How to write a research/technical report/paper – my thoughts

PRADEEP K ATREY

Disclaimer

In this presentation, I have put forward my thoughts on how to write a technical/research report/paper (especially in Application-oriented Computer Science field)

Everybody have their writing style, and my thoughts may not be considered as any strict rules or guidelines

Proposition

The guidelines provided in this presentation can be used to write the capstone project report in this course.

Aaahhhhh....

Writing is easy. All you do is stare at a blank sheet of paper until drops of blood form on your forehead. --- Gene Fowler

What is a technical/research report/paper?

Technical/research report/paper means hours spent in the library/online, more hours toiling with notes and drafts, and the headache of dealing with the mysterious rules of documentation.

And now you have to describe your two years of work on two pages.

UNIVERSITY AT ALBANY
State University of New York

What is a technical/research report/paper?

A formal written argument in which all evidence is systematically documented.

And now you have to describe your two years of work on two pages.

UNIVERSITY AT ALBANY
State University of New York

What is a technical/research report/paper?

A <u>formal</u> written <u>argument</u> in which all <u>evidence</u> is <u>systematically</u> <u>documented</u>.

And now you have to describe your two years of work on two pages.

UNIVERSITY AT ALBANY
State University of New York

What is a technical/research report/paper?

There are many other definitions:

- ◦ (also called *scholarly paper*), is a document which contains original research results or reviews existing results

- ◦ is a document that describes the research contribution made in the field

Types of research

Incremental type

◦ The problem exists already, there are multiple solutions that attempt to solve this problem. Yet another solution is proposed that is better than existing solutions in some sense.

Novel idea based

◦ Come up with a new problem that nobody has ever thought. And, any solution you propose is a novel solution. You become the pioneer to work on this problem.

Types of research

Incremental type of research
- The problem is well known
- "An improved solution" is provided
- E.g. our new face recognition algorithm performs better than the existing ones.

Novel idea based research
- Problem itself is new – nobody has ever thought of this problem – we are the first to work on the problem
- "a solution" is proposed
- Other researchers will follow us and do incremental research

Which is harder?

Structure of a technical/research report/paper

Title, authors' names and affiliation

Abstract   (≈ 150 words)

Introduction   (≈ 15%)

Related work   (≈ 10%)

Proposed work   (≈ 30%)

Experiments, results and analysis   (≈ 30%)

Conclusions and future work   (≈ 150 words)

Acknowledgements (1-2 lines, optional)

References   (≈ 5%)

Writing sequence ?

Title, authors' names and affiliation

Abstract

Introduction

Related work

Proposed work

Experiments, results and analysis

Conclusions and future work

Acknowledgements

References

This could be one of the many ways

Writing sequence ?

Choice 1

Introduction

Proposed work

Experiments, results and analysis

Related work

Conclusions and future work

Abstract

Title, authors' names and affiliation

Acknowledgements

References: all along

Writing sequence ?

Choice 2

Proposed work

Experiments, results and analysis

Introduction

Related work

Conclusions and future work

Abstract

Title, authors' names and affiliation

Acknowledgements

References: all along

Writing sequence ?

Title, authors' names and affiliation

Abstract

Introduction

Related work

Proposed work

Experiments, results and analysis

Conclusions and future work

Acknowledgements

References

This could be one of the many ways

Writing Introduction

Try to answer the following questions:

- What **problem** are we trying to solve?

- Why is this an **important** problem?

- How is this a **challenging** problem?

  (could be in 1-2 paragraphs)

Can use phrases like:

- "This problem is important because…" or "hence, there is a need for…"

- "The main challenge here is to…" or "it is challenging to…" or "… is challenging due to…"

Writing Introduction

Try to answer the following questions:

What **problem** are we trying to solve?   Why is this an **important** problem?   How is this a **challenging** problem?

