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Dr. R.K. Tandon

IMAGENET

By Agrima Aggarwal

Our society is more technologically advanced than ever, with some people going on moon and customized radio stations that play music only we like. Yet our most advanced machines and computers struggle at this task. **Image Net is one of the progress in the field of researches of Computer Vision which is the part of Artificial Intelligence.**

How to teach Computers to understand pictures?

We have made mega pixel cameras but haven't delivered sight to the blind. For example, Security Cameras are everywhere but they do not alert us when the child is drowning in the swimming pool. Photos and videos are the integral part of the human life, yet our most advanced software's are still struggling at understanding and managing them. So collectively, we as a society are blind as even **our smartest machines are blind.**

Cameras can take pictures by converting light into a two dimensional ray of numbers known as pixels but **to take pictures is not as same as to see** and by seeing means to understand. It's not just the eyes that we see from, but also the brain that creates the vision and helps us understand what's there in front of us. **So vision begins with the eyes, but truly takes place in the brain.** So basically we want to teach the computers the things just the way we do. It includes, naming objects, identifying people, understanding relations, emotions, actions and intentions.



The first step towards this is to teach the computers to see objects. For that we can we can fragment every image as a collection of shape and colors. Basically, we want to tell the computer the structure of the image as a collection of shapes and their characteristics. For example, we can tell a computer that a cat has a round face, chirpy body and a long tail.



But this is not sufficient for the different variations of an object. For example, the

characters of a simple cat can't show all the emotions of the cat.

No one tells a child to see, they learn it through their experiences and examples. So instead of feeding computers with algorithms, we should give algorithms the kind of training a child is given through experiences in both quality and quantity. For that we need to have a database that has far more images that we've ever had.



ImageNet is an image database organized according to the word net hierarchy, in which each each node of the hierarchy is depicted by hundreds and thousands of images. It was

created by downloading nearly a billion images and by using the cloud sourcing technology to label those images. It took around 50,000 workers from 167 countries to clean, sort and label those images. It was delivered in 2009 with around 15,000,000 images in around 22,000 categories having images depicting all kinds of emotions, poses of a particular object. It was opened on world wide research community for free. We can even add more images to this database. This platform gave the data to nourish the computer brains. A machine learning algorithm called Convonutional Neural Network was used for this purpose. This algorithm became successful in the image recognition by the computers. Now the computer can tell us what the image contains, the details like the modal of the car.etc.

But this is just the beginning. There's much more for us to contribute and teaching computer understands images just the way we do.

Social Media Engagement and Addiction

Neha Budhiraja

The emerging new influencer community is wielding significant power over the perceptions of brand and companies, largely driven by the expansion of social media channels through which influencer communicate. The "Nobodies" of the past are now the new "Somebodies" demanding of communication the attention continuous professionals who seek engagement with targeted consumers throughout the various channels of the social web.

For most people, social networking sites like Facebook and Twitter are harmless platforms .Platforms that allow for social interaction and personal expression. For other, social media has become more than an entertaining form of engagement; it has become an increasing compulsion. The question is that –Can a person really become addicted to social media?

This is a notion that researchers are beginning to address, and recent studies suggests that YES, social media addiction is real.



Addictions are after all about feeding an urge, and one of the greatest human urge is the yearning to feel connected and a part of something larger. Nothing satisfies this particular urge like logging on and being social with the masses at any hour of the day or night. Social networks are massively addictive. Most people I know check and interact on social sites constantly throughout the day. And they have no idea how much actual time they are spending on social sites. Desires for social media are difficult to control because giving in to these social urges seems far less harmful than giving into drugs. Being online is easier for people who suffer from self-esteem issues, and within this group, an addiction to sites like Facebook and twitter is much more formed.

