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S.NO	TITLE	YEAR	ABSTRACT
1.	A Fuzzy Model-based Integration Framework for Vision-based Intelligent Surveillance Systems	2017	This paper addresses a framework for event decision of vision-based intelligent surveillance system based on the fuzzy model. The input probabilities of the tasks for the fuzzy system are computed using the object detector which combines a cascade support vector machine (SVM) and color probability model (CPM). The SVM is used for identifying either the human, vehicle or baggage, while the CPM is applied to detect any possible smoke and fire regions in the monitoring area. The tracking algorithm is also integrated for triggering an alarm of suspicious event. The effectiveness of the proposed framework is evaluated under several video sequences with the comprehensive scenario. The results show that the framework can be one of the solutions for developing intelligent surveillance system.
2.	Learning communities in social networks and their relationship with the MOOCs	2017	This article discusses how MOOC users learn and participate in cooperative environments that promote learning communities within external hypermedia environments such as the social networks. In order to develop this study, researchers analyzed the interaction of users enrolled in a course developed under the iMOOC platform, which is based on concepts like connectivism, collaborative learning, gamification, or adaptivity, among others. Specifically, this study deals with obtaining information about the conversations that take place in external learning communities within social networks like Google+ and Twitter in parallel with the iMOOC platform itself. Through this information is possible to establish the learning types that experience users (non-formal and informal learning usually) and providing an estimation of how users interact with content tagged in social network, and how they use these tagging facilities to continue or

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			create new conversations that allow them to expand or strengthen their learning process developed in the MOOC. To complete the knowledge extracted from these tags and to understand how users interact with this way of metadata declaration, the study is complemented by a questionnaire that collected how users utilize and understand of these tags based on the main usages and the age of the users of the MOOC.
3.	Unsupervised Gesture Segmentation by Motion Detection of a Real-Time Data Stream	2017	Continuous and real-time gesture spotting is a key factor in the development of novel human-machine interaction (HMI) modalities. Gesture recognition can be greatly improved with previous reliable segmentation. This paper introduces a new unsupervised threshold-based hand/arm gesture segmentation method to accurately divide continuous data streams into dynamic and static segments from unsegmented and unbounded input data. This segmentation may reduce the number of wrongly classified gestures in real world conditions. The proposed approach identifies sudden inversions of movement direction which are a cause of oversegmentation (excessive segmentation). This is achieved by the analysis of velocities and accelerations numerically derived from positional data. A genetic algorithm is used to compute feasible thresholds from calibration data. Experimental tests with three different subjects demonstrated an average oversegmentation error of 2.70%

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			in a benchmark for motion segmentation with a feasible sliding window size.
4.	The comparison of soil sensors for integrated creation of IOTbased Wetting front detector (WFD) with an efficient irrigation system to support precision farming	2017	This study investigates a prototyping of integrated system of Internet of Things based Wetting front detector (IOT-WFD) which focuses on how to enhance the IOT based Wetting front detector design for smart irrigation system. The empirical study was conducted with 2 sensors type to detect the wetting fronts which are the Frequency Domain Reflectrometry sensor (FDR) and Resistor-based sensor (RB) integrated and design with low-cost WFD. The results of this study point toward the IOT-WFD as an appropriated technology providing real time wetting front information in soil positively for application in terms of agricultural water management, with precision agriculture and efficient irrigation domain with a related decision knowledge that matches with the technology trend and smart farmer requirements. Evidence of positive results of this prototyping summary has been provided.
5.	Dynamic Outsourced Auditing Services for Cloud Storage Based on Batch-Leaves-Authenticated Merkle Hash Tree	2017	Cloud computing encourages users to outsource their data to cloud storage. Data outsourcing means that users lose physical autonomy on their own data, which makes remote data integrity verification become a critical challenge for potential cloud users. To free user from the burden incurred by frequent integrity verifications, Third Party Auditor (TPA) is introduced to perform verifications on behalf of user for data integrity assurance. However, existing public auditing schemes rely on the assumption that TPA is trusted, thus these schemes cannot be directly extended to support the outsourced auditing model, where TPA might be dishonest and any two of the three involved entities (i.e. user, TPA, and cloud service