1 Introduction

Sensor traces have found vital applications in a variety of diverse scenarios, such as logistics, advanced driver assistance systems, medical care, public security, defense, aerospace, robotics, industrial production, precision agriculture [18], traffic monitoring, and policy making [2, 7]. However, the use of sensory data in these scenarios has often raised privacy concerns. The privacy concerns get more serious with video sensors. This is because people generally don't like their activities being recorded and watched by others. The main challenge here is to understand and analyze various inference channels that can result in a breach of privacy. While such inference channels are well studied in the context of traditional data sharing applications (e.g., a hospital releasing patient records and GPS based location aware services), it is challenging to understand inference channels embedded in semantically rich video.

Source: M. Saini, P. K. Atrey, S. Mehrotra, and M S. Kankanhalli. W3-Privacy: Understanding what, when, and where inference channels in multi-camera surveillance video. Springer Int. J. Multimedia Tools and Applications, 68(1):135-158 (2014).

Writing Introduction

Try to answer the following questions:

- What are existing solutions?

- Why they are not sufficient? – what aspect they solve, and what not? What are their weaknesses?

  (could be in 1-2 paragraphs)

- Try to keep this part short and to-the-point

Can use phrases like:

- See the next slide.

Writing Introduction

Try to answer the following questions:

◦ What are existing solutions?

◦ Why they are not sufficient? – what aspect they solve, and what not? What are their weaknesses?

  (could be in 1-2 paragraphs)

◦ Try to keep this part short and to-the-point

Can use phrases like:

◦ "In the past decade, there have been many efforts to…"

◦ "To resolve the above mentioned problem, researchers have proposed…"

◦ "A naïve solution to address this problem could be…. However, this solution has the following limitation(s):"

◦ "While existing solutions have the advantage of …, but they suffer from the following weaknesses:…"

◦ "This motivates us to devise a method for…"

Writing Introduction

Try to answer the following questions:

What are existing solutions?

In the past works on privacy preserving applications of video, it has been assumed that the identity leakage itself is equivalent to the privacy loss [5, 33]. We recognize that privacy loss occurs when an adversary is able to map an identity to the sensitive information present in the video, for example their habits, physique, companions, etc. The adversary can either be a human being with prior knowledge or an automated system with pattern information obtained through data mining and similar learning techniques [11]. There has been a great deal of work in privacy modeling in the field of video surveillance. In these works, privacy is modeled as a binary variable

Writing Introduction

Try to answer the following questions:

What are existing solutions? Why they are not sufficient? – what aspect they solve, and what not? What are their weaknesses?

In the past, researchers have widely used the additive and multiplicative homomorphic properties of SSS to process encrypted images [Islam et al. 2009] for various analysis tasks. For instance, Sayed and Sen-ching [2012] presented denoising of images using secret sharing adapted for wavelet domain. Upmanyu et al. [2009] proposed a secret sharing method for change detection in surveillance videos. However, in both works the proposals are only for carrying out integer addition and subtraction operations. Also, Mohanty et al. [2012, 2013] provided a method for preprocessing medical images such that real number analysis for addition/scalar multiplication (with terminating decimals only) is possible in ED. However, their method presents huge data expansion and the inability to perform division operations (particularly when the result of a division operation is nonterminating) in ED.

Writing Introduction

Try to answer the following questions:

◦ What is our core idea and solution?

◦ How is this idea/solution "different" / "novel" and "better" compared to existing solutions?

(could be in 1-2 paragraphs)

Can use phrases like:

◦ "To overcome the abovementioned problems, we propose …"

◦ "The core idea behind our method is…"

◦ "The novelty of the proposed method lies in …"

◦ "The proposed method is different from [] and [] in the following two aspects: 1) …, and 2) …."

Writing Introduction

Try to answer the following questions:

What is our core idea and solution? How is this idea/solution "different" / "novel" and "better"?

In this article, we propose a novel and efficient method for performing arithmetic division operations for nonterminating quotients (involved in quality enhancement) over encrypted images.[1] This allows an authorized user to reconstruct the improved quality images from CDCs. Our core idea is to use a (T, N)-SSS technique that divides the original (degraded) images (called 'secret') into N obfuscated images (called shares) (Figure 1). The N shares are processed at N different CDCs for quality enhancement. In order to view the enhanced quality image, an authorized user first obtains the processed share images from any $(T \leq N)$ CDCs and then reconstructs the enhanced version of the original image. In our method, the user is not able to reconstruct the secret even if any $T - 1$ shares are available. As we intend to perform image enhancement tasks in ED over cloud, the real challenge lies in directly performing arithmetic operations (mainly division) with nonterminating decimal quotients involved in such tasks on the obfuscated share images at the CDCs. The proposed method addresses the given challenge and accomplishes the following goals.

