
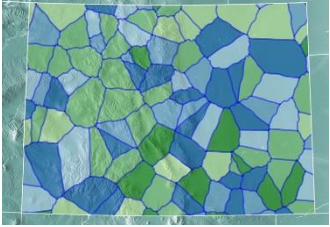

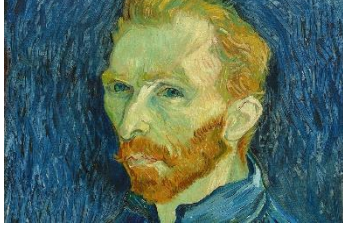



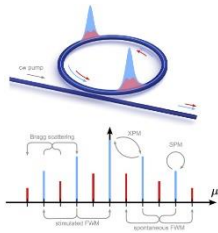






Weekly Discovery

We SHARE to inspire and ignite ideas!

5 Jun – 9 Jun 2023

<p>AI Professors Use Oral Exams to Thwart AI-Enabled Cheating</p>  <p>"A wave of professors around the world are experimenting with oral exams to improve teaching and learning and to discourage cheating.</p> <p>Plagiarism increased at the nation's universities when the pandemic hit, according to Turnitin, a company which sells a plagiarism-detection system. ChatGPT, which became accessible to the public last year, added another variable. This spring, Turnitin found about 4% of papers turned into professors were generated almost entirely by artificial intelligence."</p> <p>Source: ACM (2 Jun 2023)</p>	<p>APPLIED MATH How Math Has Changed the Shape of Gerrymandering</p>  <p>"New tools make it possible to detect hidden manipulation of maps. Colorado has created a non-partisan redistricting commission to draw maps. Yet the endless possibilities for district borders have challenged mathematicians' abilities to decide what's fair."</p> <p>Source: Quanta Magazine (1 Jun 2023)</p>	<p>ARCHITECTURE A.P Coffee & Bakery / omo-studio</p>  <p>"When I first encountered the scene, The interior, which was completely demolished, was a space made of concrete on all sides. Pillars lined the long walls and between the pillars, I could see the dark green landscape. I thought this panoramic landscape would make a nice background as it changes colour depending on the season."</p> <p>Source: ArchDaily (4 Jun 2023)</p>	<p>ART & ART HISTORY Why We Connect with Vincent van Gogh's Paintings</p>  <p>"With the advent of digitisation, art has become more accessible to the masses than ever before. While the world of NFTs and crypto art may not appeal to everyone, they can certainly engage with digitised versions of art with which they are already familiar. Dutch post-impressionist painter Vincent van Gogh's work, with its distinctive use of colour and unique methodology of form, lends itself particularly well to digitisation."</p> <p>Source: JSTOR (1 Jun 2023)</p>
<p>COMPUTER AIDED ENGINEERING Reading Between the Cracks: Artificial Intelligence Can Identify Patterns In Surface Cracking To Assess Damage In Reinforced Concrete Structures</p>  <p>"Researchers are trying to make the process more efficient and definitive by using artificial intelligence, combined with a classic mathematical method for quantifying web-like networks, to determine how damaged a concrete structure is, based solely on its pattern of cracking. Read more in this paper."</p> <p>Source: Drexel News (1 Jun 2023)</p>	<p>ENERGY Green Hydrogen Production Costs Could Be Lowered with New Method</p>  <p>"Researchers in Korea have developed a technology to significantly reduce the amount of precious metals used in water electrolysis devices, to lower the cost of hydrogen production.</p> <p>By reducing the amount of platinum and iridium used in water electrolysis devices, scientists believe they could bridge one of the largest barriers to green hydrogen production."</p> <p>Source: IET (2 Jun 2023)</p>	<p>HEALTHCARE Get Ready for 3D-Printed Organs and a Knife That 'Smells' Tumours</p>  <p>"Fast-forward into the future, and hospitals are likely to look very different again. These are some of the changes you're likely to see in years to come. Read them in this article."</p> <p>Source: Wired (31 May 2023)</p>	<p>LASER SOLITONS Multimode Squeezing in Soliton Crystal Microcombs</p>  <p>"Soliton microcombs are self-organised pulses of light sustained in driven Kerr micro resonators, intensively studied for applications in integrated photonic technologies and for their rich nonlinear dynamics. In this work, we theoretically study the collective dynamics of the quantum fluctuations of soliton microcombs. We find that the mean field of a dissipative Kerr soliton crystal is accompanied by pulses of squeezed multimode vacuum and derives its operational stability from the strong detuning of the below-threshold parametric process."</p> <p>Source: Optica (1 Jun 2023)</p>
<p>MATERIALS Buckle Up! A New Class of Materials Is Here</p>  <p>"Would you rather run into a brick wall or into a mattress? For most people, the choice is not difficult. A brick wall is stiff and does not absorb shocks or vibrations well; a mattress is soft and is a good shock absorber. Sometimes, in designing materials, both of these properties are needed. Materials should be good at absorbing vibrations but should be stiff enough to not collapse under pressure. A team of researchers from the UvA Institute of Physics has now found a way to design materials that manage to do both these things. Read the paper on Advanced Materials."</p> <p>Source: University of Amsterdam, Institute of Physics (2 Jun 2023)</p>	<p>QUANTUM PHYSICS The Quest to Use Quantum Mechanics to Pull Energy Out of Nothing</p>  <p>"in the past year, researchers have teleported energy across microscopic distances in two separate quantum devices, vindicating Hotta's theory. The research leaves little room for doubt that energy teleportation is a genuine quantum phenomenon. Read more in this paper."</p> <p>Source: Wired (28 May 2023)</p>	<p>SENSOR Environmental Noise Makes a Sensor More Sensitive</p>  <p>"Sensors of all kinds, from accelerometers to thermometers, may be hampered by random fluctuations (noise) in the environment, which can swamp the signals they aim to detect. But a new study shows how noise might be used to improve the sensitivity of sensors [1]. In experiments using a wireless wearable sensor that monitors a person's breathing during exercise, the researchers showed that the sensor's ability to detect weak signals is greatest not when the input is noise-free but when it includes a modest amount of noise."</p> <p>Source: APS (2 Jun 2023)</p>	<p>SPACE REDESIGN From Tiny Squares to Urban Parks: 100 Public Spaces from All Around the World</p>  <p>"To give you some ideas on how to design urban furniture, bus stops, lookouts, bridges, playgrounds, squares, sports spaces, small parks, and urban parks, check out these 100 notable public spaces."</p> <p>Source: ArchDaily (4 Jun 2023)</p>

To view past Weekly Alerts [CLICK HERE](#)
For more articles or in-depth research, contact us at library@sutd.edu.sg
A SUTD Library Service©2023