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Understanding Emotions in Text Using Deep Learning and Big Data

Big Data and Deep Learning algorithms combined with enormous computing power have paved ways for significant technological advancements. Technology is evolving to anticipate, understand and address our unmet needs. However, to fully meet human needs, machines or computers must deeply understand human behaviour including emotions. Emotions are physiological states generated in humans as a reaction to internal or external events. They are complex and studied across numerous fields including computer science. As humans, on reading "Why don't you ever text me!", we can either interpret it as a sad or an angry emotion and the same ambiguity exists for machines as well. Lack of facial expressions and voice modulations make detecting emotions in text a challenging problem. However, in today's online world, humans are increasingly communicating

using text messaging applications and digital agents. Hence, it is imperative for machines to understand emotions in textual dialogue to provide emotionally aware responses to users. In this paper, we propose a novel Deep Learning based approach to detect emotions - Happy, Sad and Angry in textual dialogues. The essence of our approach lies in combining both semantic and sentiment based representations for more accurate emotion detection. We use semi-automated techniques to gather large scale training data with diverse ways of expressing emotions to train our model. Evaluation of our approach on real world dialogue datasets reveals that it significantly outperforms traditional Machine Learning base-

lines as well as

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From the Editor-in-Chief's Desk



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The purpose of **ALU AISD SofTact**, a quarterly Magazine, is to inform, engage and inspire the diverse readership, including Academia, Students, Industry personnel and other stakeholders by publishing B.Voc. and M.Voc. Software Development students' creative content and glimpses of Departmental activities. It is intended to bring out the hidden literary talents of our students and also to inculcate authoring skills to them. I wish the students those who have an eager to participate in our university inter department cultural event ALUTES 2022 and encourage more students to participate in such events. Regarding the Internal test performance, I appeal the students to put in more effort and achieve even better results in the forthcoming tests. Through this issue of SofTact magazine (Volume 2, Issue 4) our B.Voc. and M.Voc. Software Development students proved their talents and it shows their strength of academic activities of the department.

Query Optimization

Query optimization is the overall process of choosing the most efficient means of executing a SQL statement. SQL is a nonprocedural language, so the optimizer is free to merge, reorganize, and process in any order. The database optimizes each SQL statement based on statistics collected about the accessed data. The optimizer determines the optimal plan for a SQL statement by examining multiple access methods, such as full table scan or index scans, different join methods such as nested loops and hash joins, different join orders, and possible transformations. For a given query and environment, the optimizer assigns a relative numerical cost to each step of a possible plan, and then factors these values together to generate an overall cost estimate for the plan. The optimizer chooses the plan with the lowest cost among all considered candidate plans. The optimizer uses available statistics to calculate cost. For a specific query in a given environment, the cost computation accounts for factors of query execution such as I/O, CPU, and communication. For example, a query might request information about employees who are managers. If the optimizer statistics indicate that 80% of employees are managers, then the optimizer may decide that a full table scan is most efficient. However, if statistics indicate that very few employees are managers, then reading an index followed by a table access by row id may be more efficient than a full table scan.

An adaptive plan is made up of several predefined sub plans and an optimizer statistics collector. A sub-plan is a section of a plan that the optimizer can use as an alternative during execution. A nested loops join, for example, might be converted to a hash join during execution. An optimizer statistics collector is a row source that is added at crucial points in a plan to collect run-time statistics. These statistics assist the optimizer in making a final choice amongst numerous sub plans. During statement execution, the statistics collector collects execution information and buffers some rows received by the sub-plan. The optimizer selects a sub-plan based on the information collected by the collector. At this point, the collector stops collecting statistics and buffering rows, and permits rows to pass through instead. On subsequent executions of the child cursor, the optimizer continues to use the same plan unless the plan ages out of the cache, or a different optimizer feature (for example, adaptive cursor sharing or statistics feedback) invalidates the plan.