UNIVERSITY AT ALBANY
State University of New York

Writing Introduction

Try to answer the following questions:

What is our core idea and solution? How is this idea/solution "different" / "novel" and "better" compared to existing solutions?

To the best of our knowledge, this is the first attempt to perform the quality enhancement operations directly in the spatial domain on the encrypted images over cloud. The proposed method is an improvement over existing methods [Mohanty et al. 2012, 2013; Upmanyu et al. 2009] for carrying out real number division operations (involving terminating decimals) in ED. Workable applications of image quality enhancement using spatial filtering operations, namely low pass filtering (LPF), antialiasing filtering, unsharp masking/high boost filtering/edge and contrast enhancement along with dehazing, on digital images in ED over cloud are presented to demonstrate the utility of the proposed method. The techniques used for carrying out these image enhancement operations in ED are in compliance with the homomorphic properties of the chosen cryptosystem, SSS. Furthermore, a detailed table is presented in the online appendix, comparing the possibility of performing the available state-of-the-art methods for various image enhancement operations taken into consideration.

UNIVERSITY AT ALBANY
State University of New York

Writing Introduction

Try to answer the following questions:

- Briefly summarize the main contributions of our work. (could be in 1 paragraph or a few bullets)

Can use phrases like:

- "Our main/key contributions in this paper are: 1) …, and 2) …"
- "To the best of our knowledge, this is the first paper which presents…"
- "To the best of our knowledge, we are the first to propose…"

Writing Introduction

Try to answer the following questions:

Briefly summarize the main contributions of our work.

The main contribution of this article is a novel privacy preserving long-distance surveillance system called "Watch Me from Distance" (WMD) that has the following distinct characteristics: (1) It includes a model to compute the contextual overlap, which helps in decoupling the prior knowledge of the operator from the video; (2) it adopts a time-based random camera assignment strategy to decouple the contextual knowledge of the operators; and (3) it uses a trust model to determine the trustworthiness of the operators.

Source: P. K. Atrey, B. Trehan and M. K. Saini. Watch Me from Distance (WMD): A privacy-preserving long-distance video surveillance system. ACM Transactions on Multimedia Computing Communications and Applications, Vol. 15, No. 2, Article No. 37 (2019).

The main contribution of the paper is twofold:

1. Design and development of an algorithm to access the big five personality traits has been performed using both Facebook and LinkedIn features.
2. Furthermore, identifying the crucial features that contributes to big five personality trait identification from multiple OSNs.

Source: S. Bhardwaj, P. K. Atrey, M. K. Saini and A. El Saddik. Personality assessment using multiple online social networks. Springer Int. J. Multimedia Tools and Applications, 75(21):13237-13269 (2016).

Writing Introduction

End the Introduction section with a paragraph describing the organization of the paper/report.

Can use phrases like:

◦ "The rest of this paper/report is organized as follows: Section 2 describes …. In Section 3, we present our method…"

The rest of this article is organized as follows. In Section 2, we discuss the related works and what sets ours apart. Section 3 presents an overview of the proposed method. In Section 4 we describe the use of the proposed method with appropriate mathematical transformations for performing noise removal and antialiasing in ED. The application of the proposed method is extended in Section 5 to demonstrate the plausibility of performing unsharp masking for edge enhancement in ED along with histogram equalization as a postprocessing step for contrast enhancement and dehazing. Thorough security and performance analyses are also provided in Sections 4 and 5. Section 6 presents further remarks, and Section 7 concludes our work.

Source: A. Lathey and P. K. Atrey. Image enhancement in encrypted domain over cloud. ACM Transactions on Multimedia Computing, Communications and Applications, Vol. 11, No. 3, Article 38 (2015).

Writing sequence ?

