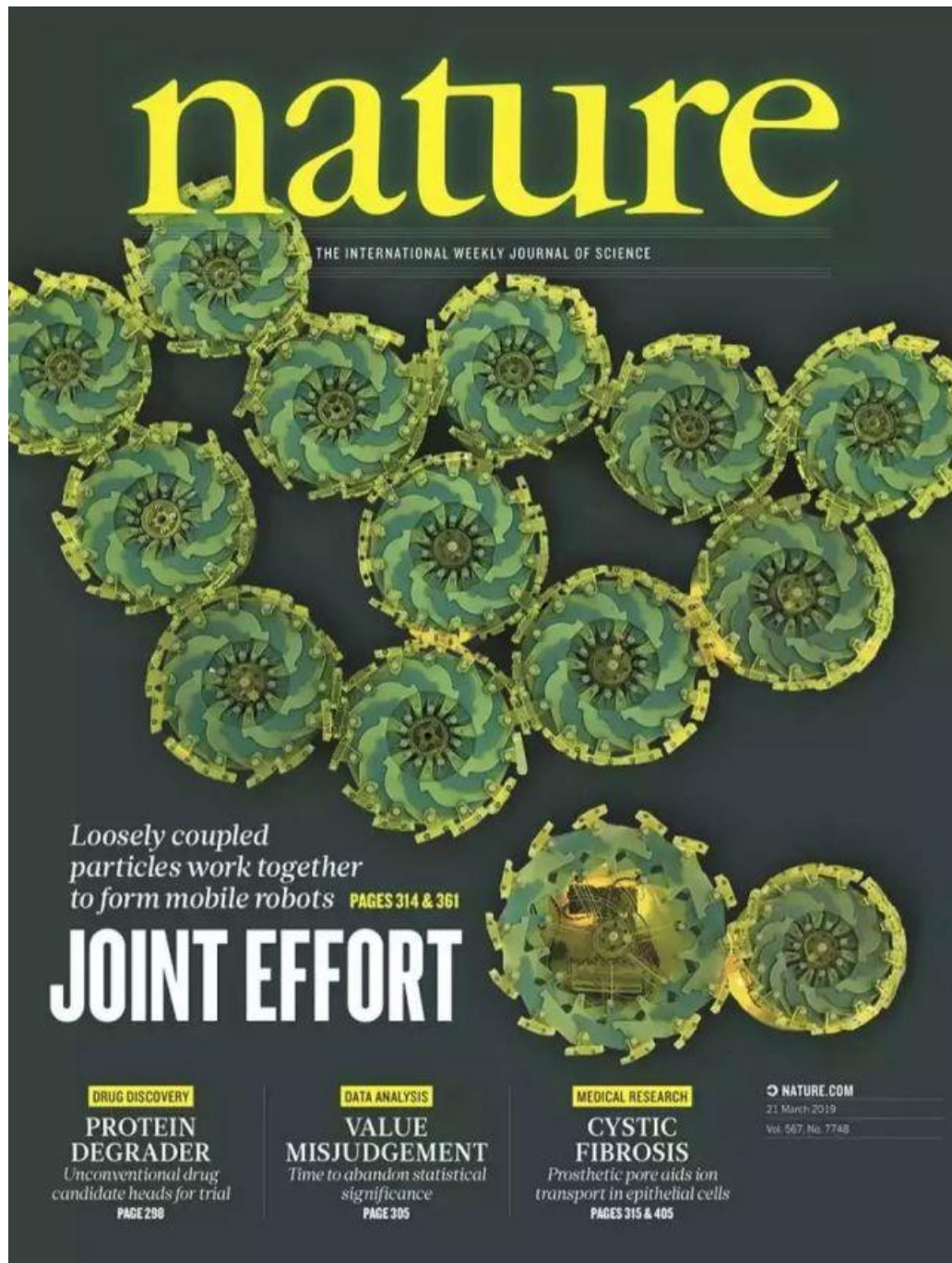
Cover Paper

量子机器学习算法 登上 Nature封面 2019.03.14

量子态空间作为特征空间进行 数据分类-IBM领衔

Havlíček V, Córcoles A D, Temme K, et al. Supervised learning with quantum-enhanced feature spaces[J]. Nature, 2019, 567(7747): 209-212.

