

Department of Data Science  
Weekly Data Science Bytes

## Not So Secure: Drones Can Now Listen to Underwater Messages



- Cross-medium eavesdropping technology challenges long-held assumptions about the security of underwater communications.
- Researchers from [Princeton](#) and [MIT](#) have developed a method to intercept underwater communications from the air, challenging long-standing beliefs about the security of underwater transmissions.
- The team created a device that uses radar to eavesdrop on underwater acoustic signals, or sonar, by decoding the tiny vibrations those signals produce on the water's surface. In principle, the technique could also roughly identify the location of an underwater transmitter, the researchers said.
- In a paper presented at ACM MobiCom on November 20, the team described the technology and proposed strategies to defend against the new type of eavesdropping it enables. They successfully demonstrated the system on Lake Carnegie, a small man-made lake in Princeton. While applying this method in the open ocean presents far greater challenges, the researchers believe it could be achieved with substantial engineering advancements

**AI job crisis? KPMG says it will create intelligent Agentic AI that works fast and never sleeps**



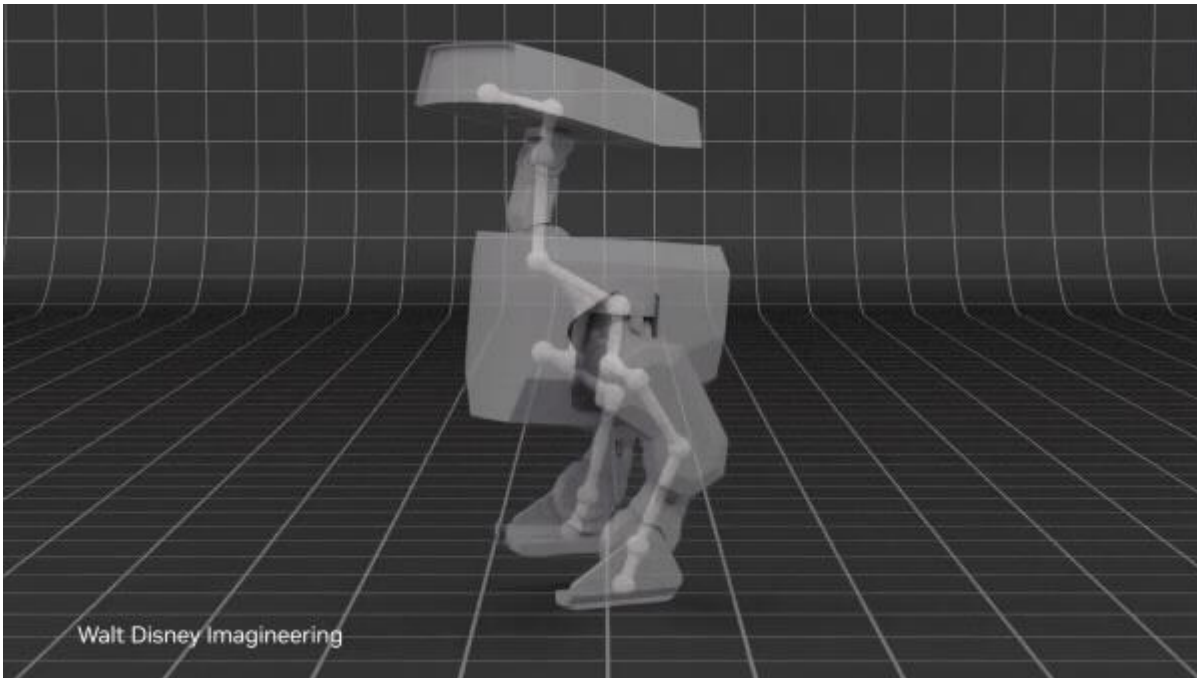
- **KPMG's global head of AI, David Rowlands, told Business Insider that these agents will work alongside the company's professionals, bringing innovation and efficiency to customer service, quality control, insight generation, and overall business processes.**
- **Rowlands explained that KPMG is collaborating with tech partners to develop AI-powered solutions aimed at improving productivity and client satisfaction.**
- **"Soon we will be working side-by-side with an agentic workforce that is well-trained, fast, flush with intelligence — IQ and EQ — one that ignores siloes, borders, politics and never sleeps," a KPMG spokesperson said.**
- **His statement also suggests that AI agents are not just being designed for efficiency, but they will also come equipped with emotional intelligence, enabling them to better understand and respond to client needs.**

Google launches its most intelligent AI model, Gemini 2.5 Pro: What is it and how it works

