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experimental
ethics
triangulation

TECHNO-WIZARDS

2017-2018



**E.G.S PILLAY ENGINEERING COLLEGE
(AUTONOMOUS)
NAGAPATTINAM**

Department of Computer Science & Engineering



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MESSAGE



Chev.S.Paramesvaran

I deem it a great pleasure and privilege to congratulate the faculty members as they bring out their magazine. This magazine represents the newest channel to showing out the talents of our students.

We hope that this magazine will become the ultimate focus for your participation as we seek to strengthen and enhance our collaboration of knowledge.



Dr.S.Ramabalan

My Heartfelt congratulations for this new release of magazine. A milestone achievement indeed! There is no doubt in my mind that it will serve as a beacon to the future generations. I wish you success in all your endeavours.



Dr.M.Chinnadurai

I congratulate the members for releasing their magazine. This magazine is started with view to broadcast the various events for the student intelligence. Individually and collectively, this magazine is a measure of our success and foundation of our future. I wish you all the very best.

VISION

o To produce globally competent computer professionals capable of adaptive to the ever-changing technological trends of Industry and Society

MISSION

o To build the core competence desirable for a computer professional such as design, development, testing and maintenance of software systems to work in real world projects excelling the expected standards of Industries.

o To train the students to acquire high demand skills of emerging technologies to make them preferable for employers.

o To provide state-of-the-art learning facilities for effective implementation of learner centric teaching–learning process to develop professional skills, self-learning and lifelong learning capabilities.

PSOs

The graduates will have

PSO1: The ability to apply software engineering principles and practices to design and develop software systems that meet the automation needs of industrial and societal problems.

PSO2: The ability to demonstrate the technical skills and knowledge gained in the fields such as Artificial Intelligence, Data Science, Cloud Computing, Social Network Analysis & Mobile Application development to build successful career and pursue higher education.

PEOs

PEO1: Graduates will have successful careers in the field of computer science and engineering as computer professionals or entrepreneurs.

PEO2: Graduates will have desirable knowledge on core competencies and emerging technologies to pursue higher education and research.

PEO3: Graduates will continue to learn and adapt to the world of constantly evolving technology.

Graduates will be able to

PO1: Apply the knowledge of mathematics, science, engineering fundamentals, and an engineering specialization to the solution of complex engineering problems.

PO2: Identify, formulate, research literature, and analyze complex engineering problems reaching substantiated conclusions using first principles of mathematics, natural sciences, and engineering sciences.

PO3: Design solutions for complex engineering problems and design system components or processes that meet the specified needs with appropriate consideration for the public health and safety, and the cultural, societal, and environmental considerations.

PO4: Use research-based knowledge and research methods including design of experiments, analysis and interpretation of data, and synthesis of the information to provide valid conclusions.

PO5: Create, select, and apply appropriate techniques, resources, and modern engineering and IT tools including prediction and modelling to complex engineering activities with an understanding of the limitations.

PO6: Apply reasoning informed by the contextual knowledge to assess societal, health, safety, legal and cultural issues and the consequent responsibilities relevant to the professional engineering practice.

PO7: Understand the impact of the professional engineering solutions in societal and environmental contexts, and demonstrate the knowledge of, and need for sustainable development.

PO8: Apply ethical principles and commit to professional ethics and responsibilities and norms of the engineering practice.

PO9: Function effectively as an individual, and as a member or leader in diverse teams, and in multidisciplinary settings.

PO10: Communicate effectively on complex engineering activities with the engineering community and with society at large, such as, being able to comprehend and write effective reports and design documentation, make effective presentations, and give and receive clear instructions.

PO11: Demonstrate knowledge and understanding of the engineering and management principles and apply these to one's own work, as a member and leader in a team, to manage projects and in multidisciplinary environments.

PO12: Recognize the need for, and have the preparation and ability to engage in independent and lifelong learning in the broadest context of technological change.



Science, engineering

Use of process
consideration
societal, and
knowledge
analysis
to pro

2020

Big Data

Big data has been a big topic for the past five year or so, when it started making headlines as buzzword. The idea is that mass quantities of gathered data—which we now have access to—can help us in everything from planning better medical treatments to executing better marketing campaigns.



But big data's greatest strength—its quantitative, numerical foundation—is also a weakness. In 2017, I expect we'll see advancements to humanize big data, seeking more empathetic and qualitative bits of data and projecting it in a more visualized, accessible way. IDC's Worldwide Semiannual Big Data and Analytics Spending Guide, enterprises will likely spend \$150.8 billion on big data and business analytics in 2017. All the companies by now have the data and know how to store and process Big Data. The real difference is going to be how fast can they deliver analytics solutions for better business decisions. The Focus in 2017 is going to be Speed.