<https://doi.org/10.1038/s41586-019-0980-2>



Cover Paper

仿生群体机器人 Nature封面

2019.03.21

“粒子机器人”可完成光导向运动、搬运物体和避障-哈佛大学

Li S, Batra R, Brown D, et al. **Particle robotics** based on statistical mechanics of loosely coupled components[J]. Nature, 2019, 567(7748): 361-365.

<https://doi.org/10.1038/s41586-019-1022-9>

nature

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FLYING SOLO

*Insect-sized robot achieves
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Cover Paper

最轻飞行机器人登上Nature封面
2019.06.27

“蜜蜂”机器人自重仅259毫克-哈佛大学

Jafferis N T, Helbling E F, Karpelson M, et al. Untethered flight of an insect-sized flapping-wing microscale aerial vehicle[J]. Nature, 2019, 570(7762): 491-495.

<https://doi.org/10.1038/s41586-019-1322-0>



Cover Paper

“天机”登上Nature封面

2019.08.01

清华大学团队发布全球首款异构融合类脑芯片

Pei J, Deng L, Song S, et al. Towards artificial general intelligence with hybrid **Tianjic chip** architecture[J]. Nature, 2019, 572(7767): 106-111.

<https://doi.org/10.1038/s41586-019-1424-8>



Cover Paper

多人德扑再登Science封面

2019.08.30

Pluribus 成功战胜了五名专家级人类玩家-Facebook 与卡耐基梅隆大学

Brown N, Sandholm T. Superhuman AI for multiplayer poker[J]. Science, 2019, 365(6456): 885-890.

[DOI: 10.1126/science.aay2400](https://doi.org/10.1126/science.aay2400)

A troubled debut for the world's
first malaria vaccine p. 1062

Ocean floor observations with
fiber optics pp. 1076 & 1103

Lactose fuels *Enterococcus* growth
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高分辨率重建89个神经元 Science封面 2019.11.29

德国马克斯·普朗克大脑研究所对小鼠的大脑皮层进行了成像和分析

Motta A, Berning M, Boergens K M, et al. Dense connectomic reconstruction in layer 4 of the somatosensory cortex[J]. Science, 2019, 366(6469): eaay3134.

[DOI: 10.1126/science.aay3134](https://doi.org/10.1126/science.aay3134)



Cover Paper

Facing facts 人脸识别偏见问题登上Nature封面 (NEWS | FEATURE) 2020.11.19

<https://www.nature.com/nature/volumes/587/issues/7834>



Cover Paper

AI 再次攻陷材料领域——助力非晶结构材料研究 登上 Nature封面 2021.01.07

无序材料的仿真模拟已迈出了质的步伐-ML算法实现10万高压非晶硅原子的模拟-英国牛津大学领衔

Deringer V L, Bernstein N, Csányi G, et al. Origins of structural and electronic transitions in disordered silicon[J]. Nature, 2021, 589(7840): 59-64. <https://doi.org/10.1038/s41586-020-03072-z>



Cover Paper

Nature封面 2021.03.04

浙大软体机器人成功挑战**马里亚纳海沟**

Li G, Chen X, Zhou F, et al. Self-powered **soft robot** in the Mariana Trench[J]. Nature, 2021, 591(7848): 66-71.

<https://doi.org/10.1038/s41586-021-03828-1>

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THE SILICON SOAPBOX

AI system goes head-to-head with
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Defensive move

Exercise helps prompt
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最强AI辩手 Nature封面

