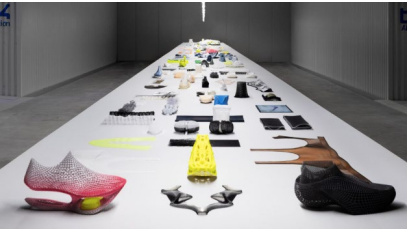
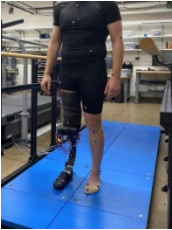
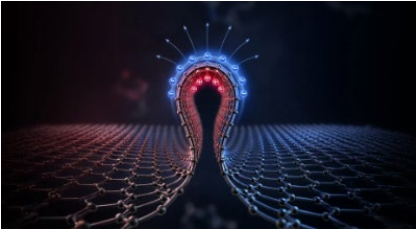


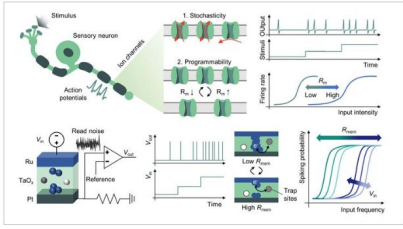
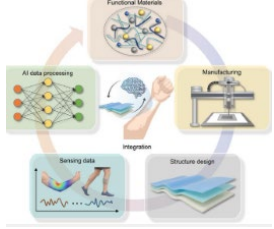


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AI From AI Copilots to Agent Swarms The next revolution in software engineering will redefine the workflow itself, according to AMD  AMD began developing AI systems for code generation, testing automation, bug analysis, and code review in 2024. At the time, our objective was to achieve 25 percent AI-generated production code by 2027 while gradually automating larger portions of the SDLC. Measuring productivity is inherently challenging, but from the outset we have consistently tracked one objective metric: the percentage of source code generated by AI. Importantly, we count only code that passes all reviews and testing and is ultimately included in the final product. While AI-generated code is certainly not the only contributor to productivity gains, it is one of the few metrics that can be measured objectively and consistently. By this metric, we have crossed the 20 percent mark at the beginning of this year and are now progressing toward 50 percent across entire codebase. In some software components, more than 80 percent of the code is now generated using AI. Source: IEEE Spectrum (17 August 2026)	ARCHITECTURE What is Blue Infrastructure? Rethinking Water's Role in City Design  Nature-based solutions are a primary strategy for contemporary climate adaptation and urban ecological resilience, embraced by cities regardless of their geography or climate zone. Green roofs, urban forests, bioswales, expanding tree canopy, protected wetlands, and permeable landscapes are featured prominently in municipal adaptation plans. These interventions are deployed across neighborhoods, distributed through street networks, and measured by hectares restored, trees planted, stormwater retained, or temperatures reduced. This shift expands the role of ecology within cities, establishing environmental elements as infrastructure systems and providing planners with a grounded framework for integrating natural systems into urban development. Blue infrastructure is presented as one component within the toolkit of nature-based solutions, positioned alongside green infrastructure as a category of water-related interventions including rivers, wetlands, coastlines, canals, and restored waterways. This framing is incomplete because it values water as an object to be designed instead of recognizing its role as the organizing system through which ecological and infrastructural processes operate. Hydrology determines where vegetation establishes, how ecosystems develop, how floodplains function, and how groundwater sustains landscapes. A city may successfully implement hundreds of nature-based interventions while leaving hydrological systems uncoordinated. The contribution of blue infrastructure in urban environments is not a new category of interventions but a different planning logic. It questions how existing water systems structure a landscape to inform design decisions, rather than asking which natural objects can be added to predetermined urban plans. As water becomes the organizing framework, decisions about land use, public space, and ecological restoration emerge from an understanding of hydrological systems. Source: Archdaily (17 August 2026)	ARCHITECTURE Green and blue infrastructure guide shows how to make cities sustainable  Facing the challenges of aligning development demands with sustainability policies, researchers from FGV EAESP (São Paulo School of Business Administration), alongside the international non-governmental organization ICLEI (Local Governments for Sustainability) and other partners, have created the Green and Blue Infrastructure Guide. The objective is to provide a step-by-step guide on how to make cities sustainable, focusing on improving local governance across three key factors: food, water, and energy. According to the lead researcher of the project, José Puppim, unplanned, rapid urbanization, climate change, and biodiversity loss can lead to food insecurity and water and energy shortages, as the consumption of these three elements is expected to increase significantly in the coming decades, particularly in cities. "These are some of the issues of greatest concern to the global population today, and they could have major consequences in the coming years, especially within cities," stated Puppim. The specialist notes that due to climate change and steadily growing demand, these resources have already left cities vulnerable to water, energy, and food