Collaborative Concealment of Spatio-Temporal Mobile Sequential Patterns

S. Sri Ramya[1] and P. Subba Rao[2]

[1] Aditya Engineering College

Received: 8 December 2011 Accepted: 5 January 2012 Published: 15 January 2012

Abstract

Recent advances in communication and information technology, such as the increasing accuracy of GPS technology and the portability of wireless communication devices coat the way for Location Based Services (LBS). Based on the data collected from the location aware mobile devices data mining techniques are used to meet the quality requirements of expected services. The efficient management of moving object databases has gained much interest in recent years due to the development of mobile communication and positioning technologies. A typical way of representing moving objects is to use the trajectories. Much work has focused on the topics of indexing, query processing and data mining of moving object trajectories, but little attention has been paid to the preservation of privacy in this setting. The major contribution of this paper is to provide privacy to the users of Location Based Services along with capturing interesting user?s behavior pattern by broaden the ideas presented in the datamining-literature.

Index terms—

1 Introduction

n the ubiquitous mobile computing environments, the mobile users may request diverse kinds of services and applications by mobile devices from arbitrary locations at any time via on networks. Obviously, the behavior pattern, in which the location and the service are inherently coexistent with temporal associated, of mobile users becomes more complex than that of the traditional mobile agent systems. To assist the user get interested information on time is one of the promising applications, especially in mobile agent systems.

In recent years, the temporal data mining method has been studied for extracting useful knowledge from temporal data sets. The research of temporal data mining has been proposed the Generalized Sequential Pattern, named GSP. The GSP algorithm extended the Apriori-like level-wise mining method with time constraint to find frequent patterns in sequential databases. And the SPIRIT method proposed frequent sequence patterns by regular expression constraint. More recently, the research of related temporal association rule has been studied for cyclic association. The problem of finding frequent patterns in mobile agent systems has been extended to that of Author ? : 2 nd year M-tech, Aditya Engineering College, Surampalem, Peddapuram(mandal) , East Godavari(dt), A.P, India. E-mail : sriramya71191@gmail.com Author ? : M.Tech Assistant Professor, Aditya Engineering College, Surampalem, Peddapuram(mandal) , East Godavari(dt), A.P, India. E-mail : subbu_polamuri@yahoo.com finding frequent user behavior patterns in mobile web systems.

II. The work-flow of the system is divided two phases. This systems form that the logs for users' movement and users' service requests associated with temporal association can be stored in different databases. The first phase of system architecture, Data integration phase, is to collect and integrate users' logs into one dataset for efficient access and the temporary user information like current location to manage requests from subscribers. For this phase, the attributes related to user's temporary service requests will be extracted from the dispersed log files and joined to from an integrated log file by using the user's service identifier as the key. Mining phase is deployed novel data mining method to discover the frequently temporal mobile access patterns from the integrated log dataset. The best results are returned associated with temporally user's access pattern to the mobile agent. The mobile agent system is supported by both movement and service requests pattern of users with proper time information, which makes the system powerful and accurate.

2 Proposed approach

3 III.

4 Problem statement

A temporal database typically stores relational data with include time-related attributes. These attributes include (a) timestamp(s) of access patterns which one of the attributes.

Definition 1: A trajectory of a moving object T = {(x1,y1,t1), (x2,y2,t2),?,(xn,yn,tn)}, such that ti < ti+1 for all i ={1, ? , n}; each (xi, yi, ti) is the object's location at time ti.

Even though objects follow the same routes, it is highly unlikely that trajectories have the identical sequences due to the noise and the deviation of the objects' movements. To discretise trajectory data, each (xi, yi) at timestamp ti is transformed to the id of the spatial region describing the object's location. Since the interval between consecutive timestamps is fixed, a spatio-temporal sequence S is represented as a set of location symbols li, which contain positions (xi, yi). Then, a trajectory is converted to a generalized sequence of location symbols.

Trajectories can be partitioned into disjointed subsequences by detecting meaningful spatiotemporal changes in objects' movement. A segment between two change points forms a spatiotemporal region, which includes both a spatial and a temporal approximation of movements within the segment.