- Ranking
- Search Engine
- Backlinks
- Analysis
- Inventory Data
- Business Rules
- Transformer
- Estimator
- Query Plans

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Rubik's Cube solved by deep learning

Deep CubeA, a deep reinforcement learning algorithm programmed by UCI computer scientists and mathematicians, can find the solution in a fraction of a second, without any specific domain knowledge or in-game coaching from humans. This is no simple task considering that the cube has completion paths numbering in the billions but only one goal state -- each of six sides displaying a solid color -- which apparently can't be found through random moves. For a study published today in Nature Machine Intelligence, the researchers demonstrated that

DeepCubeA solved 100 percent of all test configurations, finding the shortest path to the goal state about 60 percent of the time. The algorithm also works on other combinatorial games such as the sliding tile puzzle, Lights Out and Sokoban.

by a video demonstration, a video demonstration of the sign in a phrase, and then video of the phrase used in a sentence for context. For a study published today in Nature Machine Intelligence, the researchers demonstrated that DeepCube A solved 100 percent of all test configurations, finding the shortest path to the goal state about 60 percent of the time. The algorithm also works on other combinatorial games such as the sliding tile puzzle, Lights Out and Sokoban.

"Artificial intelligence can defeat the world's best human chess and Go players, but some of the more difficult puzzles, such as the Rubik's Cube, had not been solved by computers, so we thought they were open for AI approaches," said senior author Pierre Baldi, UCI Distinguished Professor of computer science. "The solution to the Rubik's Cube involves more symbolic, mathematical and

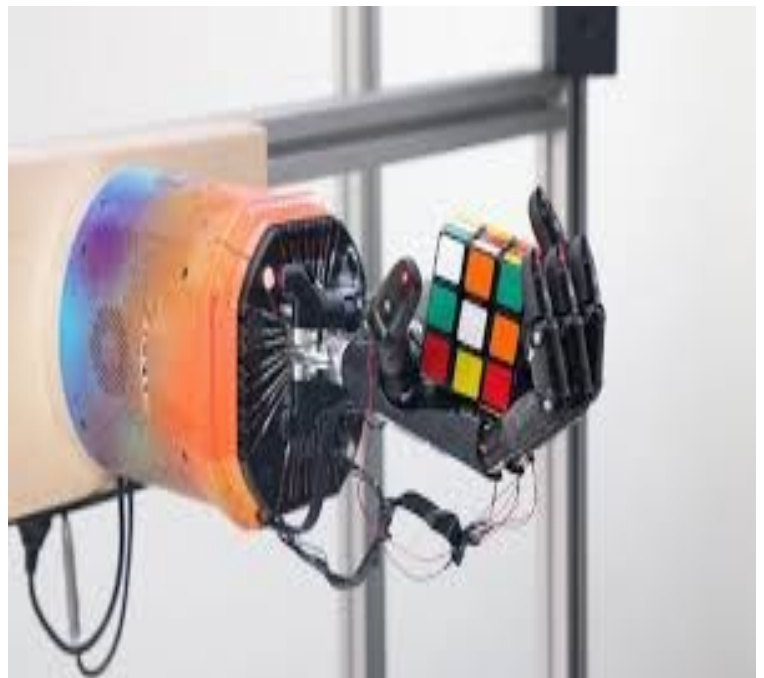
abstract thinking, so a deep learning machine that can crack such a puzzle is getting closer to becoming a system that can think, reason, plan and make decisions."

The Difference Between Human and Machine :

If it is a question of efficiency, the machine wins. Humans typically require 50 moves to solve the puzzle quickly.

DeepCubeA solved the Cube in an average of 28 moves. DeepCubeA does have competition from another machine though.

An algorithm developed at the Massachusetts Institute of Technology, min2phase, solved the Rubik's Cube three times faster. Min2phase lacked a neural network though, a network that mimics human brain function and machine learning techniques. That algorithm was programmed to solve the Cube. Last year, researchers created a robot that solved Rubik's Cube in 0.38 seconds.



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CRYPTOJACKING



- Talkitt is a voice to voice app which aims to enable people with motor, speech, and language conditions to communicate freely and easily using their own voice.
- It works by interpreting an individual's pronunciation of words into understandable speech.
- Talkitt recognises the user's vocal patterns, translates words from any language and then speaks them aloud via an app.

