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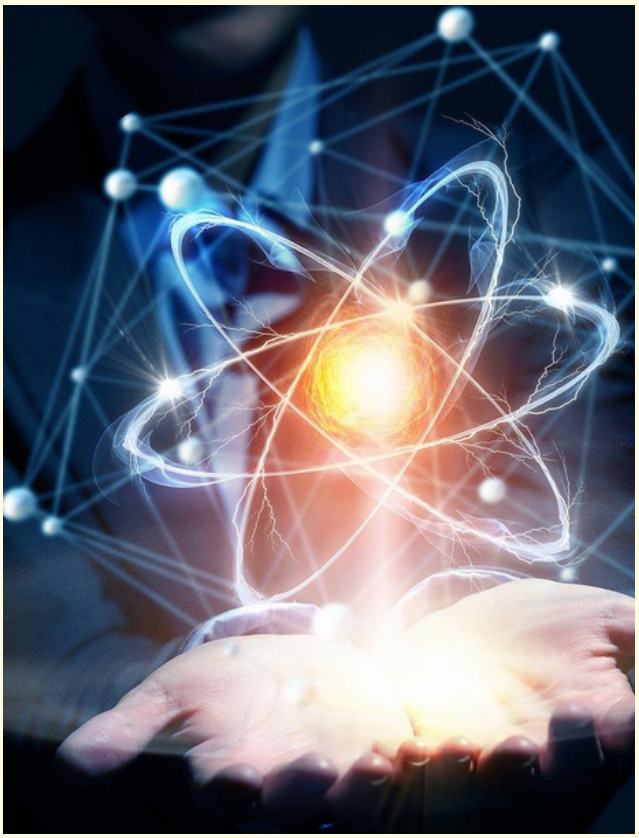
Applied Science and Humanities department

Vidya Vikas Education Trust

Universal College of Engineering



THE VISION

The Department of Applied Science and Humanities committed to dynamically integrate the components Science, Humanities Engineering to groom students to transform them as globally acknowledged professionals.

To keep pace with fast developing scenario of technology and socio economic environment while planning to develop a world class technical institution.

THE MISSION

The department is carrying a mission to create and disseminate the knowledge and techniques in the intellectual areas of Engineering and other core areas of Applied Science and Humanities for the betterment of Ecosystem. To inculcate the importance of Applied Science and develop a natural flair for Engineering and Technology which in turn shall mold students into a competent professional.

Six ways the world's fastest computers have changed your life

Like your car? Love the movies? Happy with your doctor and your bank? You've got a supercomputer to thank

As Bob Dylan rightly observed, you don't need a weatherman to know which way the wind blows. But if you want to do long-term forecasting, predict the path of a Category 5 hurricane, or simulate the damage from decades of climate change, you will need a supercomputer.
These machines are just what their name implies: thousands of processors operating in parallel, performing quadrillions of operations each second on unimaginable volumes of data. Scientists are using these electronic beasts to solve some of humankind's thorniest problems. Machines like Lawrence Livermore Lab's Sierra are calculating the blast radius of thermonuclear warheads and creating detailed models of the human heart. Oak Ridge Lab's Summit is being used to design better batteries and simulate supernovas. Argonne Lab's forthcoming exascale system Aurora may allow researchers to map the human brain and harness nuclear fusion.

Supercomputers already impact our lives in ways most of us are unaware of. The advancements derived from high-performance computers (HPCs) have trickled down into things many of us do every day—like checking the weather, driving to the doctor's office, watching a movie, or managing our bank accounts.
Here are some of the more common ones.

Weather: Do I need an umbrella?

Every waking moment, 2x1044 molecules (that's a 2 followed by 44 zeroes) bump into each other in the earth's atmosphere, creating what we call weather. Predicting the interactions of even a fraction of these particles requires billions of calculations.

The first successful 24-hour weather forecast was achieved in April 1950 by the University of Pennsylvania's Electronic Numerical Integrator and Computer. Originally built to calculate the trajectory of ballistics during World War II, ENIAC is considered by many to be the first general-purpose computer.

By the mid-1950s, computer-generated forecasts were common. The National Weather Service now uses two room-sized supercomputers from IBM and HPE Cray, each roughly 10,000 times more powerful than the machine you're using to read this. Over the years, the accuracy of weather prediction has steadily improved. Today's five-day forecast is typically on target 90 percent of the time, while 10-day projections are still correct less than half the time. So, if you're packing for a long trip, bring an umbrella just in case.

