【3.28】

**3.28每日一篇 | 外刊精读**

**artificial** intelligence：Your move  
   
How AI can make board games better  
   
【1】Board games have long fascinated **artificial**-intelligence (AI) researchers. They have clear rules, well-**defined** playing fields and objective winners and losers. This makes them perfect “sandpits” for training AI software. Sometimes, though, their rules contain **glitches**. Aficionados of Go will be familiar with ko fights—**situations** in which the basic rule set would **permit** a game to carry on for ever, and for which an exception had to be created. Avoiding similar problems in newly invented games is something AI can help with.  
   
【2】That, at least, is the experience of Alan Wallat, a board-game **designer** from London. His latest offering is Sirius Smugglers, in which **interstellar** **merchants** try to make an **illicit** profit. In the olden days, **checking** its rules would have **involved** lots of tests by human players, who would probably have wanted to be paid—in beer, perhaps, if not in cash.Panda Foreign Magazine **intensive** Reading:Respect for Originality, Piracy Must Be Punished  
   
【3】Instead, he took his **brainchild** to Tabletop R&D, an AI **startup**, where a game-playing algorithm allowed him to play thousands of times in the **blink** of an eye. He was then able to **scan** the results for irregularities, **statistical** biases and any features that were under- or over-used.  
   
【4】It was here he discovered a problem. A **quirk** in the rules meant the decision to end the game could rest with the losing players. Whoever was ahead, and therefore had the greatest **incentive** to bring matters to a close, was sometimes unable, alone, to **trigger** the **condition** which would finish the game. Like Go without the ko-fight exception, Sirius Smugglers could thus go on **indefinitely**.  
   
【5】The minds behind Tabletop, Diego Perez-Liebana and Raluca Gaina, are computer scientists at Queen Mary, a college of the University of London, who wanted to build a general games-playing AI platform on the cheap. The approach which built the AI models that could play Go well enough to beat world **champions** **involved** a system playing itself, over and over again, and learning from its victories and defeats until it reached **superhuman** **potential**.  
   
【6】But that requires a lot of computing time. Instead, they chose to use a less **resource**-**intensive** approach called a Monte Carlo tree search, to look forward to possible future positions and choose **appropriate** play from among them. It was intended as an academic exercise, says Dr Perez-Liebana, but in doing it they realised they had **accidentally** developed a tool that had value in its own right as an aid for game **designers** **seeking** to perfect their **creations**.Panda Foreign Magazine **intensive** Reading:Respect for Originality, Piracy Must Be Punished  
   
【7】Thinking caps on  
For this to happen, the AI must be taught to play like a human. Unless told otherwise, AIs are **liable** to **chase** victory single-mindedly but without **strategic** vision, like a chess player who **refuses** to **sacrifice** **pieces** for a stronger long-term position. This training can be **subtle**. In games where players are **assigned** information **hidden** from their **opponents** (for example, in card games like bridge or **poker**, where others cannot see a player’s hand), **designers** must decide whether to give the AI the ability to memorise play so far and to count the pack perfectly, or else to act in a sloppier—and more humanlike—manner.  
   
【8】Giving the AI more time to think, and so plan for a **wider** range of outcomes, is equivalent to **adjusting** the skill with which it plays. To **simulate** **beginners**, it can be set to act as if on **instinct**, after less than a tenth of a second. To **mimic** **competence** it is allowed to think for as long as five seconds per move, and is therefore able to plan many moves ahead.  
   
【9】When they’re good, they’re good, says Dr Gaina of the **resulting** models. Testing the approach with a copy of Terraforming Mars, a famously **weighty** **strategy** title, she **admits** she found the system was more than **capable** of **defeating** her.  
   
【10】A game-run provides enough **detailed** data to let **designers** **tweak** the **parameters** they care about, from ensuring **proceedings** are fair to avoiding long **periods** of **dull** **gameplay**. At least, that is the plan. Mr Wallat is Tabletop’s first customer. More may soon be **tempted**. Fun is hard to measure, says Dr Gaina, but things that make a game bad, never-endingness among them, are easier to spot.  
   