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			provider) might be in collusion. In this paper, we propose a dynamic outsourced auditing scheme which cannot only protect against any dishonest entity and collision, but also support verifiable dynamic updates to outsourced data. We present a new approach, based on batch-leaves-authenticated Merkle Hash Tree (MHT), to batch-verify multiple leaf nodes and their own indexes all together, which is more appropriate for the dynamic outsourced auditing system than traditional MHT-based dynamism approaches that can only verify many leaf nodes one by one. Experimental results show that our solution minimizes the costs of initialization for both user and TPA (compared to existing static outsourced auditing scheme), and incurs a lower price of dynamism at user side.
6.	Fast Phrase Search for Encrypted Cloud Storage	2017	Cloud computing has generated much interest in the research community in recent years for its many advantages, but has also raise security and privacy concerns. The storage and access of confidential documents have been identified as one of the central problems in the area. In particular, many researchers investigated solutions to search over encrypted documents stored on remote cloud servers. While many schemes have been proposed to perform conjunctive keyword search, less attention has been noted on more specialized searching techniques. In this paper, we present a phrase search technique based on Bloom filters that is significantly faster than existing solutions, with similar or better storage and communication cost. Our technique uses a series of n-gram filters to support the functionality. The scheme exhibits a trade-off between storage and false positive rate, and is adaptable to defend against inclusion-relation attacks. A design

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			approach based on an application's target false positive rate is also described.
7.	An Online Auction Mechanism for Dynamic Virtual Cluster Provisioning in Geo-Distributed Clouds	2017	It is common for cloud users to require clusters of inter-connected virtual machines (VMs) in a geo-distributed IaaS cloud, to run their services. Compared to isolated VMs, key challenges on dynamic virtual cluster (VC) provisioning (computation + communication resources) lie in two folds: (1) optimal placement of VCs and inter-VM traffic routing involve NP-hard problems, which are non-trivial to solve offline, not to mention if an online efficient algorithm is sought; (2) an efficient pricing mechanism is missing, which charges a market-driven price for each VC as a whole upon request, while maximizing system efficiency or provider revenue over the entire span. This paper proposes efficient online auction mechanisms to address the above challenges. We first design SWMOA, a novel online algorithm for dynamic VC provisioning and pricing, achieving truthfulness, individual rationality, computation efficiency, and $(1 + 2 \log \mu)$-competitiveness in social welfare, where μ is related to the problem size. Next, applying a randomized reduction technique, we convert the social welfare maximizing auction into a revenue maximizing online auction, PRMOA, achieving $O(\log \mu)$-competitiveness in provider revenue, as well as truthfulness, individual rationality and computation efficiency. We investigate auction design in different cases of resource cost functions in the system. We validate the efficacy of the mechanisms through solid theoretical analysis and trace-driven simulations.
8.	Efficient Secure Outsourcing of Large-scale Sparse Linear Systems of	2017	Solving large-scale sparse linear systems of equations (SLSEs) is one of the most common and fundamental problems in big data, but it is very challenging for

