Digital Object Identifier 10.1109/MCI.2026.3664251

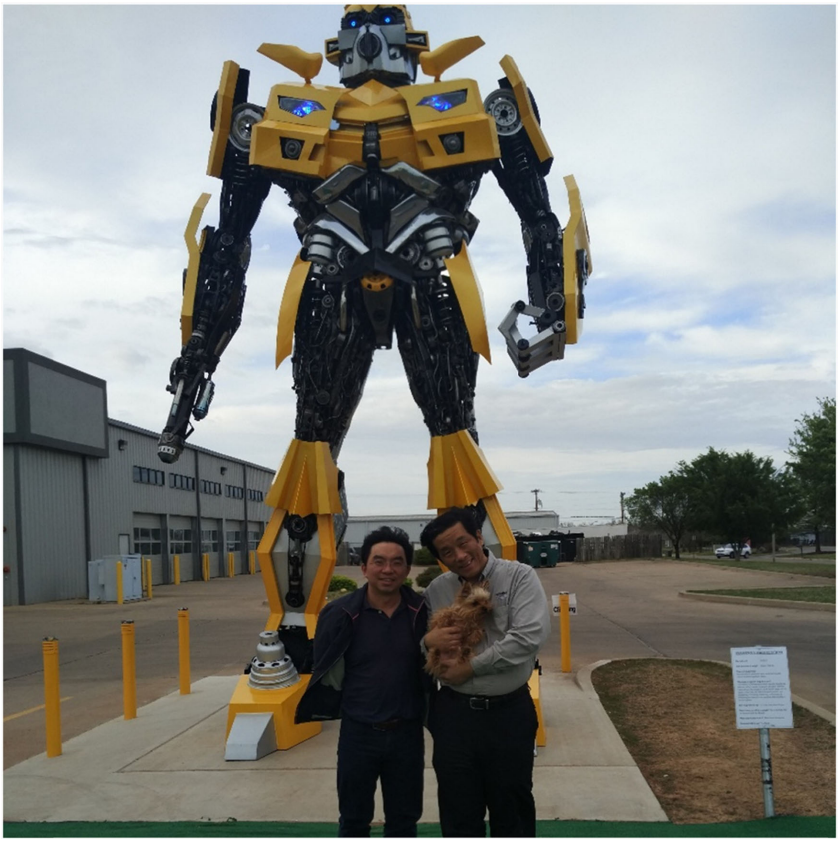
Min Jiang
Xiamen University, Xiamen, 361102, CHINA

Editor's Remarks

From Algorithm-Centric to Reliability-Centric Intelligence

As artificial intelligence increasingly moves from controlled laboratory settings into real-world environments, a fundamental question has come to the forefront:

How can learning-based intelligent systems remain reliable, verifiable, interpretable, and sustainable when confronted with imperfect data, uncertain environments, adversarial risks, and high-consequence application scenarios?



All smiles in front of a *literal* Transformer in Stillwater, USA: (right to left) Prof. Gary Yen, Coco, and Min Jiang.

Digital Object Identifier 10.1109/MCI.2026.3664138
Date of current version: 7 April 2026

This question lies at the heart of Trustworthy and Secure AI, and it defines the unifying theme of this May issue of *IEEE Computational Intelligence Magazine*. The works collected here do not simply pursue higher performance; instead, they reflect a shared concern with the conditions under which intelligent systems can be trusted to operate responsibly beyond idealized assumptions.

From a system-level perspective, these articles collectively highlight that trustworthiness cannot be reduced to a single algorithmic component. Rather, it emerges from the interaction of multiple factors, including data reliability, learning stability, security awareness, evaluation rigor, and deployment context. Several contributions emphasize how data imperfections—such as imbalance, scarcity, or reuse through knowledge transfer—can fundamentally shape system behavior, sometimes introducing hidden vulnerabilities alongside performance gains. Others underscore the importance of theoretical guarantees, demonstrating that provable stability and convergence remain indispensable foundations for dependable learning systems.

At the same time, this issue addresses trust in broader societal and application-driven contexts. The growing challenge of deepfake detection illustrates how generative AI technologies directly impact public trust in information ecosystems, demanding rigorous evaluation frameworks and cross-modal robustness. In sensitive domains such as healthcare, the assessment of infant movement further reveals that interpretability, ethical considerations, and human-centered design are not optional features, but essential prerequisites for adoption in high-stakes environments.

Taken together, the articles in this issue signal a clear evolution in computational intelligence research: from optimizing isolated models toward designing integrated intelligent systems that can sustain trust under real-world constraints. This shift not only reflects current challenges, but also points to the future direction of the field.

We also warmly congratulate the newly elected IEEE CIS AdCom members (2026–2028) and the distinguished IEEE Fellows of the Class of 2026. Your leadership and contributions continue to shape the trajectory of computational intelligence and its impact on society.