HCI International 2026

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AC 2026
20TH INTERNATIONAL CONFERENCE ON AUGMENTING COGNITION IN THE AI-ACCELERATED ERA

Jointly held under one management and one registration with HCI International 2026

https://2026.hci.international/ac

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Now entering its 20th year, the Augmented Cognition affiliated conference continues to push the boundaries of how intelligent systems can enhance human thought, decision-making, and resilience. Originally focused on real-time cognitive state assessment and adaptive interfaces, the field has evolved into a dynamic ecosystem encompassing cognitive AI, agentic autonomy, immersive human–machine teaming, and the emerging science of cognitive integrity. In today's complex digital and operational environments—where AI agents increasingly act alongside humans—issues of security, sovereignty, and trust have become central.

From cyber–cognitive defenses and sovereign AI architectures to adaptive learning loops and ethically aligned decision support, Augmenting Cognition is the forum where breakthroughs in cognitive augmentation meet the realities of modern missions, infrastructures, and lives. This is not just about managing complexity—it's about designing systems that uphold human dignity, protect decision authority, and expand our capacity to act wisely and effectively in an AI-accelerated world.

The central ambition of Augmenting Cognition is to engineer intelligent systems that dynamically amplify human thought, perception, and performance across complex, mission-critical environments. We integrate real-time psychophysiological and neurobehavioral sensing with AI-driven adaptation, enabling people to thrive in hybrid domains—from command centers, cockpit systems, and collaborative robotics to smart cities and sovereign digital ecosystems. Recent advances in cognitive AI and agentic frameworks have made it possible for systems not just to respond, but to reason, anticipate, and proactively adjust to the user's state.

In parallel, an expanded emphasis on Security, Sovereignty, and Cognitive Integrity reflects the reality that cognitive augmentation must be robust, trusted, and resilient. Our community tackles cyber-cognitive defenses, sovereign AI architectures, and resilience frameworks that protect decision authority and safeguard human–machine trust. These efforts address ethical imperatives and preserve cognitive autonomy in environments shaped by both AI agents and adversarial actors.

At the intersection of immersive human–AI teaming, safety-critical decision support, accelerated learning, and explainable system design, Augmenting Cognition is leading the charge toward multimodal interfaces and adaptive autonomy that learn alongside, and for, their users. By combining cognitive modeling, brain–computer interfaces, XR interaction, secure AI systems, and resilience engineering, we are redefining what human-centered AI means—especially in operationally relevant contexts.

As we update our focus and expand this conference, we invite leaders from academia, industry, defense, security, neurotechnology, and policy to join us in shaping the future of cognitive augmentation. Together, we aim to build adaptive, ethical, and trustworthy systems that extend human potential—not by replacing humans, but by empowering them in an AI-accelerated world where sovereignty, security, and performance go hand-in-hand.

Expended topics of interest. To reflect this broader scope, the conference now invites submissions and participation across the following areas:

Continuing Our Legacy

Honoring the foundational topics that have defined our community's identity

- Neuroergonomics and Operational Neuroscience
  Understanding neural and cognitive demands in real-world, mission-critical environments.
- Artificial Intelligence and Adaptive Training Systems
  Integrating AI to create responsive learning systems for skill acquisition and retention.
- Augmented Cognition for Health and Healthcare
  Applying cognitive augmentation tools to improve diagnosis, therapy, rehabilitation, and wellness.
- Shared Cognition, Team Performance, and Decision-Making
  Investigating how cognitive systems can enhance coordination, communication, and collective outcomes.
- Understanding Human Cognition and Behavior in Complex Tasks and Environments
  Studying real-time cognition in high-tempo, high-risk, or ambiguous contexts.
- Applied Cognitive Modeling, Perception, Emotion, and Interaction
  Modeling human perception, affect, and reasoning to inform system design.
- Context-Aware Adaptive Techniques and Systems
  Building systems that sense, interpret, and respond to dynamic user states and environments.
- Virtual and Augmented Reality Techniques for Augmented Cognition Applications
  Leveraging immersive technology for training, simulation, and adaptive interaction.
- Accelerated Learning through Augmented Learning and Training
  Enhancing knowledge transfer, retention, and skill-building through AI-guided approaches.
- Novel Brain–Computer Interface Technologies
  Developing next-generation BCI platforms that connect neural activity with adaptive systems.

Growing Our Impact

Expanding into emerging areas to shape the future of human–AI integration

- Cognitive AI and Agentic Systems
  Including large cognitive models, neuro-symbolic systems, and taskable AI agents.
- Real-Time Cognitive State Assessment
  Using neurophysiological and behavioral data to sense workload, engagement, and intent.
- Human–AI Teaming and Trustworthy Autonomy
  Designing agents that collaborate safely and reliably with human partners.
- Security, Sovereignty, and Cognitive Integrity
  Advancing cyber–cognitive defenses, sovereign AI systems, and resilience frameworks.
- Natural and Immersive Interfaces
  Exploring multimodal interaction, AR/VR/XR systems, and affective computing.
- Human Performance Optimization and Resilience Engineering
  Enhancing decision speed, endurance, memory, and stress recovery in dynamic environments.
- Ethics, Explainability, and Adaptive System Design
  Prioritizing transparency, fairness, and user trust in cognitive augmentation systems.
- Operational and Tactical Environments
  Addressing deployment in edge-AI contexts: aviation, defense, disaster response, spaceflight.
- Hybrid and Mixed-Reality Cognitive Environments
  Supporting cognition across digital twins, intelligent environments, and simulated spaces.
- Inclusive and Equitable Cognitive Augmentation
  Designing augmentation solutions that serve diverse populations and cognitive needs.

Submission deadlines are available at the HCII 2026 website:

https://2026.hci.international/submissions.html

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