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	Equations		resource-limited users. Cloud computing has been proposed as a timely, efficient, and cost-effective way of solving such expensive computing tasks. Nevertheless, one critical concern in cloud computing is data privacy. Specifically, clients' SLSEs usually contain private information that should remain hidden from the cloud for ethical, legal, or security reasons. Many previous works on secure outsourcing of linear systems of equations (LSEs) have high computational complexity, and do not exploit the sparsity in the LSEs. More importantly, they share a common serious problem, i.e., a huge number of memory I/O operations. This problem has been largely neglected in the past, but in fact is of particular importance and may eventually render those outsourcing schemes impractical. In this paper, we develop an efficient and practical secure outsourcing algorithm for solving large-scale SLSEs, which has low computational and memory I/O complexities and can protect clients' privacy well. We implement our algorithm on Amazon Elastic Compute Cloud, and find that the proposed algorithm offers significant time savings for the client (up to 74%) compared to previous algorithms.
9.	A Probabilistic Mechanism Design for Online Auctions	2017	Recently, there is a rapid growth of the online auctions in e-commerce platforms, in which small and/or mediumsized enterprises (SMEs) heavily depend on the advertising systems. In this paper, we design flexible mechanisms to reduce the competition of SMEs without affecting competitive large companies in order to maximize the profit of e-commerce platform and to keep the ecosystem healthy. A probabilistic pricing mechanism design approach is investigated for online auctions. Utilizing this approach, we introduce the notation of simple mechanisms as a tool for designing new

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			mechanisms. Based on a simple and a classical, the proposed mechanism probabilistic mechanisms are designed and their properties are analyzed. Furthermore, we devise two mechanism design algorithms for different application scenarios. Experiments are presented to demonstrate the flexibility and the effectiveness of the proposed probabilistic mechanism design approach.
10.	Privacy-Preserving Multi-keyword Top-k Similarity Search Over Encrypted Data	2017	Cloud computing provides individuals and enterprises massive computing power and scalable storage capacities to support a variety of big data applications in domains like health care and scientific research, therefore more and more data owners are involved to outsource their data on cloud servers for great convenience in data management and mining. However, data sets like health records in electronic documents usually contain sensitive information, which brings about privacy concerns if the documents are released or shared to partially untrusted third-parties in cloud. A practical and widely used technique for data privacy preservation is to encrypt data before outsourcing to the cloud servers, which however reduces the data utility and makes many traditional data analytic operators like keyword-based top-k document retrieval obsolete. In this paper, we investigate the multi-keyword top-k search problem for big data encryption against privacy breaches, and attempt to identify an efficient and secure solution to this problem. Specifically, for the privacy concern of query data, we construct a special tree-based index structure and design a random traversal algorithm, which makes even the same query to produce different visiting paths on the index, and can also maintain the accuracy of queries unchanged under stronger privacy. For improving the query efficiency, we

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			propose a group multi-keyword top-k search scheme based on the idea of partition, where a group of tree-based indexes are constructed for all documents. Finally, we combine these methods together into an efficient and secure approach to address our proposed top-k similarity search. Extensive experimental results on real-life data sets demonstrate that our proposed approach can significantly improve the capability of defending the privacy breaches, the scalability and the time efficiency of query processing over the state-of-the-art methods.
11.	An Energy-efficient Speech Extraction Processor for Robust User Speech Recognition in Mobile Head-mounted Display Systems	2017	An energy-efficient speech extraction (SE) processor is proposed for the robust user speech recognition in the headmounted display (HMD) systems. User speech extraction is essential for robust user speech recognition in noisy environment. For the low-latency speech extraction, FastSE algorithm is proposed to overcome time-consuming cICA-based user speech selection process, which results in <2ms SE latency. Moreover, a reinforced-FastSE (RFSE) scheme is proposed to achieve 97.2% accuracy with only 33KB on-chip memory for the low-power HMD applications. Also, reconfigurable matrix operation accelerator (RMAT) is implemented for energy-efficient acceleration of dominant matrix operation in SE. As a result, the proposed SE processor achieves 1.3x higher speed with 4.24x smaller memory compared to the state-of-the-art work [4], so that speech recognition in noisy environment becomes possible for mobile HMD applications.
12.	Efficient Clue-based Route Search on Road Networks	2017	With the advances in geo-positioning technologies and location-based services, it is nowadays quite common for road networks to have textual contents on the vertices. Previous work on identifying an optimal route that covers a sequence of query keywords has been studied in recent