crises. Therefore, the project aims to understand how better management of Green and Blue Infrastructure can prevent shortages of these resources. Source: Archdaily (July 2026)	DESIGN "A good designer is a good listener first" says Martin Lotti  Nike chief design officer Martin Lotti has joined Dezeen Awards 2026 as a judge. As the 2026 World Cup kicks off, he talks to Dezeen about five key projects that best represent his approach to design. Lotti has been at the helm of Nike's creative vision for nearly three decades. He is responsible for consumer-facing brand, product and retail executions across all sport and lifestyle categories at Nike for both men and women. His mission, as he puts it, is simply to "solve problems and make people fly". "Ultimately, my job is to use design to solve athlete problems that empower them to perform at their best and achieve what once felt impossible," said Lotti. The designer has overseen a number of notable projects across the brand including the Olympics and World Cup, as well as the iconic Jordan brand. However, according to Lotti, the most important project he has designed to date, "is not a single product or event – it is the creative culture and community around design". Central to this, for Lotti, is the value of listening which has helped the designer connect with the needs of his vast and diverse brand base. "It starts with listening," he said. "A good designer is a good listener first." "When you truly listen, design becomes more human, more meaningful and more impactful." Source: Dezeen (12 June 2026)
HEALTH Butterfly-inspired technology could change the way we monitor air  Respiratory infectious diseases and air pollution remain persistent global health challenges. Yet the tools used to monitor airborne threats are often expensive, power-hungry, and difficult to deploy outside laboratories. Now, researchers at the Technical Institute of Physics and Chemistry of the Chinese Academy of Sciences have turned to an unlikely teacher for a solution: a butterfly. Inspired by a special drinking behavior observed in nature, the research team has developed a new pump-free airborne sampling technology that operates entirely without external power and costs as little as \$0.12 per disposable unit.	PROSTHETICS Purdue engineers create wearable solution to optimize prosthetic fit, comfort  Prosthetics are a fact of life today. It's estimated that more than 50 million people globally — some 2 million of them in the United States — have lost a limb, and most of them could or already do benefit from the miracle of artificial limbs to restore mobility and lifestyle. A big challenge with prosthetics is to ensure a proper fit where the residual limb inserts into the prosthetic socket. This interface must manage complex multidirectional forces during everyday activities: standing, walking, even altering one's posture. Monitoring these forces in real time is vital to optimize socket fit and prevent secondary injuries. Purdue University engineers with collaborators at the University of Notre Dame have developed a wearable solution, using embroidered, light-	MATERIALS Tiny graphene wrinkles create surprisingly powerful electrical effects  Researchers at Rice University have found that extremely small wrinkles in graphene can alter how the material behaves electrically. The results provide experimental evidence for flexoelectricity, an effect in which uneven bending causes a material to develop an electric charge. The findings are published in Advanced Materials. The work points to a possible new way to control electricity in materials only a few atoms thick. Instead of changing a material by adding chemicals or combining it with something else, scientists may be able to tune its electrical properties simply by changing its shape. In the future, that strategy could contribute to more sensitive sensors and extremely thin electronic devices.	QUANTUM World's first superconducting quantum heat engine could help unlock massive quantum computers  A newly developed superconducting quantum heat engine could deepen our understanding of thermodynamics while helping advance technologies needed for quantum computers with very large numbers of qubits. Scientists are getting a clearer picture of how thermodynamics behaves in the quantum world, and that progress could benefit both quantum technology and our understanding of familiar thermodynamic principles. Researchers at Aalto University have now taken an important step by demonstrating the first cyclic quantum heat engine built inside a superconducting circuit. The experiment connects two areas of physics that normally describe very different scales.