   
   
**①短语**：

1. 原文：their rules contain glitches. Aficionados of Go will be familiar with ko fights

词典：be familiar with：To have a good knowledge or understanding of something.

熟悉；通晓；精通

例句：She is familiar with the company’s procedures.

她熟悉公司的流程。

Are you familiar with this software?

你熟悉这个软件吗？

He is not familiar with local customs.

他不熟悉当地的习俗。

1. 原文：situations in which the basic rule set would permit a game to carry on for ever,

词典：carry on：To continue doing something.

继续；坚持

例句：Despite the interruption, she carried on with her presentation.

尽管受到干扰，她还是继续了她的演讲。

Carry on with your work while I am away.

我不在时，你们继续工作。

He told us to carry on without him.

他让我们在没有他的情况下继续。

1. 原文：who would probably have wanted to be paid—in beer, perhaps, if not in cash.

词典：in cash：Using physical money such as coins or banknotes.

以现金形式

例句：Do you prefer to pay in cash or by card?

你更喜欢用现金还是刷卡支付？

He bought the car in cash.

他用现金买了这辆车。

Please bring the exact amount in cash.

请携带准确金额的现金。

1. 原文：where a game-playing algorithm allowed him to play thousands of times in the blink of an eye.

词典：in the blink of an eye：Very quickly; in an extremely short time.

转瞬之间；一眨眼的功夫

例句：The thief disappeared in the blink of an eye.

小偷转瞬之间就消失了。

Life can change in the blink of an eye.

生活可能在一眨眼的功夫就发生变化。

The event was over in the blink of an eye.

活动在转瞬之间就结束了。

1. 原文：A quirk in the rules meant the decision to end the game could rest with the losing players.

词典：rest with：To be the responsibility of someone.

取决于；在于

例句：The final decision rests with the committee.

最终决定权在于委员会。

It rests with you to make the next move.

下一步行动取决于你。

The responsibility rests with the manager.

责任在于经理。

1. 原文：to look forward to possible future positions and choose appropriate play from among them.

词典：look forward to：To anticipate something with pleasure.

期待；盼望

例句：I look forward to meeting you.

我期待与你见面。

She is looking forward to her vacation.

她期待着她的假期。

They look forward to the upcoming concert.

他们期待着即将到来的音乐会。

1. 原文：AIs are liable to chase victory single-mindedly but without strategic vision,

词典：be liable to：Likely to do something or to happen.

易于；可能

例句：He is liable to make mistakes when tired.

他在疲倦时容易犯错。

This area is liable to flooding.

这个地区容易发生洪水。

Children are liable to catch colds in winter.

孩子们在冬天容易感冒。

1. 原文：Giving the AI more time to think, and so plan for a wider range of outcomes, is equivalent to adjusting the skill with which it plays.

词典：be equivalent to：To be equal in value, amount, function, meaning, etc.

相当于；等同于

例句：One dollar is equivalent to 6.5 yuan.

一美元相当于6.5元人民币。

His silence is equivalent to an admission of guilt.

他的沉默等同于承认罪行。

This qualification is equivalent to a degree.

这个资格相当于一个学位。

1. 原文：it can be set to act as if on instinct,

词典：on instinct：Based on innate inclination or natural tendency.

凭直觉

例句：She acted on instinct and saved the child.

她凭直觉行事，救了孩子。

He reached out on instinct to catch the falling vase.

他本能地伸手。

1. 原文：she admits she found the system was more than capable of defeating her.

词典：capable of：Having the ability, fitness, or quality necessary to do or achieve a specified thing.

有能力的；能够

例句：She is capable of handling the situation.

她有能力处理这种情况。

He is capable of running a mile in under four minutes.

他能在四分钟内跑完一英里。

They are capable of achieving great things.