. Processing Capabilities of Big Data solutions will certainly increase. Projects like Spark, Storm, Kafka etc. were developed with this aspect in mind.



We will see companies advancing from POCs to real world applications with these technologies..Applications that simplify data cleaning, data preparation and data exploration tasks is expected to increase. Tools like Tableau with Hadoop has seen increasing popularity in that last 2 years. These products will greatly minimize the effort of the end-users. Companies like Informatica have already shown innovations in this frontier. We can see more such products and more companies working towards such self-service solutions.To summarize, Big Data is still very much on rise with more adoptions and more applications of the existing technologies and launch of newer solutions related to Big Data security, Cloud integrations, data mining etc.



Artificial Intelligence

Graphics processing units (GPU) and appliances specifically designed and architected to efficiently run AI-oriented computational jobs. Currently primarily making a difference in deep learning applications. Sample vendors: Alluviate, Cray, Google, IBM, Intel. The market for artificial intelligence (AI) technologies is flourishing. Beyond the hype and the heightened media attention, the numerous startups and the internet giants racing to acquire them, there is a significant increase in investment and adoption by enterprises. A Narrative Science survey found last year that 38% of enterprises are already using AI, growing to 62% by 2018. Forrester Research predicted a greater than 300% increase in investment in artificial intelligence in 2017 compared with 2016. IDC estimated that the AI market will grow from \$8 billion in 2016 to more than \$47 billion in 2020.



Coined in 1955 to describe a new computer science sub-discipline, "Artificial Intelligence" today includes a variety of technologies and tools, some time-tested, others relatively new. To help make sense of what's hot and what's Forrester just published a TechRadar report on Artificial Intelligence(-for application development professionals), a detailed analysis of 13 technologies enterprises should consider adopting to support human decision-making.

Hadoop

Hadoop has been widely adopted by enterprises for their data warehouse needs in the past year. The trend seems to continue and grow in the coming year as well. Companies that have not explored Hadoop so far will most likely see its advantages and applications.



In terms of the technological developments, Hadoop will come up with features that would make it more enterprise ready. Once Hadoop security projects like Sentry, Rhino etc. gain stability, Hadoop's implementation will expand across many more sectors and companies can use the solutions without much of security concerns.

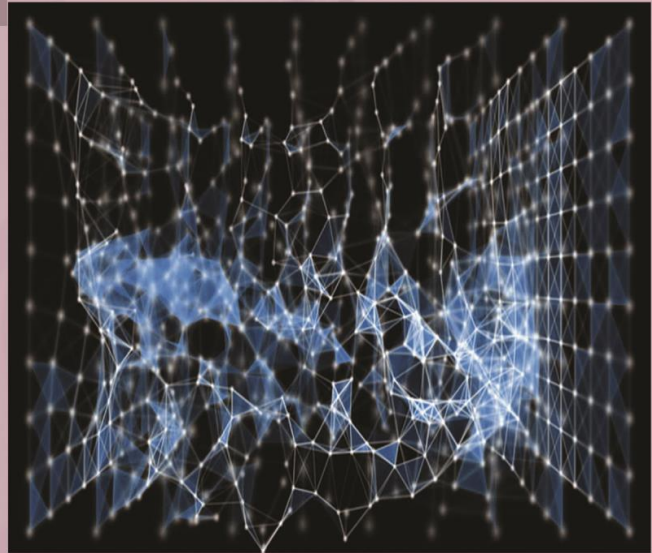


Data Fabrics Spreading

The movement of big data is often associated with water. Indeed, the big data ecosystem is replete with watery imagery. Data streams flow into data lakes and reservoirs with the help of products like Flume, Cascading, and MillWheel. But in the future, we may think of big data in other terms, such as fabric. In fact, that thread is starting to take hold among industry analysts like Forrester, which recently issued a report on the leading data fabric vendors, including Trifacta, Paxata, Informatica, Talend, IBM, Syncsort, SAP, Waterline Data, Oracle, Global IDs, and Denodo Technologies