Are you guilty of checking your Facebook account before you get out of bed in morning? Do you tweet while on a romantic first date? You may think your own social media habits are harmless, but how do you know if you've crossed the line into an

addiction? One way to check yourself is to evaluate your feelings about social media. For instance, when you don't have access to it, say while on vacation or at an event such as wedding, do you feel anxious and can think of little besides what you're missing online? Would it be an accurate statement to say that social media brings you the most pleasure in your life? If you answered 'Yes' to these question, then it might be time to address your relationship with social media. If you are a social media addict, and your addiction is getting worse, there's a reason for that, most of the major network companies, as well social content creators, are working very hard to make their networks so addictive that we can't resist them. When we think of addiction, the picture that normally comes to mind is that of a gaunt man or woman, huddles in a corner, trying desperately to get his/her next fix of heroin. But addiction isn't just about substance abuse. If a person engages in an activity to a put where it comes compulsive and interferes with ordinary life, then as per Psychology today, that too counts as an addiction. One trick social networks use is a notification number showing the number of people at a glance who have mentioned or followed you. Notification number work just like that- Seeing a red "3" on Facebook notification bar is like a click bait headline "You won't believe what three people said about you". You've get to click. And over time it becomes addictive.



One of the best things you can do to reign in your addiction is to keep track of how exactly how much time you spend on sites like Facebook and twitter. The best idea is to schedule your social media time and stick to that schedule no matter what. Close down your web browsers and remove application that could tempt you. Use a good oldfashioned alarm clock so that your phone doesn't linger by your side and keep you from precious hours of sleep. Remember, you must be your own gatekeeper and make sure you're getting the important tasks accomplished every day.

But there comes a plus side too. The flip side of social media addiction can have positive effect on your marketing strategies once you know exactly how your own customers use social site. Most importantly, always acknowledge and abide by social media 'golden rule'- Never sell to your market. Instead engage with them and serve

them. There is no doubt that social media will continue to shape the way we live and conduct our business online. In the midst of this, it is wise to remember that little goes a long way and sometimes you can have too much of a good thing. In the world of social networking, Facebook benefits most from network effect. Facebook happened to be at top social network when social networking busted out as a mainstream activity. Now everybody's Facebook because on everybody's on Facebook. And even people who don't like the social network use it anyway, because that's where their family, friends and colleagues are - and because of addiction. Social selling is another recent phenomenon as a case in point. Those in sales are increasingly turning to social media as a means to create and nurture new leads and are encouraged to build a presence and sense of thought leadership

I don't want to suggest that we can all go back to an age before computers. Yes Facebook can be great for catching up with your friends and family. Yes Twitter can be fun and amusing. The only part is that you have to know what you're dealing with. Social media is the equivalent of candy for the brain. Yes it's good to get a sugar rush once in a while. But if you do nothing, but live on chocolate doughnuts, you're going to be too healthy.

The Next Industrial Revolution: Powered by AI

By Shreya Mago



"The actual path of a raindrop as it goes down the valley is unpredictable, but the general direction is inevitable,"

Rightly said by the great digital visionary Kevin Kelly. The technology has immersed in a huge amount over the years expressing surprising patters that are evitable. The world elite are clearly aware that Artificial Intelligence is bringing about a fundamental societal shift that is rapidly reinventing the world in which we currently reside in. Over the past two decades the world economic forum has seen a major shift in technology where Artificial Intelligence has took over a major portion of human brain and creativity.

These days the machines are very well apt with human brain and its emotions and are made to deal with crisis in the economic sector as well. Economists have come up with the idea of dealing with crisis in the economic and banking sectors using AI techniques. The industrial revolution is being driven by the automation and augmentation of knowledge-based work. By creating new ways to deploy virtual labour to automate knowledge-based tasks, we are seeing a fundamental restructuring in the way humans and machines work together for the creation of a stronger, more dynamic digital economy.