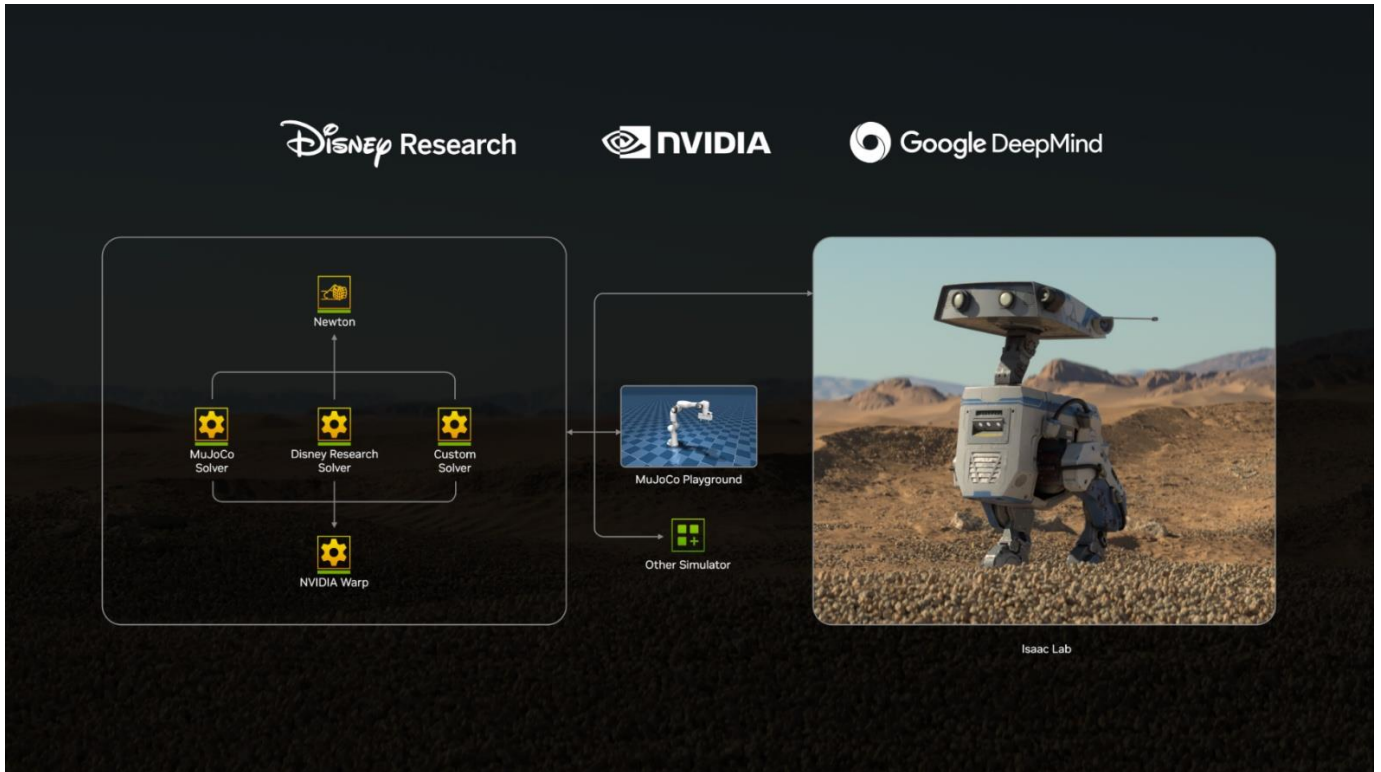


- Google has unveiled Gemini 2.5, its most advanced artificial intelligence model to date, marking a significant step-up in the AI. world. This latest iteration introduces "thinking" capabilities, enabling the model to process tasks step-by-step and make more informed decisions.
- This approach enhances the model's ability to handle complex prompts, resulting in more accurate and contextually relevant responses

## Announcing Newton, an Open-Source Physics Engine for Robotics Simulation



- [Physical AI](#) models enable robots to autonomously perceive, interpret, reason, and interact with the real world. Accelerated computing and simulations are key to developing the next generation of robotics.
- Physics plays a crucial role in [robotic simulation](#), providing the foundation for accurate virtual representations of robot behavior and interactions within realistic environments. With these simulators, researchers and engineers can train, develop, test, and validate robotic control algorithms and prototype designs in a safe, accelerated, and cost-effective manner.
- Robotic simulation is built upon the fundamental laws of physics, including the conservation of mass and momentum, rigid and soft body dynamics, contact and friction, and actuator modeling. These principles are used to predict how robots will behave in various scenarios and environments



**Newton architecture with NVIDIA Warp as the foundation technology, custom solvers can be added. It works in various simulators such as MuJoCo Playground and Isaac Lab**

Source: <https://developer.nvidia.com/blog/announcing-newton-an-open-source-physics-engine-for-robotics-simulation/>

Youtube source: <https://www.youtube.com/watch?v= waPvOwL9Z8&t=3831s>

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*NVIDIA Announces DGX Spark and DGX Station Personal AI Computers*



- **GTC**—NVIDIA today unveiled NVIDIA DGX™ personal AI supercomputers powered by the NVIDIA Grace Blackwell platform.
- DGX Spark — formerly Project DIGITS — and DGX Station™, a new high-performance NVIDIA Grace Blackwell desktop supercomputer powered by the NVIDIA Blackwell Ultra platform, enable AI developers, researchers, data scientists and students to prototype, fine-tune and inference large models on desktops. Users can run these models locally or deploy them on NVIDIA DGX Cloud or any other accelerated cloud or data center infrastructure.
- DGX Spark and DGX Station bring the power of the Grace Blackwell architecture, previously only available in the data center, to the desktop. Global system builders to develop DGX Spark and DGX Station include ASUS, Dell, HP Inc. and Lenovo.
- “AI has transformed every layer of the computing stack. It stands to reason a new class of computers would emerge — designed for AI-native developers and to run AI-native applications,” said Jensen Huang, founder and CEO of NVIDIA. “With these new DGX personal AI computers, AI can span from cloud services to desktop and edge applications.”

## China's Zuchongzhi 3.0 Quantum Processor 'Outpaces' Google Willow by Million Times



- Chinese researchers from the [University of Science and Technology of China](#) (USTC) have unveiled the [Zuchongzhi 3.0](#), a superconducting quantum processor with 105 qubits, marking a significant milestone in Chinese quantum computing.
- The processor operates quadrillion times faster than the world's fastest supercomputer and one million times faster than [Google's latest Willow](#), as per the findings published in [Physical Review Letters](#).
- The Zuchongzhi 3.0 was tested with an 83-qubit, 32-layer random circuit sampling task, claiming to achieve results that would take classical supercomputers over 6.4 billion years to replicate.
- This achievement surpasses [Google's Sycamore](#) processor, developed in 2019, by six orders of magnitude. The research team highlighted advancements in coherence time, gate fidelities, and readout accuracy.