未来产业周度要闻

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关键词：智能算力、智能体、具身智能

本周头条

1、Virtual Power Plants Are Finally Having Their Moment

 German utility RWE implemented the first known virtual power plant (VPP) in 2008, aggregating nine small hydroelectric plants for a total capacity of 8.6 megawatts. In general, a VPP pulls together many small components—like rooftop solar, home batteries, and smart thermostats—into a single coordinated power system. The system responds to grid needs on demand, whether by making stored energy available or reducing energy consumption by smart devices during peak hours. VPPs had a moment in the mid-2010s, but market conditions and th

（新闻来源：IEEE Spectrum）

2、Amazon ’s “ Catalog AI ” Product Platform Helps You Shop Smarter

 If you ’ ve shopped on Amazon in the past few months, you might have noticed it has gotten easier to find what you ’ re looking for. Listings now have more images, detailed product names, and better descriptions. The website ’ s predictive search feature uses the listing updates to anticipate needs and suggests a list of items in real time as you type in the search bar. The improved shopping experience is thanks to Abhishek Agrawal and his <a href="https://www.carbon6.io/blog/amazon-project-starfish-fba-prep-seller-updates-2025-08-01/" rel="noopener norefer

（新闻来源：IEEE Spectrum）

3、In 1844, Chess Was Already Online

 On 18 November 1844, the Washington Chess Club challenged its counterparts in Baltimore to a match. Two teams were organized, and at 4 p.m. on 26 November, the first game commenced with three consulting

动态

1、Moving towards a more circular automative sector with agreement on end-of-life vehicles

European Commission Press release Brussels, 12 Dec 2025 The European Commission welcomes th e provisional agreement reached today between the European Parliament and the Council on the Co mmission's proposed Regulation on End-of-Life Vehicles, covering the design, production and end -of-life treatment of vehicles.

（新闻来源：EU Commission - Press）

2、Blockchain-Anchored Audit Trail Model for Transparent Inter-Operator Settlement

arXiv:2512.09938v1 Announce Type: new

Abstract: The telecommunications and financial services industries face substantial challenges in inte r-operator settlement processes, characterized by extended reconciliation cycles, high transaction co sts, and limited real-time transparency. Traditional settlement mechanisms rely on multiple interme diaries and manual procedures, resulting in settlement periods exceeding 120 days with operational c osts consuming approximately 5 percent of total revenue. This research presents a blockchain-ancho red audit trail model enabling transparent, immutable, and automated inter-operator settlement. Th e framework leverages distributed ledger technology, smart contract automation, and cryptographic verification to establish a unified, tamper-proof transaction record. Empirical evaluation demonstrat es 87 percent reduction in transaction fees, settlement cycle compression from 120 days to 3 minutes

（新闻来源：arXiv CS）

3、This Low-Cost Stopgap Tech Can Fix the Grid

 The power surging through transmission lines over the iconic stone walls of England ’ s northern countryside is pushing the United Kingdom ’ s g rid to its limits. To the north, Scottish wind farms have doubled their output over the past decade. In the south, where electricity demand is heaviest, electrification and new data centers promise to draw more power, but new generation is falling short. Construction on a new 3,280-megawatt nuclear po wer plant west of London lags years behind schedule. The result is a lopsided flow of power that ’ s maxing out transmission corridors from the Highlands to London. That grid strain won ’ t e ase any time soon. New lines linking Scotland to southern England are at least three to four years fro

（新闻来源：IEEE Spectrum）

4、Congress imposes new security restrictions on U.S. researchers

But new defense bill drops or weakens some controversial proposals

（新闻来源：Science）

5、Cold Metal Fusion Makes It Easy to 3D Print Titanium

 CADmore Metal has introduced a fresh ta

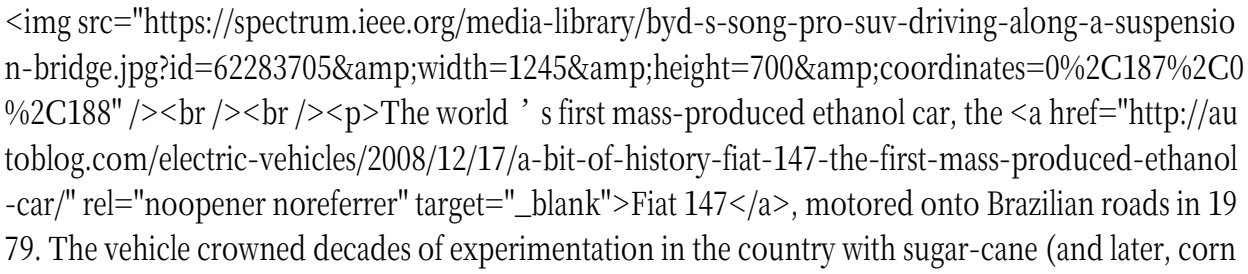
动态

6、Young people encouraged to Reach for the Sky as government announces £750,000 to create the next generation of aviators

Funding ensures young people from all backgrounds can learn about the varied, highly skilled jobs and future opportunities in aviation across the UK.

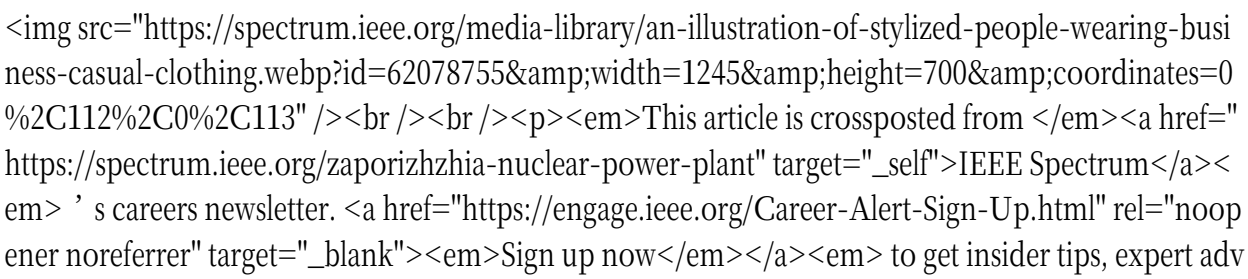
（新闻来源：UK Government - News）

7、BYD’s Engine Flexes Between Ethanol, Gasoline, and Electricity



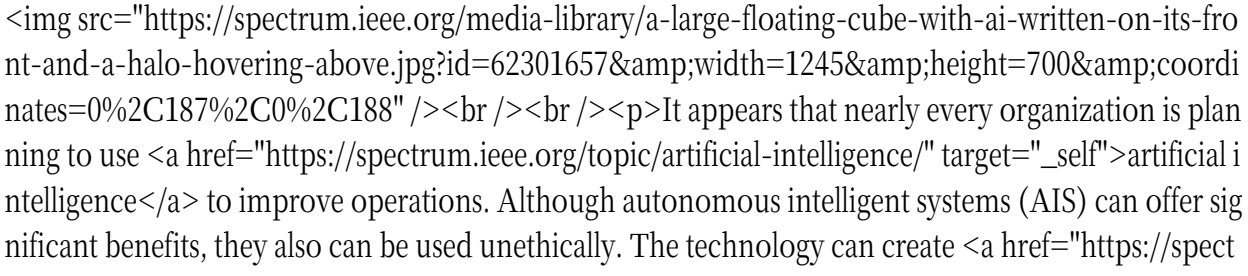
（新闻来源：IEEE Spectrum）

8、When to Leave a Toxic Team



（新闻来源：IEEE Spectrum）

9、Two New AI Ethics Certifications Available from IEEE



动态

10、DB2-TransF: All You Need Is Learnable Daubechies Wavelets for Time Series Forecasting

arXiv:2512.10051v1 Announce Type: new

Abstract: Time series forecasting requires models that can efficiently capture complex temporal dependencies, especially in large-scale and high-dimensional settings. While Transformer-based architectures excel at modeling long-range dependencies, their quadratic computational complexity poses limitations on scalability and adaptability. To overcome these challenges, we introduce DB2-TransF, a novel Transformer-inspired architecture that replaces the self-attention mechanism with a learnable Daubechies wavelet coefficient layer. This wavelet-based module efficiently captures multi-scale local and global patterns and enhances the modeling of correlations across multiple time series for the time series forecasting task. Extensive experiments on 13 standard forecasting benchmarks demonstrate that DB2-TransF achieves comparable or superior predictive accuracy to conventional Transforme

（新闻来源：arXiv CS）

11、Embodied Intelligence Pioneer Robotera Secures RMB 1 Billion in Series A+ Funding

（新闻来源：philippinetimes.com）

12、UK and Singapore launch a regulatory innovation corridor to speed up access to breakthrough health technologies

Patients in the UK and Singapore could gain faster access to cutting-edge healthcare innovations under a new partnership bringing two globally respected regulators together with one of the world ’ s leading biotech creators.

（新闻来源：UK Government - News）

13、Entrepreneurship Program Brings Incubator Ideas to More Countries

 Technology evolves rapidly, and innovation is key to business survival, so mentoring young professionals, promoting entrepreneurship, and connecting tech startups to a global network of experts and resources are essential. Some IEEE volunteers do all of the above and more as part of the IEEE Entrepreneurship Ambassador Program. The program was launched in 2018 in IEEE Region 8 (Europe,

（新闻来源：IEEE Spectrum）

14、This Toy Electric Stove Was Dangerously Realistic

 Introduced in 1930 by Lionel Corp.—better known for its electric model trains—the fully functional toy stove shown at top had two electric b

动态

15、AWS and OpenAI announce multi-year strategic partnership

OpenAI and AWS have entered a multi-year, $38 billion partnership to scale advanced AI workloads. AWS will provide world-class infrastructure and compute capacity to power OpenAI’s next generation of models.

（新闻来源：OpenAI Blog）

16、Tiny Chips Could Lead to Giant Power Savings

 Even if a GPU in a data center should only require 700 watts to run a large language model, it may realistically need 1,700 watts because of inefficiencies in how electricity reaches it. That’s a problem Peng Zou and his team at startup PowerLattice say they have solved by miniaturizing and repackaging high-voltage regulators. The company claims that its new chiplets deliver up to a 50 percent reduction in power consumption and twice performance per watt by sizing down the voltage conversion process and moving it significantly closer to processors. <h2>Shrinking

（新闻来源：IEEE Spectrum）

17、TRUCE: TRUsted Compliance Enforcement Service for Secure Health Data Exchange

arXiv:2512.09959v1 Announce Type: new

Abstract: Organizations are increasingly sharing large volumes of sensitive Personally Identifiable Information (PII), like health records, with each other to better manage their services. Protecting PII data has become increasingly important in today's digital age, and several regulations have been formulated to ensure the secure exchange and management of sensitive personal data. However, at times some of these regulations are at loggerheads with each other, like the Health Insurance Portability and Accountability Act (HIPAA) and Cures Act; and this adds complexity to the already challenging task of Health Data compliance. As public concern regarding sensitive data breaches grows, finding solutions that streamline compliance processes and enhance individual privacy is crucial. We have developed a novel TRUsted Compliance Enforcement (TRUCE) framework for secure data exchange w

（新闻来源：arXiv CS）

18、Arrest made in connection to large-scale waste dumping incidents

A 56-year old man has been arrested during a day of action to tackle waste crime in Lancashire.

（新闻来源：UK Government - News）

19、UK and Malaysia deepen climate partnership through the UK PACT 2.0 Country Fund

UK-Malaysia PACT 2.0 will support the country’s ambitious net-zero transition through targeted, high-impact projects.

（新闻来源：UK Government - News）

动态

20、Cross-Layer Isochronous Diffusion Protocol (CIDP): A Rigorous Information-Theoretic and Control-Theoretic Framework for Sovereign Tactical Anonymity

arXiv:2512.09954v1 Announce Type: new

Abstract: Next-generation tactical networks face a critical Anonymity Trilemma: it is impossible to si multaneously achieve strong anonymity, low latency (isochrony), and low bandwidth overhead und er a global passive adversary. CIDP breaks this deadlock by injecting physical-layer entropy via rapid antenna sidelobe modulation, enabling near-isochronous, low-overhead anonymous communicati on. CIDP jointly designs: (a) a Lyapunov drift-plus-penalty network controller that stabilizes queues and maximizes entropy injection; (b) a robust discrete-time Control Barrier Function (RaCBF) filte r that provably enforces deterministic jitter bounds for real-time flows despite uncertainty; and (c) a convex Sidelobe Time Modulation (SLTM) optimization that spreads signals into the antenna null-s pace to mask transmissions. We explicitly augment the classical anonymity bound with a physical-la

（新闻来源：arXiv CS）

简讯

1、IEEE President ’s Note: Engineering With Purpose

 Innovation, expertise, and efficiency often take center stage in the engineering world. Yet engineering ’s impact lies not only in technical advancement but also in its ability to serve the greater good. This foundational principle is behind IEEE ’s public imperative initiatives which apply our efforts and expertise to support our mission to advance technology for humanity with a direct benefit to society. <h2>Serving society </h2> Public imperative activities and initiatives serve society by promoting understanding, impact for humans and our environment, and responsible use of science and technology. These initiatives encompass a wide range of efforts, including<a href="https://move.ieeeusa.org/about/stem-outreach/" rel="noopener noreferrer" target="_blank"> STEM outr

（新闻来源：IEEE Spectrum）

2、President von der Leyen opens the second Conference of the Global Alliance to Counter Migrant Smuggling.

European Commission News Brussels, 12 Dec 2025

President von der Leyen this week gave the keynote speech at the second Conference of the Global Alliance to Counter Migrant Smuggling in Brussels. The confere...

（新闻来源：EU Commission - Press）

3、Intelligently Weighting Multiple Reference Models for Direct Preference Optimization of LLMs

arXiv:2512.10040v1 Announce Type: new

Abstract: Fine-tuning is integral for aligning large language models (LLMs) with human preferences. Multiple-Reference Preference Optimization (MRPO) builds on Direct Preference Optimization (DPO) by fine-tuning LLMs on preference datasets while regularizing the policy towards a mixture of reference models to leverage their collective desirable properties. However, current methods for setting the reference weights are ad-hoc and statistically unsound, leading to unreliable performance. To address this, we introduce four new weighting strategies: two offline methods that leverage held-out validation signal; one online method that uses a sliding-window estimator to reduce overfitting; and an online method that treats reference weighting as a K-armed bandit via Thompson Sampling. Experiments using Qwen2.5-0.5B as the policy model and seven reference models from the Llama, Mis

（新闻来源：arXiv CS）

4、How AI Will Change Chip Design

 The end of Moore ’s Law is looming. Engineers and designers can do only so much to miniaturize transistors and <a href="https://spectrum.ieee.org/cerebras-giant-ai-chip-now-has-a-trillions-more-transistors" t

简讯

5、Trump Signs Executive Order That Threatens to Punish States for Passing AI Laws

The order creates a Justice Department task force to challenge state AI laws and directs the Commerce Department to pull future broadband funding from states that pass “ onerous ” legislation.
（新闻来源：Wired）