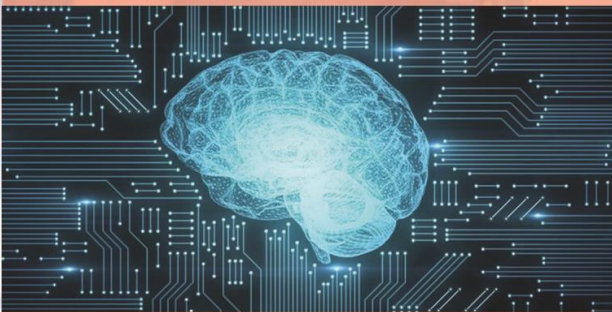
Data Fabrics Spreading

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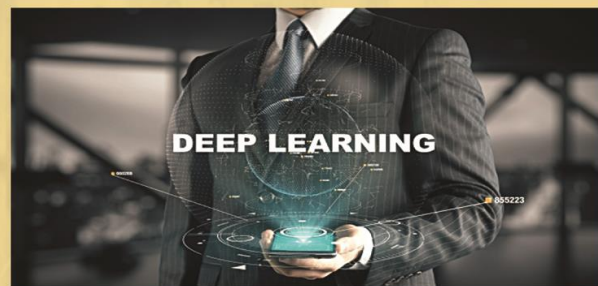
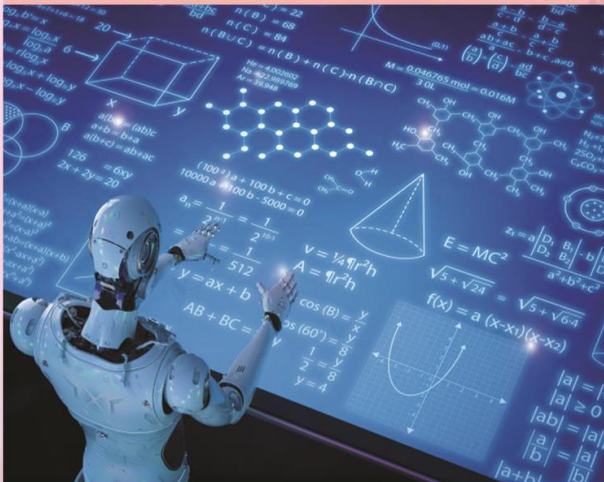
```
#selection at the end -no
mirror ob.select= 1
modifier ob.select=1
bpy.context.scene.objects.active =
print("Selected" + str(mo[0].id ob)
```

Deep Learning:



A special type of machine learning consisting of artificial neural networks with multiple abstraction layers. Currently primarily used in pattern recognition and classification applications supported by very large data sets. Sample vendors: Deep Instinct, Ersatz Labs, Fluid AI, MathWorks, Peltarion, Saffron Technology, Sentient Technologies.

If I had to summarize 2017 in one sentence, it would be the year of frameworks. Facebook made a big splash with PyTorch. Due to its dynamic graph construction similar to what Chainer offers, PyTorch received much love from researchers in Natural Language Processing, who regularly have to deal with dynamic and recurrent structures that hard to declare in a static graph frameworks such as Tensorflow.



Tensorflow had quite a run in 2017. Tensorflow 1.0 with a stable and backwards-compatible API was released in February. Currently, Tensorflow is at version 1.4.1. In addition to the main framework, several Tensorflow companion libraries were released, including Tensorflow Fold for dynamic computation graphs, Tensorflow Transform for data input pipelines, and DeepMind's higher-level Sonnet library. The Tensorflow team also announced a new eager execution mode which works similar to PyTorch's dynamic computation graphs

Learning Resources,

With Deep Learning and Reinforcement Learning gaining popularity, an increasing number of lectures, bootcamps, and events have been recorded and published online in 2017. The following are some of my favorites:

- The Deep RL Bootcamp co-hosted by OpenAI and UC Berkeley featured lectures about Reinforcement Learning basics as well as state-of-the-art research

- The Winter 2017 version of Stanford's Natural Language Processing with Deep Learning course. Also check out the course website.

- The new Coursera Deep Learning specialization

- UC Berkeley's Deep Reinforcement Learning Fall 2017 course.

- The Deep RL Bootcamp co-hosted by OpenAI and UC Berkeley featured lectures about Reinforcement Learning basics as well as state-of-the-art research

- Stanford's Theories of Deep Learning course.

- The Deep Learning and Reinforcement Summer School in Montreal

- The Tensorflow Dev Summit with talks on Deep Learning basics and relevant Tensorflow APIs.

BEST PROJECT IN 2017-2018

2017-2018 Network Security Project:



Photo sharing is an attractive feature which popularizes online social networks (OSNs). Unfortunately, it may leak users' privacy if they are allowed to post, comment, and tag a photo freely. In this paper, we attempt to address this issue and study the scenario when a user shares a photo containing individuals other than himself/herself (termed co-photo for short). To prevent possible privacy leakage of a photo, we design a mechanism to enable each individual in a photo be aware of the posting activity and participate in the decision making on the photo posting. For this purpose, we need an efficient facial recognition (FR) system that can recognize everyone in the photo. However, more demanding privacy setting may limit the number of the photos publicly available to train the FR system. To deal with this dilemma, our mechanism attempts to utilize users' private photos to design a personalized FR system specifically trained to differentiate possible photo co-owners without leaking their privacy. We also develop a distributed consensus-based method to reduce the computational complexity and protect the private training set.