Two words—"cryptography" and "currency"—combine to form "cryptocurrency," which is electronic money, based on the principles of complex mathematical encryption. All cryptocurrencies exist as encrypted decentralized monetary units, freely transferable between network participants. Or put more simply, cryptocurrency is electricity converted into lines of code, which have a real monetary value. Cryptojacking is the unauthorized use of computing resources to mine cryptocurrencies. The idea is that a smart system can utilize the resources of visiting devices or end users to contribute to bitcoin mining or other similar mining efforts. The use of cryptojacking is spurring enormous controversy over the appropriate use of shared resources and interactions between digital parties. Cryptojackers have more than one way to enslave your computer. One method works like classic malware. You click on a malicious link in an email and it loads



cryptomining code directly onto your computer. Once your computer is infected, the cryptojacker starts working around the

Tips and Tactics :

Although it is hard to discover if your computer system has been compromised by cryptojacking, there are some measures you can take to prevent these attacks and protect your networking systems and computer, as well as your crypto-assets: Instruct your IT team—IT staff should be trained to detect and understand cryptojacking. They must be aware of any initial signs of an attack and be prepared to respond immediately with a further investigation. Educate your employees—IT teams rely on employees informing them when computers are overheating or running slowly. Employees must have an understanding of cyber security and know to avoid clicking on links in emails that may contain cryptojacking code and only download from known links. Use ad-blockers—cryptojacking scripts are often embedded in web ads. Use an ad-blocker to block and detect malicious cryptomining code. Disable JavaScript—when surfing online, disable JavaScript to prevent cryptojacking code from infecting your organization's computers. Remember that disabling JavaScript will also block some of the functions you require when browsing.



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Computer Beeps

- ◆ **A very short beep** is indicative of a problem with your motherboard. It can also mean that you have a problem with your system memory (BIOS AWARD).
- ◆ **A long beep followed by three sequential short beeps** signals an issue linked to your graphics card configurations.
- ◆ **A short beep followed by three sequential long beeps** means that you have a problem with your system memory. If you are hearing **beep, pause, beep, pause, followed by two sequential beeps**, the error is linked to your CPU (central processing unit).
- ◆ **Three beeps, pause, three beeps, pause, followed by four beeps** indicates an issue with video memory.
- ◆ **One long beep and nine short beeps** means there is a problem with the ROM (BIOS AWARD).
- ◆ **Three beeps, pause, four beeps, pause, followed by a beep** signals an error with your graphics card.
- ◆ **Four beeps, pause, three beeps, pause, and then one beep** indicates a system memory problem.
- ◆ **Five short beeps** is another indication of issues with your CPU.
- ◆ **Long, constant beeps** alert system memory problems. PHOENIX BEEP CODES

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DID YOU KNOW?

IT IS BELIEVED THAT THE FIRST COMPUTER VIRUS RELEASED IN THE WORLD WAS A BOOT SECTOR VIRUS, WHICH WAS CREATED IN THE YEAR 1986 BY THE FAROOQ ALVI BROTHERS. IT WAS DESIGNED TO PROTECT THEIR RESEARCH WORK.

Answer for riddle asked in page no. 2

Spooofing.

(It is type of scam where an intruder attempts to gain unauthorized access to a user's system or information by pretending to be the user)



Block chain Technology

Block chain (BC), the technology behind the Bit coin crypto-currency system, is considered to be both alluring and critical for ensuring enhanced security and (in some implementations, non-traceable) privacy for diverse applications in many other domains - including in the Internet of Things (IoT) eco-system. Intensive research is currently being conducted in both academia and industry applying the Block chain technology in multifarious applications. Proof-of-Work (PoW), a cryptographic puzzle, plays a vital role in ensuring BC security by maintaining a digital ledger of transactions, which is considered to be incorruptible. Furthermore, BC uses a changeable Public Key (PK) to record the users' identity, which provides an extra layer of privacy. Not only in crypto currency has the successful adoption of BC been implemented but also in multifaceted non-monetary systems such as in: distributed storage systems, proof-of-location, healthcare, decentralized voting and so forth.

Benefits and limitations of blockchain:

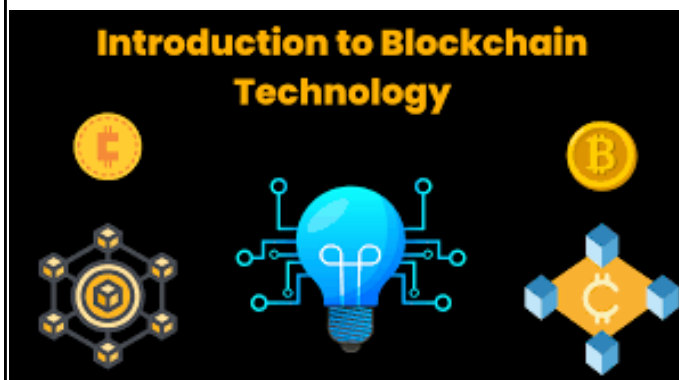
Numerous benefits of blockchain technology are being discussed in the industry and proposed by thought leaders around the world in blockchain space. The top 10 benefits are listed and discussed as follows.