In the further years, AI and Machine Learning could lead to a hollowing out of middle income jobs that require less human intelligence. We can observe examples in current scenario. Last month Infosys 9000 "released" employees due to automation of entry level jobs. This is the beginning of an eon of automation. In the years to come AI and Machine Learning techniques will be faced with several socio economic opportunities and obstacles. Scientists are already faced with ethical issues concerning design of "humanoids" as they have been called in Hollywood productions. It won't be an overstatement to say that AI targets on replacing humans and making the economic sector more machine friendly according to the increasing technology.



The next industrial revolution largely refers to computerisation and manufacturing industry. The industries that will be affected the most from a replacement with automation are construction, accounts and transport. In combination with Internet of Things the advances can be unprecedented. A recent advertisement doing the rounds online are sponsored by 'Amazon Go' stores. The stores use sensor technology, IoT, Machine Learning and Smart phone apps to enhance buyer's retail experience by letting him just walk into the store, pick up what he likes and simply leave without human intervention. This shows we can soon say goodbye to retail store cash counter staff and queues. Anything that's working on an AI-based system is bound to be very vulnerable to the replacement by AI as it's easily automated already. This is just the beginning.



A tandem imperative lies with technology leaders to evolve the optimum platforms and solutions to drive economic growth and success across our digital economies and societies. We must remember that huge technological shifts have happened before and they will happen again. It is the businesses and individuals who embrace these changes who will reap the biggest rewards as failure to adapt is far more detrimental than early adoption.

Role of Technology in Demonetisation Ankit Arya

Ok, the fancy word "demonetization" which we (many of us) didn't know before 8th November 2016 but then came to know after 8 p.m. means "Withdrawal and replacement of legal tender". The sudden announcement of discontinuing old currency notes of 500 and 1000, by Prime Minister Sh. Narendra Modi took almost every Indian by surprise.



Before I elaborate upon the perils and impact of demonetisation, I must look into the facts first. Firstly, demonetisation took place for the first time during the years 1971-1973 in U.K. Secondly, India is one of the most cash intensive countries in the world with a cash-to-GDP ratio of 12 percent, and value of transactions through ATMs have only been rising over the years. A high cash-based system only widens the door for corruption within a nation. Unfortunately, today the machinery of corruption is ubiquitous, which is why we need the help of technology to rescue us from this colossal institution. Back to business you were rich till 7:59 but the next minute your asset became your liability.

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And then technology proved to be a life saver (e-wallets, banking apps, plastic money, etc) for daily transactions. Of course one could pay through old smart phones as well but as there were many doubts like how, when and where...also safety concerns, mobile banking did not take off as expected. However, to survive, with changing times one must change.

Then we started paying through technology to try to skip lines in order withdraw cash.

You cannot take your own money as there were day to day changes in rules but our apps and tech was not biased and helped us a lot in order to pay someone or pay for recharge, and other daily needs.

One more thing we have more white money if we pay through e-cash and our economy will grow and increase our GDP. The current government fully understands the potential of technology and has been constantly encouraging greater adoption and execution of reforms that are more techdriven and less people-dependent. With a series of strategically planned schemes, it is progressing towards the vision of financial inclusion that will be fuelled by information technology.



We use a word for technology in legal tender "Digitisation". Banks have been the earliest in India to adopt technology by automating systems and streamlining their processes. A strong parallel economy choked with counterfeit notes had been eroding the country and de-stabilising the economy. Introduction of tech advancements have enabled banks to keep a high level of security, check fraud, abuse or pilferage, and to minimise the risk and cost of handling cash. Introduction of non-cash payment modules like RTGS, NEFT, NECS, UPI and digital wallets also play an instrumental role in bringing greater transparency and managing audit trails.

Every industry has the potential to grow when it turns to technology and I particularly endorse this theory. For most industries, automation and obtaining real time data can have a ripple effect through the entire value chain that it operates in. Security is another concern for various industries, and technology once again can be the answer here. Other industries can also benefit by using tech based 'deterrents' like

RFID in logistics, Digitisation of data in taxation sector or GPRS in travel etc. By adopting these smart solutions, not only do we close loopholes, but reduce human involvement and thereby, the potential for unintentional intentional and errors. Innovation in the electronic payment space, especially in the micro payment sector will boost the digital transacting ecosystem and monitor and control the exchange of money. Creating a healthy and transparent system is in the interest of macro-economic concerns and a means to check inflation, attract foreign investment and bring overall stability to the economy. Notably, technology will be the driving force that will boost the economy and help minimise corruption, but as I have always said that in a country like ours, Cash and Alternate mode of payments will continue to co-exist.



And nowadays Indian government also wants us to go cashless and only use digipay for daily transactions. Tickets booked from IRCTC free or in Rs.1 insurance (online only), cashback and many more. I strongly believe that moving to digital payment options will make Indian economy stronger and more transparent

Use of Twitter for Natural Language Processing Applications

Himja Sethi

Twitter - A world wide social media platform. Twitter is not just a social interaction website but also an information dissemination platform and a source of news, a tool for public opinion formation, and a dash of humour for our daily lives. Twitter has 332 million active users posting around 6,000 tweets per second which corresponds to over 350,000 tweets per minute and 200 billion tweets per year. With such voluminous amount of real time data produced on a consistent pace, twitter is a goldmine for a diverse set of applications that includes opinion mining, product image analysis and analysis of sentiment towards matters of social or political concern among others.



Twitter allows users to express their ideas, opinions, feedback and comments in the form of "tweets", a term used to refer to text with maximum of 140 characters. Users can also re-tweet, follow, share or like. It has numerous unique features that make it a favourite for Natural Language Experiments for example content is purely text, public and multilingual. The content is largely unbiased, not restricted by geographical boundaries and indexed. Twitter even proposes online applications and gives information of how they can be used to extract tweets for scientific experiments.

Researchers use these apps to extract tweets from twitter and tag them as positive, negative and neutral through use of complex classification algorithms and machine learning techniques. A widely used tool for application of machine learning is Weka. Environment Waikato for Knowledge Analysis is a suite of machine learning softwares in Java developed by University of Waikato, New Zealand.



Weka is an tool with embedded machine learning classification algorithms. Input can be given in specified formats (like cvv, arff etc). By applying a suitable classifier, the results can be obtained in tabular or graphical format. The outputs are available in standardised parameters of Precision, Recall and F-measure.

The experiments include short text classification, information retrieval and sentiment analysis among others. However, the experiments involving use of Twitter for Natural Language Processing have a unique set of challenges. The form of text available on Twitter is known as "short text". Such text is characterised by use of short forms, acronyms, slang, grammatical errors and special symbols like hashtags (#), alias (@) and emojis (pictures depicting facial expressions). These pose a threat to accuracy and credibility of the experiment. Hence they are removed through a laborious process of pre-processing. During this initial phase, a researcher first removes special symbols. He then replaces the acronyms with their respective full forms and emojis with the sentiment they represent like positive, neutral and negative. Spelling mistakes must be corrected and slang

replaced by grammatically correct sentence formation. Once this is over, now the time is to apply a suitable and efficient claasifier. Not many classifiers perform well on text domain. An average accuracy by a standard classifier is between 50 to 60 % only. Needless to say, there is scope for improvement. Novel approaches like nature algorithms and meta-heuristic inspired techniques are now being adapted to natural language domain results and are encouraging. A Chinese origin scientist Xin She Yang has taken the Artificial and Machine Learning world by Storm by devising several high performance, bio inspired algorithms that are based on intelligent behaviour of unique animal, bird and insect species. Few of these algorithms are Bat Algorithm, Cuckoo Algorithm, Firefly Algorithm etc. Although they are best suited for an Optimisation problem, their adapted versions have helped improve efficiency of existing classifiers when applied on complex domains. An experiment of "Bat Inspired Algorithm used for Sentiment Analysis of Twitter Data" 58% accuracy produced which was marginally better than SVM, an algorithm considered the most widely used standard classifier till 2010.