Locations are not repeated exactly in every instance of a movement pattern. The database scan is to find all frequent mobile access patterns. Then, the frequent mobile access pattern is inserted into the header table in decreasing order of their sequence access pattern. Privacy preservation in spatio-temporal data sets is challenging because spatio temporal data sets are so rich in correlations, allowing many "privacy attack" strategies that are difficult to counteract and sometimes even to anticipate. The proposed method is believed to protect against a few obvious threats, namely, 1. Detection of frequent private/personal/individual locations due to self-correlations in historical spatio-temporal (trajectory) data sets, 2. Detection of the current position due to physical mobility constraints on objects (maximum speed, road network, spatio-temporal restrictions in general.

Intuitively, the whole trajectory of a moving object can be enclosed into a single rectangle so that the anonymity of the trajectory is preserved. However, as the trajectories are often very long, the rectangles can be very big so that it becomes impossible for the data mining algorithms to return any useful results. The proposed method provides an anonymized format of the trajectory by cutting a long trajectory into pieces and enclosing each piece in an anonymization rectangle. This format can give opportunities for doing data mining without sacrificing location privacy.

Movements of mobile users are often modeled as trajectories in 2D space. Data mining on the trajectory data has many applications, not only in LBSes, but also in telematics and Intelligent Transportation System. An existing solution for protecting the location and trajectory data in LBSes is to anonymize the users' location data by decreasing the spatio-temporal resolution of the locations. After this "anonymization" step, the exact location data becomes a set of spatio-temporal rectangles. Although such ambiguity protects the mobile users' privacy, it also reduces the accuracy of the data mining results.

Motivated by these observations, this paper defines privacy requirements for mobile transaction data and presents a system for collecting mobile users' trajectory data in a privacy-preserving manner. Compared to existing solutions, the proposed system does not require trusted components, yet it protects the privacy of mobile users and preserves the accuracy of data mining by keeping the spatio-temporal data intact. The proposed solution assumes that clients on mobile phones can communicate through a wireless P2P network. The process of trajectory collection is divided in five stages as follows. First, in the client registration stage, a group of k clients obtains permission and parameters from the server for executing the trajectory sampling and anonymization, the trajectory exchange-, and the data reporting stages in a multithreaded fashion. In the trajectory sampling and anonymization stage, clients record their private trajectories and generate a set of k "cloaking" trajectories to anonymize their actual trajectory. In the trajectory exchange stage, clients exchange sets of k partial trajectory pieces with other clients in the P2P network. Finally, in the data reporting stage, clients send anonymous partial trajectory pieces to the server.

IV.

5 Conclusion

This paper has presented an approach for mining spatio-temporal patterns from trajectory data and introduced the problem of representing spatio-temporal properties with redundant location symbols. The paper also considered the problem of collecting trajectories of moving objects in a privacy-preserving manner. Future work is needed for selecting the threshold values more intelligently based on the distribution of input data and for experiments with practical real data sets.

6 GENERAL

Before submitting your research paper, one is advised to go through the details as mentioned in following heads. It will be beneficial, while peer reviewer justify your paper for publication.

7 Scope

The Global Journals Inc. (US) welcome the submission of original paper, review paper, survey article relevant to the all the streams of Philosophy and knowledge. The Global Journals Inc. (US) is parental platform for Global Journal of Computer Science and Technology, Researches in Engineering, Medical Research, Science Frontier Research, Human Social Science, Management, and Business organization. The choice of specific field can be done otherwise as following in Abstracting and Indexing Page on this Website. As the all Global

The Editorial Board reserves the right to make literary corrections and to make suggestions to improve briefness.

It is vital, that authors take care in submitting a manuscript that is written in simple language and adheres to published guidelines.

8 Format

Language: The language of publication is UK English. Authors, for whom English is a second language, must have their manuscript efficiently edited by an English-speaking person before submission to make sure that, the English is of high excellence. It is preferable, that manuscripts should be professionally edited.

Standard Usage, Abbreviations, and Units: Spelling and hyphenation should be conventional to The Concise Oxford English Dictionary. Statistics and measurements should at all times be given in figures, e.g. 16 min, except for when the number begins a sentence. When the number does not refer to a unit of measurement it should be spelt in full unless, it is 160 or greater.

Abbreviations supposed to be used carefully. The abbreviated name or expression is supposed to be cited in full at first usage, followed by the conventional abbreviation in parentheses.