Title, authors' names and affiliation

Abstract

Introduction

Related work

Proposed work

Experiments, results and analysis

Conclusions and future work

Acknowledgements

References

This could be one of the many ways

Writing Related Work

Discuss related work and explain the novelty and distinctiveness of the proposed work against existing work (explicitly in a table illustrating different aspects).

Table 1 A summary of related work

Work	Implicit channels	Multi-camera	Sensitive information	Modeling binary/continuous	Consideration of events
Boyl et al. [4]	No	No	No	Binary	No
Senior et al. [25]	No	No	No	Binary	No
Moncrieff et al. [19]	No	No	No	Fixed levels	No
Fidaleo et al. [12]	No	No	No	Binary	No
Wickramasuriya et al. [33]	No	No	No	Fixed levels	No
Koshimizu et al. [15]	No	No	No	Binary	No
Spindler et al. [27]	No	No	No	Fixed levels	No
Thuraisingham et al. [29]	No	No	No	Binary	No
Carrillo et al. [5]	No	No	No	Binary	No
Paruchuri et al. [20]	No	No	No	Binary	No
Qureshi et al. [23]	No	No	No	Binary	No
Saini et al. [24]	Yes	No	No	Continuous	Single
Proposed model	Yes	Yes	Yes	Continuous	Multiple

UNIVERSITY AT ALBANY
State University of New York

Writing Related Work

Discuss related work and explain the novelty and distinctiveness of the proposed work against existing work (explicitly in a table illustrating different aspects)

Table I. Comparing the State-of-the-Art Methods for Operations Performed in ED with the Proposed Work

Works	Area(s) of Application	Type of multimedia worked upon	Add./ Sub.	Mult./Div. (Integer & Real-Terminating)	Mult./Div. (Real Non-Terminating)
[Islam et al. 2009]	Adding & multiplying two encrypted images	Color/grayscale images	Yes	Integer	No
[Upmanyu et al. 2009]	Background subtraction	Surveillance videos/frames	Yes	No	No
[Hsu et al. 2009]	SIFT based feature extraction	Color/grayscale images	Yes	Integer	No
[Sadeghi et al. 2010]	Face recognition	Color/grayscale images	Yes	Integer	No
[Yogachandran et al. 2012]	Facial expression recognition	Color/grayscale images	Yes	Integer	No
[Mohanty et al. 2012], [Mohanty et al. 2013]	Rendering of medical images	3D medical images	Yes: Real Terminating	Yes: Real Terminating	No
[Chu et al. 2013]	Object tracking	Video frames	Yes	Integer	No
PROPOSED WORK	Image enhacement	Color/grayscale images	YES	YES	YES

Writing Related Work

The past works should not discussed one-by-one, rather they should be linked with each other.

- E.g. "While Atrey et al. []'s method is advantageous from the perspective of …, it suffers from … problem, which was later addressed by Chen et al. []"

Memory forensics is an evolving and promising area of research. Xu and Wang [14] presented a technique for the retrieval of system logged-in passwords from the physical memory of Windows XP and Windows 7. In addition, Graziano et al. [15] demonstrated a set of approaches for analyzing hypervisors and virtual machines by utilizing memory forensics. Subsequently, Guangqi et al. [16] proposed an algorithm for memory forensics on virtual machines comprising of process search, memory dump and memory analysis. Further, Joseph et al. [11] proposed methodology that examines Windows system's physical memory dump for extracting information about Internet activity and retrieving usernames and passwords of Web applications like mail accounts. Interestingly, Chen and Li [17] presented a technique for recovering picture data from the memory dump. Subsequently, Saltaformaggio et al. [18] presented a

UNIVERSITY AT ALBANY
State University of New York

Writing Related Work

Clearly differentiate the novelty of our work with respect to the past work (including our own work)

- In case, we are extending our conference paper to a journal paper, we should have at least 35-40% new content (in term of proposed method, results and analysis).