Decentralization :

This is a core concept and benefit of blockchain. There is no need for a trusted third party or intermediary to validate transactions; instead a consensus mechanism is used to agree on the validity of transactions.

Transparency and trust :

As blockchains are shared and everyone can see what is on the blockchain, this allows the system to be transparent and as a result trust is established. This is more relevant in scenarios such as the disbursement of funds or benefits where personal discretion should be restricted



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Water Droplet Computer

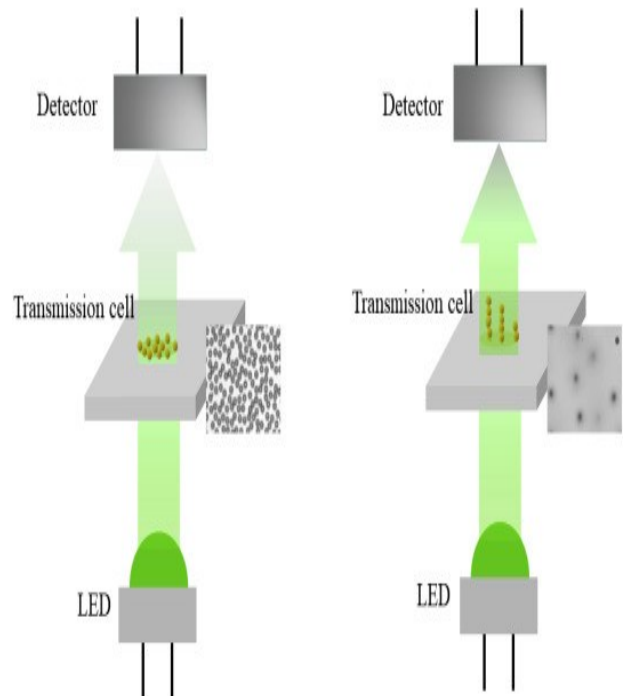
As anyone who has experienced the devastation of spilling a glass of water on their laptop knows, H₂O and computers don't mix. Almost equally as bad? Magnets. Both are terrible, horrible, no-good computer killing substances... which is why it was kind of a surprise to learn about a brand new computer built using water droplets and an electromag net. A 'computer' is a machine that can follow a program or list of instructions. This computer, announced in a paper published this week in Nature Physics, doesn't process information, however, like electronic computers do today. Instead, it can manipulate tiny droplets of water. A bioengineer at Stanford who designed the computer along with his students said "Droplets are fascinating material, because they are a little bag, you can put anything you want in it. In this case, his team put tiny amounts of magnetic nano particles into the water droplets, and placed them on a tiny metal maze about the size of a stamp. The metal bar act as pathways along which the magnetic drops can travel- -a movement that is equivalent to the patterns of ones and zeros that make up computer code today. The hope is that one day, those tiny droplets could act like test tubes, analysing chemicals or biological components more quickly and more easily than any current lab technology. There are plans to release the design of this physical computer to the public.

"In our experiments with laser light, we could see that the light is trapped inside the water droplet. When the droplet shrinks due to evaporation, it appears to flash every time its size is right to create the resonance phenomenon."

Javier Marmolejo, Study Main Author and Doctoral Student, Physics, University of Gothenburg

a) No field

b) With field



**K. Anusuya Devi
I M.Voc.(SD)**



What you
say...

WHAT INSPIRES YOU?

Bruce lee's quotes.

--R .Viswanath
II-B.Voc.(SD)

Speech of Sagayam
IAS.

-- S.Vigneshwaran.
III-B.Voc.(SD)

My Father.

--K.Sowmiya
II B.Voc.(SD)

Motivational talk,
movies, songs and
my own confidence.

-- A.Pandivel.
III B.Voc.(SD)

Dr. APJ. Abdul
Kalam.

--Most of the students
B.Voc. & M.Voc.(SD)

Saina Nehwal.

-- V.Sri Surya
I B.Voc.(SD)

My teachers are my
inspiration.