他们有能力取得伟大的成就。

②长难句

1、原文：In the olden days, checking its rules would have involved lots of tests by human players, who would probably have wanted to be paid—in beer, perhaps, if not in cash.

1. 分析：本句话中In the olden days为时间状语，动名词checking its rules作主语，would have involved为谓语，lots of tests为宾语，by human players为介词短语，后为定语从句。从句中would probably have wanted为谓语，to be paid为不定式作宾语，破折号后为插入信息，对支付方式进行详细说明。
2. 译文：如果放在以前，检查规则需要大量真人玩家进行测试，他们大多希望获得报酬，就算不是现金，至少也要几杯啤酒。
3. 原文：The minds behind Tabletop, Diego Perez-Liebana and Raluca Gaina, are computer scientists at Queen Mary, a college of the University of London, who wanted to build a general games-playing AI platform on the cheap.
4. 分析：The minds behind Tabletop为主语，Diego Perez-Liebana and Raluca Gaina为主语的同位语， are为系动词，computer scientists为表语，at Queen Mary, a college of the University of London为地点状语，后为定语从句。wanted to build为谓语，a general games-playing AI platform为宾语，on the cheap为介词短语。
5. 译文：Tabletop的两位创始人，迭戈·佩雷斯·利埃巴纳（Diego Perez-Liebana）和拉露卡·盖纳（Raluca Gaina），是伦敦大学女王玛丽学院的计算机科学家。

**③写作技巧:**

This makes them perfect “sandpits” for training AI software. Sometimes, though, their rules contain glitches.

**表达：**“Sandpits for…” 是一个常见的比喻表达，通常用于描述一个安全的、实验性质的环境，用来进行尝试、测试或开发。这个表达来源于实际的“沙坑”（sandpit），沙坑是孩子们用来玩耍的地方，它提供了一个无风险的环境，孩子们可以在这里尽情探索和试验，而不必担心会破坏什么。这种表达通常带有一种轻松、容错的意味，适用于需要尝试、失败和改进的情况。在技术和AI等领域，它常用来形容一个用来进行测试、开发或训练的空间。

例句：These virtual environments act as sandpits for developing and testing AI algorithms.

这些虚拟环境充当了开发和测试AI算法的沙坑。

**④背景知识：**

Tabletop R&D：

Tabletop R&D是一家位于英国伦敦的公司，致力于为桌面游戏设计师提供自动化测试和优化服务。该公司通过数字化桌面游戏的创建，利用计算智能技术对游戏进行数千次自动模拟，从而深入分析游戏机制，帮助设计师优化游戏设计。Tabletop R&D的服务旨在补充传统的人工游戏测试，使得游戏开发者能够更加高效地识别和解决游戏中的问题，尤其是在游戏的视觉效果、趣味性和互动性方面。

该公司在业内受到了广泛的关注与好评，特别是其AI辅助测试技术被认为是未来游戏开发的重要趋势。Tabletop R&D的客户表示，这种创新的测试方式能够大大提高开发效率，减少不必要的重复工作。未来，Tabletop R&D计划在各种游戏展会中展示其平台，并希望与更多游戏设计师和开发者建立合作关系。通过这一平台，Tabletop R&D旨在推动游戏行业的技术创新和发展。

**⑤段落大意：**

【1】桌游是AI训练的理想“沙盒”，但规则漏洞可通过AI解决

【2】过去检查桌游规则需大量玩家测试，且可能需要报酬

【3】艾伦·沃拉特通过Tabletop R&D的AI算法快速测试游戏，找出问题

【4】艾伦发现规则中漏洞可能使游戏无限进行下去

【5】Tabletop的创始人希望以低成本构建一个通用AI游戏平台，让AI自我博弈

【6】Tabletop的创始人外开发出了一种有助于游戏设计师优化作品的工具

【7】设计师需决定让AI具备完美计算能力或更随意地行动

【8】AI可以模拟不同水平的棋手

【9】AI已有能力击败人类

【10】通过游戏数据分析，设计者可以调整参数确保游戏公平并避免无聊