2021.03.18

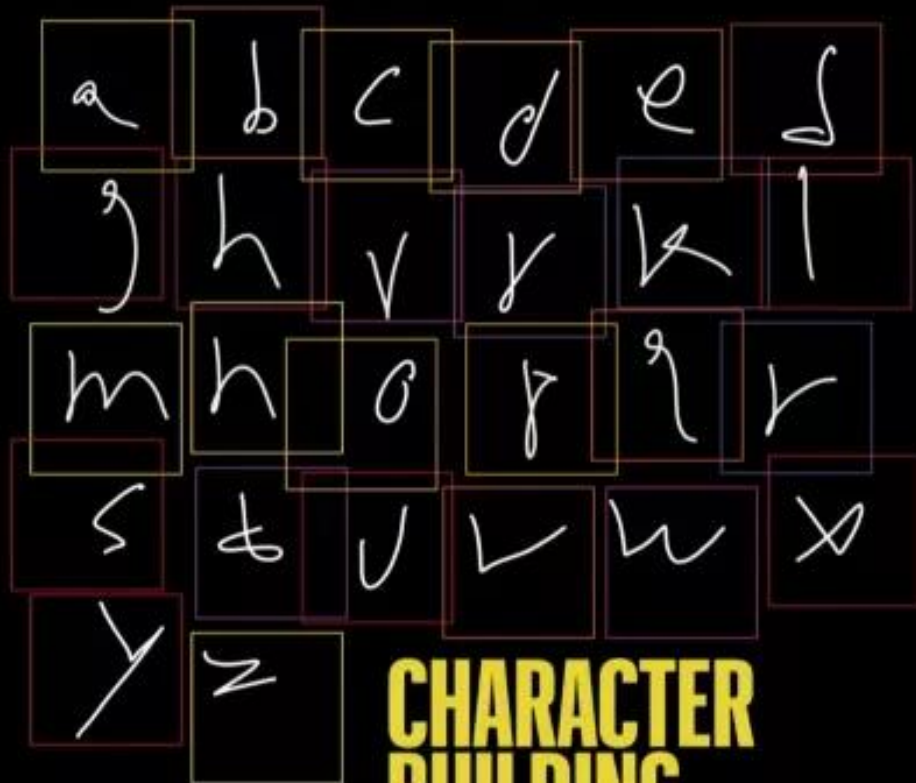
AI 系统Project Debater -IBM

Slonim N, Bilu Y, Alzate C, et al. An
autonomous debating system[J].
Nature, 2021, 591(7850): 379-384.

<https://doi.org/10.1038/s41586-021-03828-1>

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CHARACTER BUILDING

Brain-computer interface translates thoughts of handwriting into typed text

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How COVID-19 put evidence-based medicine to the test

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「意念手写」登上Nature封面
2021.05.13

斯坦福团队「意念手写」脑机接口重磅发布

Willett F R, Avansino D T, Hochberg L R, et al. High-performance **brain-to-text communication** via handwriting[J]. Nature, 2021, 593(7858): 249-254.

<https://doi.org/10.1038/s41586-021-03506-2>



Cover Paper

新算法**Swarm Learning**登上
Nature封面 2021.05.26

比联邦学习更安全，SL可保障
医疗数据共享-德国波恩大学

Warnat-Herresthal S, Schultze H, Shastry K L, et al. **Swarm Learning** for decentralized and confidential clinical machine learning[J]. Nature, 2021, 594(7862): 265-270.

<https://doi.org/10.1038/s41586-021-03583-3>

The international journal of science 8 July 2021

nature

HUMAN DATA

Computational
social science offers
fresh perspectives on
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Coronavirus
Open or closed – the
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计算社会学 Computational
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<https://www.nature.com/nature/volumes/595/issues/7866>



Cover Paper

RoseTTAFold登上Science封面 2021.07.15

蛋白质结构预测-华盛顿大学

Baek M, DiMaio F, Anishchenko I, et al. Accurate prediction of protein structures and interactions using a three-track neural network[J]. Science, 2021, 373(6557): 871-876.

[DOI: 10.1126/science.abj8754](https://doi.org/10.1126/science.abj8754)

The international journal of science / 26 August 2021

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PROTEIN POWER

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Cover Paper

AlphaFold2再登Nature封面 2021.07.21

人类蛋白质结构预测-DeepMind

Tunyasuvunakool K, Adler J, Wu Z, et al. Highly accurate protein structure prediction for the human proteome[J]. Nature, 2021, 596(7873): 590–596.

<https://doi.org/10.1038/s41586-021-03828-1>



Cover Paper

RNA结构预测 登上Science封面 2021.08.27

AI算法准确预测RNA三维结构-斯坦福大学

Townshend R, Eismann S, Watkins A, et al. Geometric deep learning of RNA structure[J]. Science, 2021, 373(6558): 1047-1051.

[DOI: 10.1126/science.abe5650](https://doi.org/10.1126/science.abe5650)

Thank you!