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			years. However, in many practical scenarios, an optimal route might not always be desirable. For example, a personalized route query is issued by providing some clues that describe the spatial context between PoIs along the route, where the result can be far from the optimal one. Therefore, in this paper, we investigate the problem of clue-based route search (CRS), which allows a user to provide clues on keywords and spatial relationships. First, we propose a greedy algorithm and a dynamic programming algorithm as baselines. To improve efficiency, we develop a branch-and-bound algorithm that prunes unnecessary vertices in query processing. In order to quickly locate candidate, we propose an AB-tree that stores both the distance and keyword information in tree structure. To further reduce the index size, we construct a PB-tree by utilizing the virtue of 2-hop label index to pinpoint the candidate. Extensive experiments are conducted and verify the superiority of our algorithms and index structures.
13.	Rationale in Development Chat Messages: An Exploratory Study	2017	Chat messages of development teams play an increasingly significant role in software development, having replaced emails in some cases. Chat messages contain information about discussed issues, considered alternatives and argumentation leading to the decisions made during software development.These elements, defined as *rationale*, are invaluable during software evolution for documenting and reusing development knowledge. Rationale is also essential for coping with changes and for effective maintenance of the software system. However, exploiting the rationale hidden in the chat messages is challenging due to the high volume of unstructured messages covering a wide range of topics. This work presents the results of an exploratory study examining the frequency of rationale in chat messages, the completeness

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			of the available rationale and the potential of automatic techniques for rationale extraction. For this purpose, we apply content analysis and machine learning techniques on more than 8,700 chat messages from three software development projects. Our results show that chat messages are a rich source of rationale and that machine learning is a promising technique for detecting rationale and identifying different rationale elements
14.	Long Short-Term Memory Networks for Automatic Generation of Conversations	2017	**Human Machine Interface demands the communicative propriety that would be applied in various linguistic tasks. In this research, we develop an intelligent 'chat bot', which generates conversational sentences via recurrent neural network and its coupled memory unit, long short-term memory (LSTM). Word strings in conversations are considered as time series data. Using a single neural network model that performs a simple task of outputting the next word from the preceding word, a conversational sentence can be generated by connecting the words. In the experiment, we performed the linguistic 'Turning Test' to evaluate the proposed system.**
15.	A Real-Time Flood Alert System for Parking Lots.	2017	Floods are a constant threat throughout the year to the United Stated and its territories like Puerto Rico. Although there are various methods of alerts available; such as the Emergency Broadcast System or sirens, none of these can alert a user remotely in an efficient and timely manner. The design goal of this project is to provide a realtime system able to monitor sudden floods in parking lots, addressing the concern of water damage to vehicles; creating a personal opt-in alert that could reach an end user through their mobile phone. In this case, the system defines two types of nodes: Sensing and Sink. Each sensing node uses a hydrostatic pressure sensor to monitor the water levels; it will then communicate with neighboring nodes via XBee radios until the data reaches the sink node. The sink node is then responsible for sending the received data from the sensors to a remote server via mobile communications network (GSM). An up to date database of users and flood levels will then be processed and handled by the server, which will send users an email alert that will reach any mobile phone as a text message (SMS).
16.	Query-Based Learning for	2017	In recent years, many researchers have examined

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	Dynamic Particle Swarm Optimization		dynamic optimization problems (DOPs). The key challenge lies in the fact that the optimal solution of a DOP typically changes over time. This paper focuses on using query-based learning dynamic particle swarm optimization (QBLDPSO) to solve DOPs. QBLDPSO is mainly used for improving multi-population-based PSO; our QBL mechanism includes two learning strategies that integrate the concepts of diversity and memory into PSO. The first learning strategy, QBL quantum parameter adaptation (QBLQPA), is used to apply the concept of diversity to the multi-population based algorithm. This is different from typical diversity-based PSO approaches, which passively maintain the diversity of particles in the solution space. We actively adapt the ratio of quantum particles and neutral particles to achieve diversity without analyzing the distribution of optima in the solution space. The second learning strategy is query-based learning optima prediction (QBLOP). Although QBLOP exploits the concept of memory, we do not need to analyze the history of all particles. We select the k nearest particles to the current best solution and use a minimum encompassing circle as the possible prediction region. Our experimental results are based on the generalized dynamic benchmark generator (GDBG), which is adopted as a benchmark for the DOP. The proposed method outperforms two state-of-the-art multi-population-based PSO methods with the average improvements of 11.37% and 8% using QBLQPA. In particular, for the recurrent problems in GDBG, our method improves performance by 35.06%.
17.	Adaptive Clustering for Dynamic IoT Data Streams	2017	The emergence of the Internet of Things (IoT) has led to the production of huge volumes of real-world streaming data. We need effective techniques to process IoT data

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			streams and to gain insights and actionable information from realworld observations and measurements. Most existing approaches are application or domain dependent. We propose a method which determines how many different clusters can be found in a stream based on the data distribution. After selecting the number of clusters, we use an online clustering mechanism to cluster the incoming data from the streams. Our approach remains adaptive to drifts by adjusting itself as the data changes. We benchmark our approach against state-of-the-art stream clustering algorithms on data streams with data drift. We show how our method can be applied in a use case scenario involving near real-time traffic data. Our results allow to cluster, label and interpret IoT data streams dynamically according to the data distribution. This enables to adaptively process large volumes of dynamic data online based on the current situation. We show how our method adapts itself to the changes. We demonstrate how the number of clusters in a real-world data stream can be determined by analysing the data distributions.
18.	On Stock Trading Via Feedback Control When Underlying Stock Returns Are Discontinuous	2017	Trading rules based on feedback laws have recently attracted significant attention in the control community. One of the main results in this area states that the gain obtained by so-called simultaneously long short strategies has positive expectation for price processes governed by geometric Brownian motion. This paper shows that this result extends to Merton's jump diffusion model. Particularly, we show that the expected total profit is invariant to the jumps and so still positive.
19.	Localization of Wireless Capsule Endoscope: A Systematic Review	2017	Wireless capsule endoscope (WCE) is a notable invention introduced in the biomedical industry. It involves swallowing a small disposable video capsule that takes

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			photographic images as it passes through the gastrointestinal (GI) tract. WCE allows physicians to visualize and diagnose disorders covering the full length of the GI tract. Although WCE can provide useful images of the internal GI tract, the identification of the exact location of the detected disease remains unclear. Location information is very crucial for the subsequent treatment of the detected disease either through surgery or through local drug delivery. The huge potential of WCE in future endoscopic practice relies on the successful tracking of the wireless capsule. This paper presents a comprehensive systematic review on the recent developments in WCE localization techniques that have been reported in credible sources, namely, IEEE Xplore, PubMed, Scopus, Science Direct, Springer Link, and Google Scholar. Detailed analysis and systematic comparison are provided to highlight the achievement and future direction of WCE localization. This work can be a valuable source of reference and guidance for future research in this field.
20.	Comparison of Brain Tumor MRI Classification Methods Using Probabilis Tic Features	2017	Brain tumor has remained one of the key causes of death in people of all ages. One way to increase survival rate amongst patients is to correctly diagnose cancer in its early stages. There are several classifiers which can classify cancer images with high accuracy. The goal of this paper was to present a brief survey of the main machine learning methods used in literature to classify brain tumor in MRI images. For an unbiased comparison between the different methods used in literature, gray level co-occurrence matrix probabilistic features(GLCM) were used as input features for training and testing the models. Two methodologies were used to establish the significance of feature reduction in classification

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			accuracy. In the first methodology, the extracted feature set from GLCM was applied to the classifiers for comparison of performance. In the second methodology, principal component analysis (PCA) was used to reduce the extracted features and afterwards the uncorrelated reduced vector was applied to the same classifiers. As a result, it was observed that the reduced uncorrelated features improved the accuracy of all classifiers by 10 to 27%.