Metric SI units are supposed to generally be used excluding where they conflict with current practice or are confusing. For illustration, 1.4 l rather than 1.4 × 10-3 m3, or 4 mm somewhat than 4 × 10-3 m. Chemical formula and solutions must identify the form used, e.g. anhydrous or hydrated, and the concentration must be in clearly defined units. Common species names should be followed by underlines at the first mention. For following use the generic name should be constricted to a single letter, if it is clear.

9 Structure

All manuscripts submitted to Global Journals Inc. (US), ought to include: Title: The title page must carry an instructive title that reflects the content, a running title (less than 45 characters together with spaces), names of the authors and co-authors, and the place(s) wherever the work was carried out. The full postal address in addition with the email address of related author must be given. Up to eleven keywords or very brief phrases have to be given to help data retrieval, mining and indexing.

10 Abstract, used in Original Papers and Reviews:

Optimizing Abstract for Search Engines Many researchers searching for information online will use search engines such as Google, Yahoo or similar. By optimizing your paper for search engines, you will amplify the chance of someone finding it. This in turn will make it more likely to be viewed and/or cited in a further work. Global Journals Inc. (US) have compiled these guidelines to facilitate you to maximize the web-friendliness of the most public part of your paper.

11 Key Words

A major linchpin in research work for the writing research paper is the keyword search, which one will employ to find both library and Internet resources.

One must be persistent and creative in using keywords. An effective keyword search requires a strategy and planning a list of possible keywords and phrases to try.

Search engines for most searches, use Boolean searching, which is somewhat different from Internet searches. The Boolean search uses "operators," words (and, or, not, and near) that enable you to expand or narrow your affords. Tips for research paper while preparing research paper are very helpful guideline of research paper.

Choice of key words is first tool of tips to write research paper. Research paper writing is an art.A few tips for deciding as strategically as possible about keyword search: VIII One should start brainstorming lists of possible keywords before even begin searching. Think about the most important concepts related to research work. Ask, "What words would a source have to include to be truly valuable in research paper?" Then consider synonyms for the important words. It may take the discovery of only one relevant paper to let steer in the right keyword direction because in most databases, the keywords under which a research paper is abstracted are listed with the paper. One should avoid outdated words.

Keywords are the key that opens a door to research work sources. Keyword searching is an art in which researcher's skills are bound to improve with experience and time.

Numerical Methods: Numerical methods used should be clear and, where appropriate, supported by references.

Acknowledgements: Please make these as concise as possible.

12 References

References follow the Harvard scheme of referencing. References in the text should cite the authors' names followed by the time of their publication, unless there are three or more authors when simply the first author's name is quoted followed by et al. unpublished work has to only be cited where necessary, and only in the text. Copies of references in press in other journals have to be supplied with submitted typescripts. It is necessary that all citations and references be carefully checked before submission, as mistakes or omissions will cause delays.

References to information on the World Wide Web can be given, but only if the information is available without charge to readers on an official site. Wikipedia and Similar websites are not allowed where anyone can change the information. Authors will be asked to make available electronic copies of the cited information for inclusion on the Global Journals Inc. (US) homepage at the judgment of the Editorial Board.

The Editorial Board and Global Journals Inc. (US) recommend that, citation of online-published papers and other material should be done via a DOI (digital object identifier). If an author cites anything, which does not have a DOI, they run the risk of the cited material not being noticeable.

The Editorial Board and Global Journals Inc. (US) recommend the use of a tool such as Reference Manager for reference management and formatting.

13 Tables, Figures and Figure Legends

Tables: Tables should be few in number, cautiously designed, uncrowned, and include only essential data. Each must have an Arabic number, e.g. Table **??**, a self-explanatory caption and be on a separate sheet. Vertical lines should not be used. For scanned images, the scanning resolution (at final image size) ought to be as follows to ensure good reproduction: line art: >650 dpi; halftones (including gel photographs) : >350 dpi; figures containing both halftone and line images: >650 dpi.

the search? Will I be able to find all information in this field area? If the answer of these types of questions will be "Yes" then you can choose that topic. In most of the cases, you may have to conduct the surveys and have to visit several places because this field is related to Computer Science and Information Technology. Also, you may have to do a lot of work to find all rise and falls regarding the various data of that subject. Sometimes, detailed information plays a vital role, instead of short information.

14 Evaluators are human:

First thing to remember that evaluators are also human being. They are not only meant for rejecting a paper. They are here to evaluate your paper. So, present your Best.