Medicine: The AI doctor will see you now

Gotten a flu shot this year? Supercomputers played a key role in the development of vaccines for avian and swine flu and are now hard at work seeking treatments and cures for COVID-19.
Medical researchers are using AI and supercomputers to create digital twins of human organs, to observe how they respond to treatments before applying them to their flesh-and-blood siblings. Today, Hewlett Packard Enterprise's Blue Brain 5 is helping to map the 88 billion synapses inside the neocortex of rodents, a key step toward understanding the human brain.
Ultimately, high-performance computing is expected to usher in a new era of personalized medicine, where bespoke treatments are tuned to match your specific genetic makeup.

Financial services: You can bank on it

Have you ever used your credit card in a foreign country and gotten a phone call from your bank minutes later asking you to verify the purchase? That's because a machine learning algorithm running on an HPC has your back. Identifying potential bank fraud as it happens requires a tremendous amount of computing power. For example, MasterCard processes 165 million transactions per hour, applying nearly 2 million rules to each transaction—and does it in a matter of seconds.
Financial services institutions use supercomputers in a variety of other ways as well: to detect and repel cyberattacks, assess credit risk, evaluate investments, verify regulatory compliance, predict pricing, and manage high-speed trades. And the next time you call your bank's customer service line, it may be answered by an AI-driven bot that can assess your emotional state and direct you to the right person.

Automobiles: Hitting the road

For more than 30 years, supercomputers have been helping cars become faster, safer, and more energy efficient. Japanese carmakers began using HPCs in the late 1980s. Mazda employed an $8 million Cray supercomputer to design the sleek "Aero-Wave" roofline of its 1993 RX-7 sports car. And in 2004, General Motors purchased a supercomputer to simulate the results from vehicle crash tests. As we move into the era of autonomous vehicles, HPCs will play an even greater role in training a car's AI systems to determine whether that's a trash bag in the middle of the road or a baby carriage.
When you pull into a gas station to fill up, you can thank supercomputers for that, too. Three-dimensional seismic models are helping petrochemical companies predict the locations of oil reserves. And when you finally retire that gas guzzler for an all-electric vehicle, it may be because a supercomputer helped design longer lasting electric vehicle batteries.

Entertainment: What do you want to watch tonight?

It's hard to find a recent major movie release that doesn't employ some form of computer-generated imagery. Films constructed entirely around CGI brought in nearly $6 billion at the box office in 2018. And the more sophisticated the animation, the more computing power required. Baymax, the doughy white protagonist of Disney's "Big Hero 6" (2014), was rendered using a 55,000-core supercomputer that simulated 10 billion rays of light bouncing off each object.
And then there was "Cats" (2019). The less said about that the better.
But CGI movies have been around a lot longer than you think. Alfred Hitchcock's "Vertigo" (1958) used a WWII-era anti-aircraft targeting computer to create the Spirograph-like opening title sequence. The first film where supercomputers played a starring role was 1984's "The Last Starfighter," which used a Cray X-MP to render 27 minutes of special effects.

Astronomy: The sky's the limit

When we gaze at the night sky, we're looking into the recent past, using our eyes and maybe a telescope. When astrophysicists do it, they're looking back 13 billion years, using supercomputers to simulate what the cosmos looked like shortly after the Big Bang. HPCs have been used to model how galaxies are born, plumb the depths of black holes, and shed light on the mysteries of dark matter.

This may be supercomputing's most profound and long-lasting impact: to change our understanding of how the universe was formed, as well as our place within it.

Source: https://www.hpe.com/us/en/insights/articles/supercomputers-in-everyday-life-2011.html
Complied by: Jenisa Dsilva

Online gaming enhances career prospects and develops soft skills, finds new study