We show that our system is superior to other possible approaches in terms of recognition ratio and efficiency. Our mechanism is implemented as a proof of concept Android application on Facebook's platform.

Privacy and integrity have been the main road block to the applications of two-tiered sensor networks. The storage nodes, which act as a middle tier between the sensors and the sink, could be compromised and allow attackers to learn sensitive data and manipulate query results. Prior schemes on secure query processing are weak, because they reveal non-negligible information, and therefore, attackers can statistically estimate the data values using domain knowledge and the history of query results. In this paper, we propose the first top-k query processing scheme that protects the privacy of sensor data and the integrity of query results. To preserve privacy, we build an index for each sensor collected data item using pseudo-random hash function and Bloom filters and transform top-k queries into top-range queries. To preserve integrity, we propose a data partition algorithm to partition each data item into an interval and attach the partition information with the data. The attached information ensures that the sink can verify the integrity of query results. We formally prove that our scheme is secure under IND-CKA security model.

```
mirror_mod.use_x = false  
mirror_mod.use_y = false
```

Our experimental results on real-life data show that our approach is accurate and practical for large network sizes.

Wireless sensor networks are employed in many applications, such as health care, environmental sensing, and industrial monitoring. An important research issue is the design of efficient medium access control (MAC) protocols, which have an essential role for the reliability, latency, throughput, and energy efficiency of communication, especially as communication is typically one of the most energy consuming tasks. Therefore, analytical models providing a clear understanding of the fundamental limitations of the different MAC schemes, as well as convenient way to investigate their performance and optimize their parameters, are required. In this paper, we propose a generic framework for modeling MAC protocols, which focuses on energy consumption, latency, and reliability. The framework is based on absorbing Markov chains, and can be used to compare different schemes and evaluate new approaches.

The different steps required to model a specific MAC using the proposed framework are illustrated through a study case. Moreover, to exemplify how the proposed framework can be used to evaluate new MAC paradigms, evaluation of the novel pure-asynchronous approach, enabled by emerging ultra-low-power wake-up receivers, is done using the proposed framework. Experimental measurements on real hardware were performed to set framework parameters with accurate energy consumption and latency values, to validate the framework, and to support our results.



Mobile communications (e.g., emails, Snapchat and Facebook) over a wireless connection is a norm in our Internet-connected society. Ensuring the security of communications between devices is an ongoing challenge. A number of authenticated key exchange (AKE) protocols have been proposed to verify the authenticity of a user and the integrity of messages sent over an insecure wireless communication channel. Recently, Tsai et al. proposed two AKE protocols designed for wireless network systems. In this paper, we demonstrate that their protocols are vulnerable to off-line password guessing attacks through presenting concrete attacks, con-



```
operation = "mirror 2":  
mirror_mod.use_x = False  
mirror_mod.use_y = False
```



an erasure-coded data archival system called aHDFS for Hadoop clusters, where $RS(k+r,k)$ codes are employed to archive data replicas in the Hadoop distributed file system or HDFS. We develop two archival strategies in aHDFS to speed up the data archival process. aHDFS-Grouping - a MapReduce-based data archiving scheme - keeps each mapper's intermediate output Key-Value pairs in a local key-value store. With the local store in place, aHDFS-Grouping merges all the intermediate key-value pairs with the same key into one single key-value pair, followed by shuffling the single Key-Value pair to reducers to generate final parity blocks. aHDFS-Pipeline forms a data archival pipeline using multiple data node in a Hadoop cluster. aHDFS-Pipeline delivers the merged single key-value pair

pair to a subsequent node's local key-value store. Last node in the pipeline is responsible for outputting parity blocks. We implement aHDFS in a real-world Hadoop cluster. The experimental results show that aHDFS-Grouping and aHDFS-Pipeline speed up Baseline's shuffle and reduce phases by a factor of 10 and 5, respectively. When block size is larger than 32 MB, aHDFS improves the performance of HDFS-RAID and HDFS-EC by approximately 31.8 and 15.7 percent, respectively



`mirror nod.use y = false`

2017-2018 Image Processing Project:



In the study of Location-Based Social Network (LBSN) sign-in data as the recommended point of interest for groups, there are some problems such as poor recommendation accuracy and high bias in recommendation results because of the unbalanced number and diversity of individual sign-in and the different degree of group user association. In this paper, a new group recommendation model is proposed. Firstly, the existing individual recommendation model is combined with the text retrieval idea and the threshold function to improve the user rating strategy. Secondly, the recommendation strategy is used to aggregate the individual recommendation list. Considering users' friends relationship, similarity and frequency of sign-in, lead into the user gregariousness weight and activity weight, and form a new group user preference model to make recommendation. The experimental results show that the improved scoring strategy can improve the accuracy of recommendation, and the new group weighting model which recommend the points of interest for the groups can improve the recommendation quality by reducing the recommended deviation.