15 Think Like Evaluators:

If you are in a confusion or getting demotivated that your paper will be accepted by evaluators or not, then think and try to evaluate your paper like an Evaluator. Try to understand that what an evaluator wants in your research paper and automatically you will have your answer.

16 Make blueprints of paper:

The outline is the plan or framework that will help you to arrange your thoughts. It will make your paper logical. But remember that all points of your outline must be related to the topic you have chosen.

17 Ask your Guides:

If you are having any difficulty in your research, then do not hesitate to share your difficulty to your guide (if you have any). They will surely help you out and resolve your doubts. If you can't clarify what exactly you require for your work then ask the supervisor to help you with the alternative. He might also provide you the list of essential readings.

18 Use of computer is recommended:

As you are doing research in the field of Computer Science, then this point is quite obvious.

19 Use right software:

Always use good quality software packages. If you are not capable to judge good software then you can lose quality of your paper unknowingly. There are various software programs available to help you, which you can get through Internet.

20 Use the Internet for help:

An excellent start for your paper can be by using the Google. It is an excellent search engine, where you can have your doubts resolved. You may also read some answers for the frequent question how to write my research paper or find model research paper. From the internet library you can download books. If you have all required books make important reading selecting and analyzing the specified information. Then put together research paper sketch out.

21 Use and get big pictures:

Always use encyclopedias, Wikipedia to get pictures so that you can go into the depth. 10. Bookmarks are useful: When you read any book or magazine, you generally use bookmarks, right! It is a good habit, which helps to not to lose your continuity. You should always use bookmarks while searching on Internet also, which will make your search easier.

22 Revise what you wrote:

When you write anything, always read it, summarize it and then finalize it.

12. Make all efforts: Make all efforts to mention what you are going to write in your paper. That means always have a good start. Try to mention everything in introduction, that what is the need of a particular research paper. Polish your work by good skill of writing and always give an evaluator, what he wants.

23 Have backups:

When you are going to do any important thing like making research paper, you should always have backup copies of it either in your computer or in paper. This will help you to not to lose any of your important.

24 Produce good diagrams of your own:

Always try to include good charts or diagrams in your paper to improve quality. Using several and unnecessary diagrams will degrade the quality of your paper by creating ”hotchpotch.” So always, try to make and include those diagrams, which are made by your own to improve readability and understandability of your paper.

25 Use of direct quotes:

When you do research relevant to literature, history or current affairs then use of quotes become essential but if study is relevant to science then use of quotes is not preferable.

26 Use proper verb tense:

Use proper verb tenses in your paper. Use past tense, to present those events that happened. Use present tense to indicate events that are going on. Use future tense to indicate future happening events. Use of improper and wrong tenses will confuse the evaluator. Avoid the sentences that are incomplete.

27 Never use online paper:

If you are getting any paper on Internet, then never use it as your research paper because it might be possible that evaluator has already seen it or maybe it is outdated version.

18. Pick a good study spot: To do your research studies always try to pick a spot, which is quiet. Every spot is not for studies. Spot that suits you choose it and proceed further.

28 Know what you know:

Always try to know, what you know by making objectives. Else, you will be confused and cannot achieve your target.

29 Use good quality grammar:

Always use a good quality grammar and use words that will throw positive impact on evaluator. Use of good quality grammar does not mean to use tough words, that for each word the evaluator has to go through dictionary. Do not start sentence with a conjunction. Do not fragment sentences. Eliminate one-word sentences. Ignore passive voice. Do not ever use a big word when a diminutive one would suffice. Verbs have to be in agreement with their subjects. Prepositions are not expressions to finish sentences with. It is incorrect to ever divide an infinitive. Avoid clichés like the disease. Also, always shun irritating alliteration. Use language that is simple and straight forward. put together a neat summary.

30 Arrangement of information:

Each section of the main body should start with an opening sentence and there should be a changeover at the end of the section. Give only valid and powerful arguments to your topic. You may also maintain your arguments with records.

31 Never start in last minute:

Always start at right time and give enough time to research work. Leaving everything to the last minute will degrade your paper and spoil your work.

32 Multitasking in research is not good:

Doing several things at the same time proves bad habit in case of research activity. Research is an area, where everything has a particular time slot. Divide your research work in parts and do particular part in particular time slot.