> To the best of our knowledge, the idea of using a feedback camera to observe human monitoring behavior for determining the importance of camera views in a CCTV surveillance system was introduced by Atrey et al. [4]. This work is an extension of [4] in the following ways. In [4], the authors have used change detection

Source: P. K. Atrey, A. El Saddik, and M. S. Kankanhalli. Effective multimedia surveillance using a human-centric approach. Special Issue on "Hot Topics in Multimedia Research" at Springer Int. J. of Multimedia Tools and Applications, 51(2):697-721 (2011).

> In this article, we propose a novel and efficient method for performing arithmetic division operations for nonterminating quotients (involved in quality enhancement) over encrypted images.[1] This allows an authorized user to reconstruct the improved quality images from CDCs. Our core idea is to use a $(T. N)$-SSS technique that divides
>
> ___
> [1]The earlier version of this work with preliminary results was published in Lathey et al. [2013].

Source: A. Lathey and P. K. Atrey. Image enhancement in encrypted domain over cloud. ACM Transactions on Multimedia Computing, Communications and Applications, Vol. 11, No. 3, Article 38 (2015).

- Also we should not copy even a single sentence from our own past work, rather we should rewrite.

Writing sequence ?

Title, authors' names and affiliation

Abstract

Introduction

Related work

Proposed work (System/Application in your case)

Experiments, results and analysis

Conclusions and future work

Acknowledgements

References

This could be one of the many ways

Writing Proposed Work

Differentiate between method/system/application/framework/algorithm

- Describe the proposed work in detail

- Use system architecture, data flow and use case diagrams

- Use scientific/mathematical tools and notations

- Use figures, block diagrams, flowcharts, algorithms

- Differentiate between "preliminaries" and "our novel contribution"

- Present arguments for the choices we have made

Writing Proposed Work

Differentiate between method/system/framework/algorithm

- List out any assumptions made

images). Our framework is based on the assumption that (i) the server and client are the trusted entities, (ii) the datacenters are connected among themselves and with the client via a high speed network, (iii) the inter-group communication among the datacenters is regulated, and (iv) an adversary cannot access k or more datacenters.

Source: K. Kansal, M. Mohanty and P. K. Atrey. Scaling and cropping of wavelet-based compressed images in hidden domain. The 21st International Conference on Multimedia Modeling (MMM'15), Volume 8935, pp 430-441, Sydney, Australia, January 2015.

UNIVERSITY AT ALBANY
State University of New York

Writing Experiments, Results and Analysis

State the objectives of experiments – what and why do we want to experiment

5.1 Determining Appropriate Video Switching Time

5.1.1 *User Study-based Experiment.* ==The main objective of this experiment is to find== the appropriate video switching time for the proposed anonymous surveillance system. A total of 15 users

5.2 System Testing for Surveillance Accuracy and Timeliness

==The purpose of this experiment is to test== the prototype system for surveillance accuracy and real-timeliness. ==Participants were asked to log-in to the system, perform surveillance ta==sks, generate alerts, and extend the view if necessary. Surveillance accuracy is determined based on the ratio

Source: P. K. Atrey, B. Trehan and M. K. Saini. Watch Me from Distance (WMD): A privacy-preserving long-distance video surveillance system. ACM Transactions on Multimedia Computing Communications and Applications, Vol. 15, No. 2, Article No. 37 (2019).

system. ==The experiments are designed with the following two objectives:== 1) demonstrating that the proposed method for dynamically determining the confidence in media streams works well and 2) the overall accuracy of the event detection task in two cases, when the dynamically computed confidence information is used and when the pre-computed confidence information is used, and are comparable.

Source: P. K. Atrey and A. El Saddik. Confidence evolution in multimedia systems. IEEE Transactions on Multimedia, 10(7):1288-1298 (2008)

Writing Experiments, Results and Analysis

Describe the experimental setup (machine/system and devices used, lab or real world environment, etc.)

The effectiveness of the proposed framework is evaluated through a user study based experiment. In this experiment, the users were asked to play the role of an adversary and they are provided with three video clips. For each video clip, the users were asked to answer a set of questions that were designed to test the user's ability to learn *who, when* and *where* information.