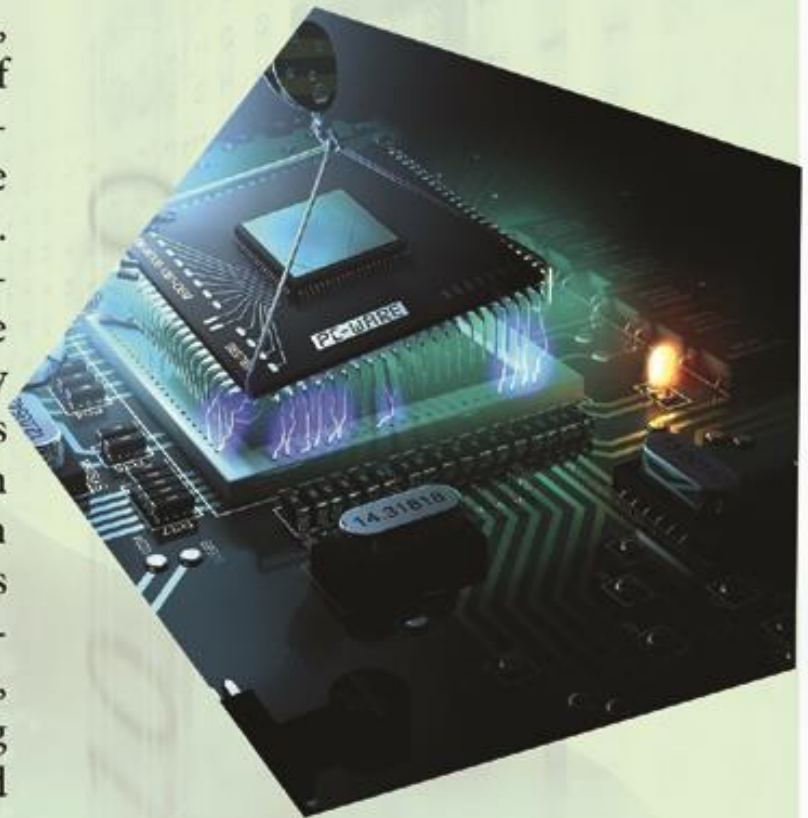
Social media sharing Websites allow users to annotate images with free tags, which significantly contribute to the development of the web image retrieval. Tag-based image search is an important method to find images shared by users in social networks. However, how to make the top ranked result relevant and with diversity is challenging. In this paper, we propose a topic diverse ranking approach for tag-based image retrieval with the consideration of promoting the topic coverage performance. First, we construct a tag graph based on the similarity between each tag. Then, the community detection method is conducted to mine the topic community of each tag. After that, inter-community and intra-community ranking are introduced to obtain the final retrieved results. In the inter-community ranking process, an adaptive random walk model is employed to rank the community based on the multi-information of each topic community. Besides, we build an inverted index structure for images to accelerate the searching process. Experimental results on Flickr data set and NUS-Wide data sets show the effectiveness of the proposed approach.

The past decade has witnessed the emergence and progress of multimedia social networks (MSNs), which have explosively and tremendously increased to penetrate every corner of our lives, leisure and work. Moreover, mobile Internet and mobile terminals enable users to access to MSNs at anytime, anywhere, on behalf of any identity, including role and group. Therefore, the interaction behaviors between users and MSNs are becoming more comprehensive and complicated. This paper primarily extended and enriched the situation analytics framework for the specific social domain, named as SocialSitu, and further proposed a novel algorithm for users' intention serialization analysis based on classic Generalized Sequential Pattern (GSP). We leveraged the huge volume of user behaviors records to explore the frequent sequence mode that is necessary to predict user intention. Our experiment selected two general kinds of intentions: playing and sharing of multimedia, which are the most common in MSNs, based on the intention serialization algorithm under different minimum support threshold (Min_Support). By using the users' microscopic behaviors analysis on intentions, we found that the optimal behavior patterns of each user under the Min_Support, and a user's behavior patterns are different due to his/her identity variations in a large volume of sessions data.