The technology, known as Film-Rupture Actuated Capillary Enrichment (FACE), was recently reported in Proceedings of the National Academy of Sciences. According to the researchers, by using a bioinspired physical mechanism, FACE offers a simpler, lower-cost, and more accessible approach to collecting airborne samples than conventional pump-based systems. Source: Chinese Academy of Sciences (5 August 2026)	emitting textiles that integrate illumination and sensing, to detect both normal and shear forces at the limb-socket interface. Their findings have been published in a Science Advances paper titled "Embroidered textile sensors for real-time multiaxial force mapping in prosthetics." "This work represents a step forward in developing practical, wearable solutions for continuous biomechanical monitoring in lower-limb prosthetic users," Source: Purdue (14 August 2026)	"Our work shows that even an ordinary wrinkle can become an extraordinary electronic feature when viewed at the atomic scale," said Pulickel Ajayan, the Benjamin M. and Mary Greenwood Anderson Professor of Engineering and co-corresponding author of the study. "By demonstrating that geometry alone can reshape electrical behavior in graphene, we open a new pathway for designing materials whose properties can be controlled through structure rather than chemistry." Source: Rice University (16 August 2026)	Quantum mechanics explains the behavior of matter at extremely small scales, even below the size of atoms, while thermodynamics describes how heat and energy behave in much larger systems, from collections of molecules to the universe itself. Bringing the two together raises a fundamental question: what happens to familiar thermodynamic processes when quantum effects such as tunneling, entanglement, and superposition enter the picture? Source: Aalto (14 August 2026)
RESEARCH Scientists increasingly dependent on ‘black-box’ tools they cannot control or fully understand  Scientists are increasingly relying on powerful data sources and tools that they often cannot fully understand, inspect or verify, according to a new study. State-of-the-art tools and data like artificial intelligence (AI), satellite imagery, online data and digital sensors are revolutionising the way scientists study the natural world. But such systems effectively operate as scientific “black boxes” that can increasingly challenge the trust in science. The new study, by an international team of scientists, addresses the problems of reproducibility, trust and the future of scientific research in an era when critical technologies can shape science and influence knowledge without being fully open to scrutiny. These technologies can process enormous amounts of information, monitor biodiversity and threats across continents, and reveal patterns that would once have been out of reach. “However, many of these tools represent true black boxes, by keeping the processes behind those results largely hidden,” said Ivan Jarić, researcher from the University of Paris-Saclay, and lead author of the study. “They are often owned by private companies that intentionally limit access to information about how their systems operate or process data, guided by proprietary constraints and commercial aims”. The paper identifies several types of black boxes that are becoming widely used in ecology and conservation. Source: University of Exeter (15 August 2026)	SEMICONDUCTOR KAIST develops semiconductor neuron that tunes noise to selectively process signals  In electronic devices, irregular fluctuations in signals are generally referred to as “noise.” Because noise interferes with accurate information processing, conventional semiconductor technology has mainly treated it as something to be reduced or eliminated. However, neurons in the human brain do not respond in exactly the same way every time, even to the same stimulus. Tiny internal variations in neurons change when and how often neurons are fired, and this probabilistic operation is one of the brain's key information-processing features. Inspired by this, KAIST researchers have developed a next-generation semiconductor technology that does not remove current noise generated in memristors, but instead tunes it to a desired level and uses it to process different types of signals. KAIST (President Choongsik Bae) announced on the August 16 that a research team led by Professor Kyung Min Kim from the Department of Materials Science and Engineering has developed a new neuromorphic neuron technology that uses noise generated in semiconductor devices for information processing, enabling selective encoding of time-series signals across different frequency bands. ※ Neuromorphic technology: A technology that processes information by mimicking the way the human brain and neurons operate. Source: KAIST (15 August 2026)	SURVEILLANCE Ordinary WiFi can now identify you with near-perfect accuracy  WiFi signals could potentially be used to identify people and map their surroundings without relying on cameras or requiring the person being observed to carry a connected device. "By observing the propagation of radio waves, we can create an image of the surroundings and of persons who are present," says Professor Thorsten Strufe from KASTEL, KIT's Institute of Information Security and Dependability. "This works similar to a normal camera, the difference being that in our case, radio waves instead of light waves are used for the recognition," explains the cybersecurity expert. Because the technique analyzes radio waves moving through a space, a person does not need to have a phone, smartwatch, or other WiFi enabled device with them. "Thus, it does not matter whether you carry a WiFi device on you or not." Even turning off your own device would not necessarily prevent the system from working."It's sufficient that other WiFi devices in your surroundings are active." Source: KIT (12 August 2026)	WEARABLES Convergence of soft electronics and artificial intelligence: from materials to intelligent systems (whitepaper)  As wearable devices evolve from simple fitness trackers to sophisticated health monitors, a critical challenge remains: how to maintain reliable signal acquisition under real-world conditions where skin moves, sweats, and changes temperature. Now, researchers from Seoul National University and Gachon University, led by Professor Seung Hwan Ko and Professor Daeho Lee, have presented a comprehensive framework for the convergence of soft electronics and artificial intelligence—a synergy that transforms mechanically compliant sensors into truly intelligent systems. Why This Convergence Matters Traditional soft sensors excel at conformal contact but suffer from motion artifacts, hysteresis, and long-term drift that severely degrade signal quality. Conventional signal processing fails to compensate for these nonlinear, time-varying disturbances. The integration of AI with soft electronics overcomes this limitation by enabling adaptive denoising, drift-aware calibration, and multimodal inference directly at the edge—combining skin-like mechanical compliance with brain-like computational intelligence. Source: Shanghai Jiao Tong (14 August 2026)

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