The users were divided into two groups: first group consisting of ten people and the second group had seven users. While the first group belonged to National University of Singapore (NUS), the second group had users from all over the world. The video clips were recorded in NUS; therefore, in the rest of the paper we will refer to the first group of students as local group (ten people) and the second group of users as remote group (seven people). Both groups were allowed to watch the three video clips and answer questions. The users were kept unaware of the location where the video is recorded and the time of recording.

Source: M. Saini, P. K. Atrey, S. Mehrota and M. S. Kankanhalli. Anonymous surveillance. IEEE ICME Workshop on Advances in Automated Multimedia Surveillance of Public Safety (AAMS-PS'2011), July 2011, Barcelona, Spain.

Writing Experiments, Results and Analysis

Describe the data set (size of data, how collected, how many users – if data is collected through users, who were the users (no identity disclosure without written consent)

4.1. *Data Set.* Five video clips have been considered in our experiments. The description of the video clips is as follows:

(i) video 1: this video was recorded in a research lab. It shows name of the lab and two people doing various activities. The original video was shot for over one hour consisting of 200 key frames;

Source: M. Saini, P. K. Atrey, S. Mehrotra, and M S. Kankanhalli. Adaptive transformation for robust privacy protection in video surveillance. Hindawi Int. J. of Advances in Multimedia, Volume 2012, Article ID 639649 (2012).

4.1. Dataset

There are a few datasets [17, 18] available which are related to fake news, but to the best of our knowledge, there is no dataset available that serves the need to test the proposed framework. Therefore, we decided to collect our own dataset. In this section, we explain the process of data collection and explain the dataset.

Source: S. Parikh, S. Khedia and P. K. Atrey. A Framework to detect fake tweet images on social media. The Fifth IEEE International Conference on Multimedia Big Data (BigMM'2019), Singapore, September 2019.

UNIVERSITY AT ALBANY
State University of New York

Writing Experiments, Results and Analysis

List out the experimental plan and number of experiments we did.

4 Experimental results

To demonstrate the utility of the proposed model, we conduct three experiments. In the first experiment we highlight the difference between identity leakage and privacy loss. In the second, the effect of multiple events of the identity leakage is shown. Finally in the third experiment, we show how the proposed framework is used to calculate privacy loss in the case of a multi-camera surveillance video.

Source: M. Saini, P. K. Atrey, S. Mehrotra, and M S. Kankanhalli. W3-Privacy: Understanding what, when, and where inference channels in multi-camera surveillance video. Springer Int. J. Multimedia Tools and Applications, 68(1):135-158 (2014).

The experiments are divided into three parts. In the first experiment we show the effect of different static camera assignment schemes on the number of targets dropped and the

Source: M. Saini, X. Wang, P. K. Atrey and M. S. Kankanhalli. Dynamic workload assignment in video surveillance systems. IEEE International Conference on Multimedia and Expo (ICME'2011), July 2011, Barcelona, Spain