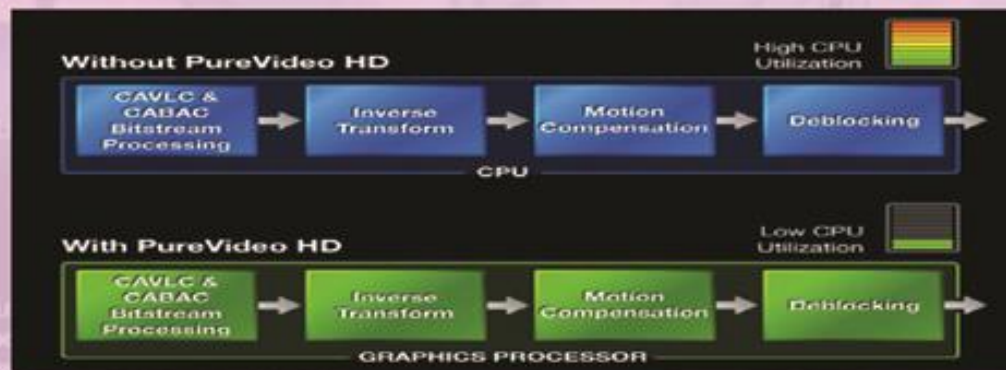
The proposed schema can be extended with a list of recommended actions, corresponding measures and effective policies that match with the offence type and subsequently with a particular incident. This matching will enable better monitoring, handling and moderate cybercrime incident occurrences. The ultimate objective is to incorporate the schema-based description of cybercrime elements to a complete incident management system with standard operating procedures and protocols.

The world is facing problems, such as uneven distribution of medical resources, the growing chronic diseases, and the increasing medical expenses. Blending the latest information technology into the healthcare system will greatly mitigate the problems. This paper presents the big health application system based on the health Internet of Things and big data. The system architecture, key technologies, and typical applications of big health system are introduced in detail.



```
if operation == "KILLON 2"  
mirror_cod.use_x = False  
mirror_cod.use_y = False
```


Front-end and back-end. The former exhibits the set of users that utilize cloud services and the later is materialized by data centers where the factual load is carry out. It's significant to say that the front-end users are the leading responsible of the workload shape within data centers. We point out this fact in an attempt to further investigate the server workload within real time angle. The main goal of this paper is to formalize the server load according to users' behavior in term of submitted tasks and submission rate and to apply stream mining techniques as an introductory step to build a real time prediction system.



The advent of social media and the rapid development of mobile communication technologies have dramatically changed the way to express the feeling, attitude, mood, passion etc. People often express their reactions, fancies and predilections through social media by means of short texts of epigrammatic nature rather than writing long text. Many micro blogging services like Twitter enable people to share and discuss their thoughts and views in the form of short texts without being constrained by space and time. Millions of tweets are generated each day on multifarious issues. Sentiments or opinions for diverse issues have been observed as an important dimension which characterizes human behaviour. Public frequently articulate their opinions towards various issues. In an effort to gain insights from people's point of views, this paper applies text mining on tweets generated on Twitter sites for two famous Indian political diplomats: Arvind Kejriwal and Narendra Modi. The results reveal value of this competitive study and how these diplomats could deal with their political affairs in a better way and identify areas where they need to take a better step into. This study could really help these diplomats to improve their political strategies.

A query facet is a significant list of information nuggets that explains an underlying aspect of a query. Existing algorithms mine facets of a query by extracting frequent lists contained in top search results. The coverage of facets and facet items mined by these kind of methods might be limited, because only a small number of search results are used. In order to solve this problem, we propose mining query facets by using knowledge bases which contain high-quality structured data. Specifically, we first generate facets based on the properties of the entities which are contained in Freebase and correspond to the query. Second, we mine initial query facets from search results, then expanding them by finding similar entities from Freebase. Experimental results show that our proposed method can significantly improve the coverage of facet items over the state-of-the-art algorithms.

`error_mod.use_x = false`

`error_mod.use_y = false`

#6 Tech Mahindra Limited



#7 Mphasis Limited



#8 Patni Computer Systems Ltd



#9 Larsen & Toubro Infotech Ltd



#10 CSC India Private Ltd



POPULAR IT COMPANY IN 2017-2018

1st place : TCS

2nd Place : Infosys

3rd Place : Wipro

4th Place : HCL Technologies

5th Place : Tech Mahindra

6th Place : L&T Infotech

7th Place : Oracle Financial Services

8th Place : Mindtree

9th Place : Mphasis

10th Place : Rolta India

CEO AT GOOGLE IN 2017-2018



Pichai Sundararajan (born July 12, 1972), also known as Sundar Pichai is an Indian-American Tamil business executive. He is the chief executive officer (CEO) of Google LLC. Formerly the Product Chief of Google, Pichai's current role was announced on August 10, 2015, as part of the restructuring process that made Alphabet Inc. into Google's parent company, and he assumed the position on October 2, 2015

Early life and education

Pichai was born in Madurai, Tamil Nadu, India in a Tamil family. His mother Lakshmi was a stenographer and his father, Regunatha Pichai was an electrical engineer at GEC, the British conglomerate. His father also had a manufacturing plant that produced electrical components. Pichai grew up in a two-room apartment in Ashok Nagar, Chennai.