33 Never copy others' work:

Never copy others' work and give it your name because if evaluator has seen it anywhere you will be in trouble.

34 Take proper rest and food:

No matter how many hours you spend for your research activity, if you are not taking care of your health then all your efforts will be in vain. For a quality research, study is must, and this can be done by taking proper rest and food.

35 Go for seminars:

Attend seminars if the topic is relevant to your research area. Utilize all your resources.

36 Refresh your mind after intervals:

Try to give rest to your mind by listening to soft music or by sleeping in intervals. This will also improve your memory.

28. Make colleagues: Always try to make colleagues. No matter how sharper or intelligent you are, if you make colleagues you can have several ideas, which will be helpful for your research. 29. Think technically: Always think technically. If anything happens, then search its reasons, its benefits, and demerits.

37 Think and then print:

When you will go to print your paper, notice that tables are not be split, headings are not detached from their descriptions, and page sequence is maintained.

38 Adding unnecessary information:

Do not add unnecessary information, like, I have used MS Excel to draw graph. Do not add irrelevant and inappropriate material. These all will create superfluous. Foreign terminology and phrases are not apropos. One should NEVER take a broad view. Analogy in script is like feathers on a snake. Not at all use a large word when a very small one would be sufficient. Use words properly, regardless of how others use them. Remove quotations. Puns are for kids, not grunt readers. Amplification is a billion times of inferior quality than sarcasm.

39 Never oversimplify everything:

To add material in your research paper, never go for oversimplification. This will definitely irritate the evaluator. Be more or less specific. Also too, by no means, ever use rhythmic redundancies. Contractions aren't essential and shouldn't be there used. Comparisons are as terrible as clichés. Give up ampersands and abbreviations, and so on. Remove commas, that are, not necessary. Parenthetical words however should be together with this in commas. Understatement is all the time the complete best way to put onward earth-shaking thoughts. Give a detailed literary review.

40 Report concluded results:

Use concluded results. From raw data, filter the results and then conclude your studies based on measurements and observations taken. Significant figures and appropriate number of decimal places should be used. Parenthetical remarks are prohibitive. Proofread carefully at final stage. In the end give outline to your arguments. Spot out perspectives of further study of this subject. Justify your conclusion by at the bottom of them with sufficient justifications and examples.

41 After conclusion:

Once you have concluded your research, the next most important step is to present your findings. Presentation is extremely important as it is the definite medium though which your research is going to be in print to the rest of the crowd. Care should be taken to categorize your thoughts well and present them in a logical and neat manner. A good quality research paper format is essential because it serves to highlight your research paper and bring to light all necessary aspects in your research.

42 Key points to remember:

Submit all work in its form. Write your paper in the form, which is presented in the guidelines using the template. Please note the criterion for grading the final paper by peer-reviewers.

43 Final Points:

A purpose of organizing a research paper is to let people to interpret your effort selectively. The journal requires the following sections, submitted in the order listed, each section to start on a new page. The introduction will be compiled from reference matter and will reflect the design processes or outline of basis that direct you to make study. As you will carry out the process of study, the method and process section will be constructed as like that. The result segment will show related statistics in nearly sequential order and will direct the reviewers next to the similar intellectual paths throughout the data that you took to carry out your study. The discussion section will provide understanding of the data and projections as to the implication of the results. The use of good quality references all through the paper will give the effort trustworthiness by representing an alertness of prior workings.

Writing a research paper is not an easy job no matter how trouble-free the actual research or concept. Practice, excellent preparation, and controlled record keeping are the only means to make straightforward the progression.

44 General style:

Specific editorial column necessities for compliance of a manuscript will always take over from directions in these general guidelines. The Introduction should "introduce" the manuscript. The reviewer should be presented with sufficient background information to be capable to comprehend and calculate the purpose of your study without having to submit to other works. The basis for the study should be offered. Give most important references but shun difficult to make a comprehensive appraisal of the topic. In the introduction, describe the problem visibly. If the problem is not acknowledged in a logical, reasonable way, the reviewer will have no attention in your result. Speak in common terms about techniques used to explain the problem, if needed, but do not present any particulars about the protocols here. Following approach can create a valuable beginning: Explain the value (significance) of the study Shield the model -why did you employ this particular system or method? What is its compensation? You strength remark on its appropriateness from a abstract point of vision as well as point out sensible reasons for using it. