GT CDAIT
Biweekly IoT News Digest (04/25 – 1)

Digest is compiled by Alain Louchez, CDAIT Co-founder & Director Emeritus

CHRONICLE OF DIGITAL TRANSFORMATION (DT) THROUGH INTERNET OF THINGS TECHNOLOGIES
Some biweekly perspectives on DT from around the globe gathered by CDAIT - 50 added for this Digest (3550 entries since April 1, 2022) https://cdait.gatech.edu/sites/default/files/2025-04/Digital_Transformation_Through_IoT_Technologies_as-of-mid-april-2025.pdf

GOVERNANCE & THE INTERNET OF THINGS

Nick Flaherty, "**Driving a European supply chain for World IoT Day**," EE News Europe, April 9, 2025 https://www.eenewseurope.com/en/driving-a-european-supply-chain-for-world-iot-day/

Iain Davidson, "**Will IoT Downtime Be the Biggest Risk of the Next Decade?**" EE Times Europe, April 9, 2025 https://www.eetimes.eu/will-iot-downtime-be-the-biggest-risk-of-the-next-decade/

Maria Korolov, "**10 things you should include in your AI policy**," CSO, April 8, 2025 https://www.csoonline.com/article/3950176/10-things-you-should-include-in-your-ai-policy.html

Emma Woollacott, "**Zero trust gains momentum amid growing network visibility challenges**," IT Pro, April 4, 2025 https://www.itpro.com/security/zero-trust-gains-momentum-amid-growing-network-visibility-challenges

Peter Jeydel, James Koenig, David Navetta & Laura Hamady, "**New DOJ National Security Division Data Security Rules Take Effect on April 8: Is Your Organization Exposed**?" Troutman Pepper Locke, Regulatory Oversight, April 3, 2025 https://www.regulatoryoversight.com/2025/04/new-doj-national-security-division-data-security-rules-take-effect-on-april-8-is-your-organization-exposed/

Devdiscourse posting, "**AI, IoT, and predictive tech rewriting rules of green transport**," Devdiscourse, April 2, 2025 https://www.devdiscourse.com/article/technology/3329391-ai-iot-and-predictive-tech-rewriting-rules-of-green-transport

IoT News and Market Reports
(First Half of April 2025)

- Selected IoT-related announcements and featured activities/topics gathered by CDAIT from governments; agencies; consortia; alliances; associations; standards, research and other similar groups around the world – 15 entries: https://cdait.gatech.edu/sites/default/files/2025-04/IoT_News_Filings_April_2025_First_Half.pdf

- Sample list of IoT-related market reports gathered by CDAIT – 50 entries: https://cdait.gatech.edu/sites/default/files/2025-04/IoT_Market_Reports_April_2025_First_Half.pdf

Georgia Tech IoT-related Info/Research Noticed by CDAIT

- Gong, Xuejian, Mulang Song, Shu Wang, Roger J. Jiao, and Petri Helo, "**Crowdsourced Manufacturing in Industry 4.0: Implications and Prospects**," Systems 13, no. 3 (2025): 18 https://www.proquest.com/openview/4589645dfaf8d75dd11d0dac06e468c5/1?cbl=2032325&pq-origsite=gscholar

- Wang, Shu, and Roger J. Jiao, "**Cognitive intelligent task allocation for human-automation symbiosis in Industry 5.0 manufacturing systems via non-cooperative game theory: a bi-level optimization approach,**" The International Journal of Advanced Manufacturing Technology 136, no. 3 (2025): 1717-1739 https://link.springer.com/article/10.1007/s00170-024-14890-0

- Ramnarine, Ishwar D., Tarek A. Sherif, Abdulrahman H. Alorabi, Haya Helmy, Takahiro Yoshida, Akito Murayama, and Perry PJ Yang, "**Urban revitalization pathways toward zero carbon emissions through systems architecting of urban digital twins,**" Environment and Planning B: Urban Analytics and City Science (2025): 23998083251318142 https://journals.sagepub.com/doi/full/10.1177/23998083251318142?casa_token=MAHZsE5P71AAAAAA%3AM1eyfeempsPRSRJHWyLYtuGAdwX_NqIYxhVgOOahx8rJ8AT5CTjpLAqGSb7OUgFYbo7pGq2Z6td-

---

OF NOTE: HANNOVER MESSE 2025, themed "Shaping the Future with Technology," took place from March 31 to April 4, 2025, at the Hannover Exhibition" Grounds, Germany – See: "**Hannover Messe 2025,**" IoT World Today https://www.iotworldtoday.com/keyword/hannover-messe-2025; "**IoT Now's CEO Guide to Hannover Messe 2025 covering the edge, cybersecurity, robotics and more,**" https://www.iot-now.com/2025/03/18/150403-iot-nows-ceo-guide-to-hannover-messe-2025-covering-the-edge-cybersecurity-robotics-and-more/?source=fn; Nattalyn Teng and Joanne Goh, "**Will Hannover Messe 2025 provide the answers to industrial challenges?**" Omdia, March 26, 2025 *https://omdia.tech.informa.com/blogs/2025/march/will-hannover-messe-2025-provide-the-answers-to-industrial-challenges* -- Hannover Messe: A landmark event in the history of the Industrial 4.0: *"INDUSTRIE 4.0: The 4th Industrial Revolution and the Internet of Things" was published by VDI (Association of German Engineers) on April 1, 2011, just in advance of the Hannover Fair (Messe) 2011."* Source: https://www.dfki.de/en/web/news/ten-years-of-industrie-4-0-interview-wolfgang-wahlster-cea-dfki

---

Special Reading Suggestions

- Elizabeth Greenberg, "**Enterprise IoT Market Growth Set for Resurgence After Slow Year**," Digit News, April 10, 2025 https://www.digit.fyi/enterprise-iot-market-growth-set-for-resurgence-after-slow-year/

- Pahi Mehra, "**As IoT matures, enterprises bet on AI-powered autonomy**," Techcircle, April 9, 2025 https://www.techcircle.in/2025/04/09/as-iot-matures-enterprises-bet-on-ai-powered-autonomy

- Raghav Kadian, "**State of enterprise IoT in 2025: Market recovery, AI integration, and upcoming regulations,**" IoT Analytics, April 8, 2025 https://iot-analytics.com/state-of-enterprise-iot/

- Manish Kothari, "**How AI is Transforming IoT Security,**" TechCircle, April 7, 2025 https://www.techcircle.in/2025/04/07/how-ai-is-transforming-iot-security

- Paddy Harrington, "**IoT, IIoT, IoMT, And OT — Welcome To Acronym Mania. What Does It All Mean?**" Forrester, April 3, 2025 https://www.forrester.com/blogs/iot-iiot-iomt-and-ot-welcome-to-acronym-mania-what-does-it-all-mean/

- Scott Lemon, "**The Edge Evolution: New Frontiers in IoT and Cellular Computing,**" EdgeIR, April 1, 2025 https://www.edgeir.com/the-edge-evolution-new-frontiers-in-iot-and-cellular-computing-20250401

Selected IoT Perspectives
Internet of Things and Federated Learning (FL)

" The integration of the Internet of Things (IoT) with machine learning (ML) is revolutionizing how services and applications impact our daily lives. In traditional ML methods, data are collected and processed centrally. However, modern IoT networks face challenges in implementing this approach due to their vast amount of data and privacy concerns. To overcome these issues, federated learning (FL) has emerged as a solution. FL allows ML methods to achieve collaborative training by transferring model parameters instead of client data." Khajehali, Naghmeh, Jun Yan, Yang-Wai Chow, and Mahdi Fahmideh (published August 17, 2023), "**A Comprehensive Overview of IoT-Based Federated Learning: Focusing on Client Selection Methods**," Sensors 23, no. 16: 7235. https://doi.org/10.3390/s23167235

- Jenny Lyons-Cunha (updated by Matthew Urwing), "**What Is Federated Learning**?" Built In, February 27, 2025 https://builtin.com/articles/what-is-federated-learning

- Sukanya Bag, "**What is Federated Learning?**" Analytics Vidhya, February 17, 2025 https://www.analyticsvidhya.com/blog/2021/05/federated-learning-a-beginners-guide/

- Digital Defynd posting, " **How can CTOs use Federated Learning? [2025],**" Digital Defynd https://digitaldefynd.com/IQ/how-can-ctos-use-federated-learning/

- OctaiPipe ebook, "**The Ultimate Guide to Federated Learning for IoT**," n.d. https://octaipipe.ai/fl-for-iot-ebook/

Research background info (sample): Sorour, S.E., Aljaafari, M., Shaker, A.M. et al. '**LSTM** [Long Short-Term Memory]-**JSO** [Joint Strategy Optimization] framework for privacy preserving adaptive intrusion detection in federated IoT networks," Scientific Reports 15, 11321 (published April 2, 2025). https://doi.org/10.1038/s41598-025-95966-z; Albogami, N.N. "**Intelligent deep federated learning model for enhancing security in internet of things enabled edge computing environment,**" Scientific Reports 15, 4041 (2025) https://doi.org/10.1038/s41598-025-88163-5; Dritsas, Elias, and Maria Trigka. "**Federated Learning for IoT: A Survey of Techniques, Challenges, and Applications,**" Journal of Sensor and Actuator Networks 14, no. 1 (2025): 9 https://www.mdpi.com/2224-2708/14/1/9; Dubey, Praveer, and Mohit Kumar. "**Integrating Explainable AI with Federated Learning for Next-Generation IoT: A comprehensive review and prospective insights,**" Computer Science Review 56 (2025): 100697 https://www.sciencedirect.com/science/article/pii/S1574013724000807; Javan, Nastooh Taheri, Elahe Zakizadeh Gharyeali, and Seyedakbar Mostafavi. "**An energy-efficient decentralized federated learning framework for mobile-IoT networks,**" Computer Networks (2025): 111233 https://www.sciencedirect.com/science/article/abs/pii/S1389128625002014; Kamatchi, K., and E. Uma, "**Securing the edge: privacy-preserving federated learning for insider threats in IoT networks,**" The Journal of Supercomputing 81, no. 1 (2025): 1-49 https://link.springer.com/article/10.1007/s11227-024-06752-z; Cao, Shaohua, Shangru Liu, Yansheng Yang, Wenjie Du, Zijun Zhan, Danxin Wang, and Weishan Zhang, "**A hybrid and efficient Federated Learning for privacy preservation in IoT devices,**" Ad Hoc Networks 170 (2025): 103761 https://www.sciencedirect.com/science/article/abs/pii/S1570870525000095; Zhu, Xi, Junbo Wang, Zhi Liu, and Zibin Zheng, "**Sparse Communication Mechanism for Federated Learning in IoT Systems,**" IEEE Internet of Things Journal (2025) https://ieeexplore.ieee.org/abstract/document/10833792; . Wang, Z. Liu, X. Yang, M. Li, and Z. Lyu, "**The Internet of Things under Federated Learning: A Review of the Latest Advances and Applications,**" Computers, Materials & Continua, vol. 82, no. 1, pp. 1–39, 2025. https://doi.org/10.32604/cmc.2024.058926

Georgia Tech · Center for Advanced Communications Policy
Center for the Development and Application of Internet of Things Technologies

https://cdait.gatech.edu

April 15, 2025