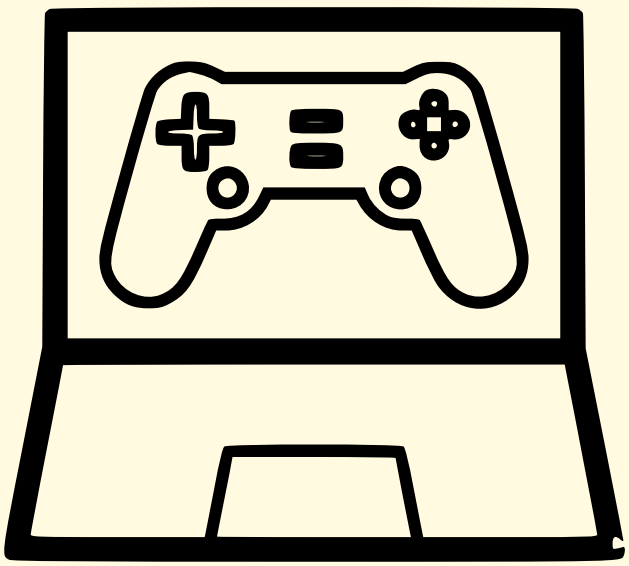
Previously, very little was known about online gaming behaviour based on the actual games played and how career interests are reflected in what people play. To examine this correlation, in collaboration with Game Academy Ltd, Surrey researchers investigated the gaming behaviour of 16,033 participants to explore how the hobby could support video game players' future career planning and professional training.
The participants played a different number of games on Steam -- a video game digital distribution service and storefront. Researchers studied the 800 most-played games and only included participants for whom they had access to gender and job details.

Researchers discovered that IT professionals and engineers played puzzle-platform games, which possibly enhance their spatial skills. People in managerial roles showed an interest in action roleplay games where organisational and planning skills are involved and engineering professionals were associated with strategy games which often require problem-solving and spatial skills. There were apparent gender differences too -- females preferred playing single-player games, whereas males preferred playing shooting games.

Dr Anna-Stiina Wallinheimo, lead author of the study, Cognitive Psychologist, and Postdoctoral Research Fellow at the University of Surrey's Centre for Translation Studies (CTS) said:

"In recruitment processes, the best candidates may be missed because organisations do not consider the soft skills that have been gained through non-work activities (for example, online gaming). As a result of our research, we believe applicants' online gaming experiences should be highlighted because these acquired soft skills can really help to develop their all-round strengths for the job at hand."
Dr Anesa Hosein, co-author of the study and Associate Professor in Higher Education at the University of Surrey said:

"By understanding to what extent career interests are reflected in game playing, we may be able to demonstrate more clearly how these align with career interests and encourage employers to understand the value of the soft skills associated with gaming. Our research could also inspire game developers to work on honing these soft skills more closely in their design. Furthermore, places of learning, such as universities, could allow students to reflect and incorporate gaming as part of their career development and consider how gaming can be included in the curriculum to enhance alignment between students' learning, career aspirations and extra-curricular gaming interests."



Source: https://www.sciencedaily.com/releases/2022/11/221129112806.htm
Complied by: Marina Thomas

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Department of English and Foreign Languages

CERTIFICATE OF PARTICIPATION

EFLC-FDP1-018

This is to certify that **Sonali Dudihalli, Assistant Professor** of **Dept. of Applied Sciences and Humanities**, Universal College of Engineering, Vasai has attended the Six-day National Online Faculty Development Programme on **Integrating the Contemporary Discourses in English Language and Literature Studies** conducted from 17.12.2022 to 23.12.2022.

Dr. L. KAVITHA NAIR
Professor & Head, EFL

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Organized by: Humanities Dept. & IQAC

CERTIFICATE OF PARTICIPATION

This is to certify that Mr/Mrs/Dr/Prof. FLORENCE NOAH CHRISTIAN (RESEARCH SCHOLAR, MATHEMATICS) of Shri Jagdishprasad Jhabarmal Tibrewala University, India has participated in One Day Online International Multidisciplinary Conference which held on 16 October, 2022.

Dr. Umakant Chanshetti
Principal

Dr. Anita Mudkanna
HOD of English Dept.
Conference Convener

Dr. Vishwas Mane
IQAC Coordinator

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ICMISM 2022

(16th and 17th December 2022)

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This is to certify that paper titled An Experimental and Numerical Comparison on Traditional Spring DVA in parallel and Shape Memory Alloy Actuated DVA in Series and Parallel for Fixed Beam Vibration Control co-authored by Shivam Shukla is selected as **best paper** at the **International Conference on Materials Innovation and Sustainable Manufacturing (ICMISM-2022)** during 16th & 17th December 2022, organized by the Department of Mechanical Engineering, Vishnu Institute of Technology-Bhimavaram, Andhra Pradesh, India.

Dr.I.RAMU

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