-- S.Priyanka
I M.Voc.(SD)

TensorFlow: The Android of AI

Tensor Flow is a library of files that allows researchers and computer scientists to build systems that break down data, like photos or voice recordings, and have the computer make future decisions based on that information. This is the basis of machine learning: computers understanding data, and then using it to make decisions. When scaled to be very complex, machine learning is a stab at making computers smarter. Here are the details: the TensorFlow system uses data flow graphs. In this system, data with multiple dimensions (values) are passed along from mathematical computation to mathematical computation. Those complex bits of data are called tensors. The math-y bits are called nodes, and the way the data changes from node to node tells the overall system relationships in the data. These tensors flow through the graph of nodes, and that's where the name TensorFlow comes from. Open-sourcing Tensor Flow allows researchers and even grade students the opportunity to work with professionally-built software, sure, but the real effect is the potential to inform every machine learning company's research across the board. Now organizations of all sizes—from small startups to huge companies on par with Google—can take the TensorFlow system, adapt it to their own needs, and use it to compete directly against Google itself.

TensorFlow Lite also provides an API for running models using C and C++. If your app uses the Android NDK, you should consider



using this API. You may also want to consider using this API if you want to be able to share code between multiple platforms. For more information about this development option, see the Development tools page.



TensorFlow Hub

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Machine Learning













We are living in the world of humans and machines. The Humans have been evolving and learning from their past experience since millions of years. On the other hand, the era of machines and robots have just begun. You can consider it in a way that currently we are living in the primitive age of machines, while the future of machine is enormous and is beyond our scope of imagination. these machines or the robots have to be programmed before they start following your instructions. But what if the machine started learning on their own from their experience, work like Gandhi us, feel like us, do things more accurately than us?The performance System — Takes a new board as input and outputs a trace of the game it played against itself. The Critic — Takes the trace of a game as an input and outputs a set of training examples of the target function.

A. Arun Kumar
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Top 10 Online Book Reading Websites

<p>10. 24Symbols</p> 	<p>6. Blurb</p> 	<p>3. Open Library</p> 
<p>9. Bookish</p> 	<p>5. Smashwords</p> 	<p>2. Internet Archive</p> 
<p>8. Wattpad</p> 	<p>4. Google Books</p> 	<p>1. Project Gutenberg</p> 
<p>7. Scribd</p> 	<p style="text-align: center;">Y. Jeya Seela & R. Nandhini III B.Voc. (SD)</p>	

CLOUD SERVICE PROVIDER



- MICROSOFT OFFICE 365
- WORDPRESS
- SLACK
- ADOBE CREATIVE CLOUD
- VERIZON CLOUD
- APPLE ICLOUD
- AMAZON DRIVE
- ALIBABA CLOUD
- IBM RED HAT
- ORACLE CLOUD
- RACKSPACE



CLOUD COMPUTING



If we are asking different peoples about cloud computing, different peoples have different

views about cloud computing. Some say it is widely distributed, some say it is network based, some say it is used for storage purpose. But actually cloud computing means using someone's else server to host, to process and to store data. Cloud computing is the delivery of computing services—including servers, storage, databases, networking, software, analytics, and intelligence—over the Internet (“the cloud”) to offer faster innovation, flexible resources, and economies of scale. It is model for enabling on-demand network access to a shared pool of configurable computing resources that can be rapidly released. Cloud computing is a big shift from the traditional way businesses think about IT resources. Here are seven common reasons organisations are turning to cloud computing services: Cost, speed, global scale, productivity, performance, reliability, security.

COMPUTING PARADIGM DISTINCTIONS:

Centralized computing: This is a com-

puting paradigm by which all computer resources are centralized in one physical system. All resources (processors, memory, and storage) are fully shared and tightly coupled within one integrated OS. Parallel computing: In parallel computing, all processors are either tightly coupled with centralized shared memory or loosely coupled with distributed memory. Distributed computing: (or distributed processing) is the technique of



linking together multiple computer servers over a network into a cluster, to share data and to coordinate processing power. Such a cluster is referred to as a “distributed system.” Distributed computing offers advantages in scalability (through a “scale-out architecture”), performance (via parallelism), resilience (via redundancy), and cost-effectiveness (through the use of low-cost, commodity hardware). Cloud computing: An Internet cloud of resources can be either a centralized or a distributed computing system. The cloud applies parallel or distrib-

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