Writing Experiments, Results and Analysis

Report the results using figures, graphs, and tables and present their analysis

Table 1: Average time taken for each task

Task	1	2	3	4	5	6	7	8
Time (sec)	13	6	15	22	4	4	3	5	4

Table 2: Scores (out of 4) of 'Ease of use' for each task

Task	1	2	3	4	5	6	7	8
Score	3.1	3.3	3.0	3.1	3.8	3.8	3.2	3.6

Source: M. Moski and P. K. Atrey. An intuitive touch screen interface for car remote control. The 1st ACM Multimedia Workshop on Emerging Multimedia Applications and Services for Smart Cities (EMASC14), Orlando, FL, USA, November 2014.
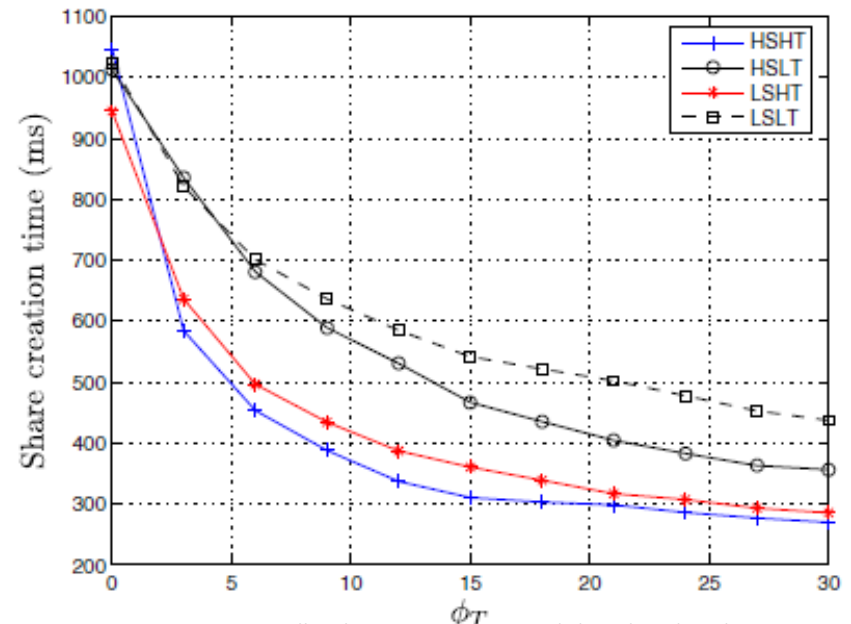
Source: P. K. Atrey, S. Alharthi, M. A. Hossain, A. AlGhamdi and A. El Saddik. Collective control over sensitive video data using secret sharing. Springer Int. J. Multimedia Tools and Applications, 73(3):1459-1486 (2014).

UNIVERSITY AT ALBANY
State University of New York

Writing Experiments, Results and Analysis

Justify how our results are better than the existing work

Table 3

Comparative result analysis for tamper detection and recovery.

Attack	[24]	[22]	Proposed
Content removal	36.20	26.98	37.94
Content exchange	37.31	28.29	38.05
Image addition	37.21	28.92	37.53
Text addition	34.23	24.24	35.78

Quantitative performance of our scheme and other schemes has been tabulated in Table 3. The PSNR values of our scheme are higher than those of other schemes for different types of attack which demonstrate the superiority of the proposed scheme.

Writing Experiments, Results and Analysis

Argue whether the claims are substantiated or not.

Discuss expected and most importantly "unexpected" findings

Identify the 'wow' factor from the experiments (if possible)

Establish the superiority of our method in at least some aspect

Writing Experiments, Results and Analysis

Don't overstate the results
◦ Avoid statements like "Our method provides excellent performance" (better to be talk in numbers rather than using adjective terms)

Present what is obtained

Sometimes, investigating that a given method does not work could also be considered as a research contribution

Discuss the **limitations** of our method (this could be in a new section)
◦ Our method may not work in all conditions – identify and discuss the conditions or situations when it may fail

> There exist some limitations in the current work. Like many similar efforts on cyberbullying detection, it focuses on a particular social network (Twitter) and does not employ a representative user sample [5], [11]. The balanced dataset

V. K. Singh, Q. Huang and P. K. Atrey. Cyberbullying detection using probabilistic socio-textual information fusion. International Symposium on Foundations of Open Source Intelligence and Security Informatics (FOSINT-SI 2016) in conjunction with (ASONAM 2016), San Francisco, CA, USA, August 2016.

Writing Conclusions and Future Work

State the conclusions (not a summary)
◦ Be precise and to-the-point

State the future work (this is not the end of world)
◦ Discuss the aspects that we could not cover in this work and that can be explored in future

Writing Abstract

It is very important part of the paper, which readers (or reviewers) usually read first.

It should be clear, precise and complete.

We present the whole paper in 100-150 words.

Abstract. The use of social networks has grown exponentially in recent years, and these social networks continue to have an ever-increasing impact on human lives. There are many concerns regarding the privacy of users in these environments, such as how trustworthy the social network operators are, in addition to the external adversaries. In this paper we propose a new architecture for online social networking, based on distributed cloud-based datacenters and using secret sharing as the method of encrypting user profile data, for enhanced privacy and availability. This proposed architecture is theoretically analyzed for its security and performance along with some experimental analysis. We show that the proposed architecture is highly secure at an acceptable level of time complexity overhead in comparison to existing online social networks, as well as the models proposed in previous studies targeting the same research problem.

Source: K. Senevirathna and P. K. Atrey. A secure and privacy-aware cloud-based architecture for online social networks. The 7th Multi-Disciplinary International Workshop on Artificial Intelligence (MIWAI'2013), December 2013, Krabi, Thailand.

UNIVERSITY AT ALBANY
State University of New York

Writing Acknowledgments

In this section, we acknowledge the technical as well as logistics help of every one who deserves

Some examples:

- ◦ Occasional scientific discussion with someone about our work which might have helped

- ◦ Obtaining data set from some organization for our research

- ◦ Financial/scholarship support from some organization

Writing Title, Authors' Names and Affiliations

Title

- Should not be too long to read

- Should not be too short to be understood

- Try to make it catchy
  - Anonymous Surveillance
  - **Scale me, crop me, know me not: Supporting scaling and cropping in secret image sharing**

Writing Title, Authors' Names and Affiliations

Authors:

- All who have contributed in our research should be included in the authors list – level of contribution is a matter of debate – use our conscious and try to be fair

- Sequence of authors are usually determined by the level of their contributions – first author makes most contribution

- When we submit the paper for review, we should not forget to check the review procedure (blind or non-blind).

Writing References

Reference styles can vary from conference to conference and journal to journal, however, consistency should be maintained in:

◦ Names of authors

◦ Proceedings' titles

◦ Etc.

Rules of Thumb

Write clearly and precisely

Don't try to dilute our novel contributions

If we cannot write clearly about our contributions, it means that we don't know what we did

English in the paper should be grammatically correct…

Appropriate choice of words is important

Language issues (general guidelines)

Avoid long sentences – break into short sentences

Avoid long paragraphs

Avoid writing in passive voice

Write in simple present tense (avoid writing in present continuous tense) - We present or ~~We are presenting~~

While discussing the past work, we use simple past tense

Generally we write "we" over "I"

Sentences should be linked to each other and make a flow

Paragraphs should be linked to each other and make a flow

Make right use of pre-positions: the, a, an, etc.

We are not language experts, but we try to learn from mistakes.

Thank you!

Choosing Publication Venues

Conferences
- Should be relevant
- Should be of high quality (if we want to be recognized as good researcher)
- Attend those where we can meet people from our target industries

Journals
- Target top journals related to the field
- E.g. IEEE, ACM transactions, Springer, Elsevier, etc.

Publication Timeline - Conferences

We get the outcome in usually 2-3 months (for some conferences and workshops, it could be sooner)

Outcome: Accept or Reject

We don't get a chance of rebuttal (some top conferences have begun this stage these days)

Top conferences normally have 15-20% acceptance rate (sometimes, good quality papers are also rejected)

Not-so-reputed conferences may have up to 50% acceptance rate (sometimes, weak papers are also accepted)

Publication Timeline - Journals

Day 0: We submit the paper

After 3 months: We get the first review, which could be:
  a. Accept (very rare)
  b. Resubmit after minor revisions (rare)
  c. Resubmit after major revisions (mostly, if the paper is toward acceptance, so we can be happy with this outcome)
  d. Reject (mostly for weak papers, rarely for good papers)

Next 1-2 months: In case of b & c, we revise the paper, prepare a response document and resubmit for second review

After 2-3 months: we get the second review, which could be:
  e. Accept
  f. Resubmit after minor revisions (mostly)
  g. Reject

Next 1 month: In case of f, we revise and resubmit

After 2 weeks-1 month: we get the final outcome, which could be: Accept (mostly) or Reject (rarely)

Handling Rejections

If our paper is rejected, we should not be too disappointed.

The reason of rejection could be:

- Our research contribution is not worth publishing
- Or we did not write clearly (The onus of clear writing is on authors, not on reviewers)
- Sometimes we could be unlucky to have found a harsh reviewer

Solution: Improve the paper and resubmit and keep doing that until it is published or we confirm that our work is not of good quality

Rule: If there exists a paper, there exists a conference or a journal that will publish it

Further discussion