Pichai completed schooling in Jawahar Vidyalaya, a Central Board of Secondary Education school in Ashok Nagar, Chennai and completed the Class XII from Vana Vani school in the Indian Institute of Technology Madras. He earned his degree from Indian Institute of Technology Kharagpur in metallurgical engineering. He is currently a distinguished alumnus. He holds an M.S. from Stanford University

in material sciences and engineering, and an MBA from the Wharton School of the University of Pennsylvania, where he was named a Siebel Scholar and a Palmer Scholar.

Career



Pichai speaking at the 2015 Mobile World Congress in Barcelona, Spain

Pichai worked in engineering and product management at Applied Materials and in management consulting at McKinsey & Company. Pichai joined Google in 2004, where he led the product management and innovation efforts for a suite of Google's client software products, including Google Chrome and Chrome OS, as well as being largely responsible for Google Drive. He went on to oversee the development of different applications such as Gmail and Google Maps. On November 19, 2009, Pichai gave a demonstration of Chrome OS; the Chromebook was released for trial and testing in 2011, and released to the public in 2012. On May 20, 2010, he announced the open-sourcing of the new video codec VP8 by Google and introduced the new video format, WebM.

On March 13, 2013, Pichai added Android to the list of Google products that he oversees. Android was formerly managed by Andy Rubin. He was a director of Jive Software from April 2011 to July 30, 2013. Pichai was selected to become the next CEO of Google on August 10, 2015 after previously being appointed Product Chief by CEO, Larry Page. On October 24, 2015 he stepped into the new position at the completion of the formation of Alphabet Inc., the new holding company for the Google company family.



Pichai had been suggested as a contender for Microsoft's CEO in 2014, a position that was eventually given to Satya Nadella. In August 2017, Pichai drew publicity for firing a Google employee who wrote a ten-page manifesto criticizing the company's diversity policies and arguing that "distribution of preferences and abilities of men and women differ in part due to biological causes and ... these differences may explain why we don't see equal representation of women in tech and leadership". While noting that the manifesto raised a number of issues that are open to debate, Pichai said in a memo to Google employees that "to suggest a group of our colleagues have traits that make them less biologically suited to that work is offensive and not OK".

In December 2017, Pichai was a speaker at the World Internet Conference in China, where he stated that "a lot of work Google does is to help Chinese companies. There are many small and medium-sized businesses in China who take advantage of Google to get their products to many other countries outside of China



ACHIEVEMENTS OF SUNDAR PICHAJ,

- He is the one who identified the lack of visibility in google search engine promotion



- It increased visibility of the search engine huge .its really true



- Like this he did many moves



- Mainly his vision and focus is future oriented



- He is not an good coder but he is good planner by targeting huge customer base

- I saw the news google deals for acquiring HTC for 1.1 billion and planned to start an local news channel in online platform in different way.

```
mirror_mod.use_x = False
mirror_mod.use_y = False
```


2017-2018 Big Data Project:



Microblog platforms have been extremely popular in the big data era due to its real-time diffusion of information. It's important to know what anomalous events are trending on the social network and be able to monitor their evolution and find related anomalies. In this paper we demonstrate RING, a real-time emerging anomaly monitoring system over microblog text streams. RING integrates our efforts on both emerging anomaly monitoring research and system research. From the anomaly monitoring perspective, RING proposes a graph analytic approach such that (1) RING is able to detect emerging anomalies at an earlier stage compared to the existing methods, (2) RING is among the first to discover emerging anomalies correlations in a streaming fashion, (3) RING is able to monitor anomaly evolutions in real-time at different time scales from minutes to months. From the system research perspective, RING (1) optimizes time-ranged keyword query performance of a full-text search engine to improve the efficiency of monitoring anomaly evolution, (2) improves the dynamic graph processing performance of Spark and implements our graph stream model on it. As a result, RING is able to process big data to the entire Weibo or Twitter text stream with linear horizontal scalability. The system clearly presents its advantages over existing systems and methods from both the event monitoring perspective and the system perspective for the emerging event monitoring task.

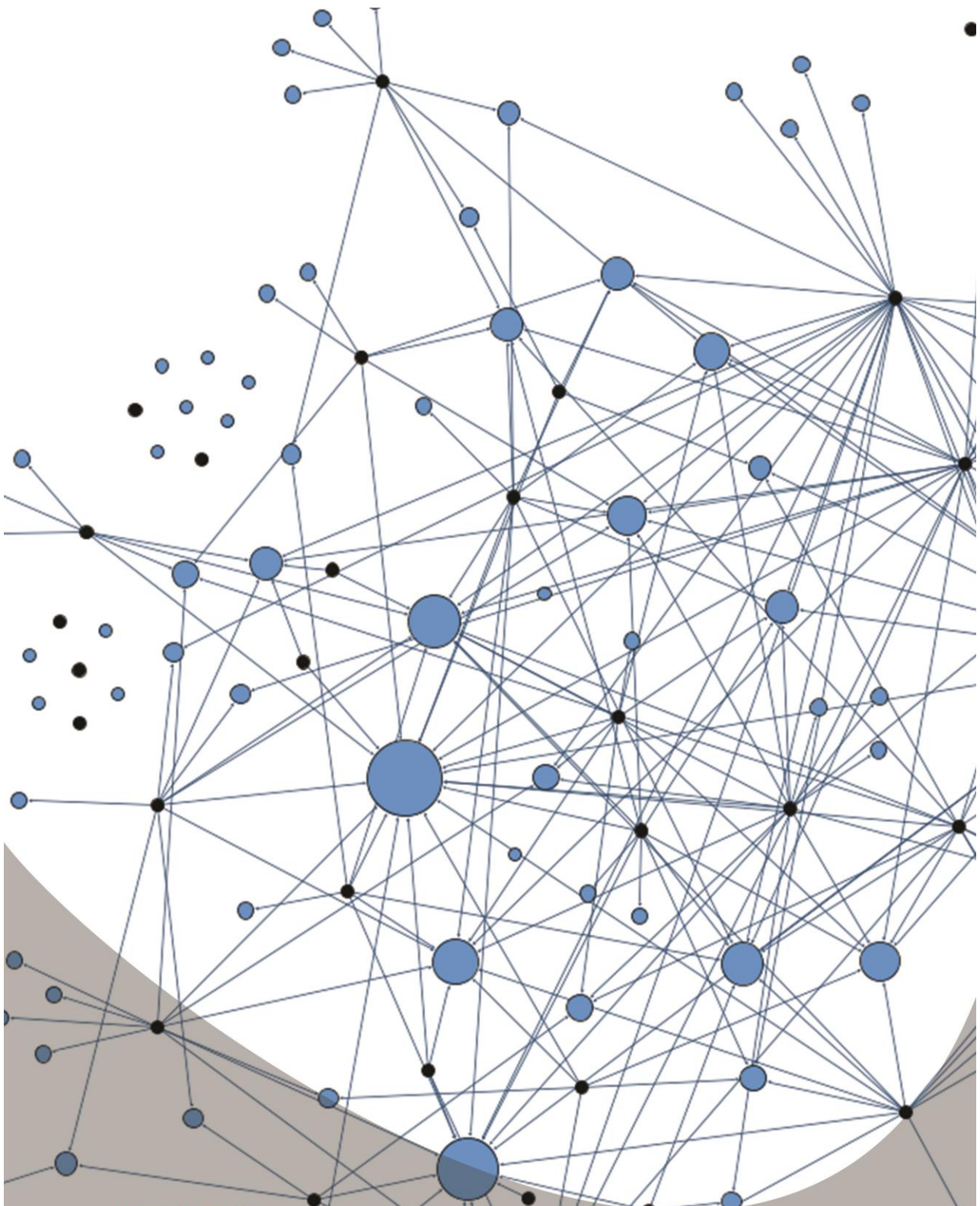
Model on it, As a result, RING is able to process big data to the entire Weibo or Twitter text stream with linear horizontal scalability. The system clearly presents its advantages over existing systems and methods from both the event monitoring perspective and the system perspective for the emerging event monitoring task.

The advancements in computer systems and networks have created a new environment for criminal acts, widely known as cybercrime. Cybercrime incidents are occurrences of particular criminal offences that pose a serious threat to the global economy, safety, and well-being of society. This paper offers a comprehensive understanding of cybercrime incidents and their corresponding offences combining a series of approaches reported in relevant literature. Initially, this paper reviews and identifies the features of cybercrime incidents, their respective elements and proposes a combinatorial incident description schema. The schema provides the opportunity to systematically combine various elements--or cybercrime characteristics. Additionally, a comprehensive list of cybercrime-related offences is put forward. The offences are ordered in a two-level classification system based on specific criteria to assist in better classification and correlation of their respective incidents. This enables a thorough understanding of the repeating and underlying criminal activities.

The proposed system can serve as a common reference overtaking obstacles deriving from misconceptions for cybercrimes with cross-border activities.



```
elif operation == "MIRROR ?":  
    mirror_mod.use_x = False  
    mirror_mod.use_y = False
```



EGS PILLAY

**ENGINEERING COLLEGE
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Nagapattinam - 611002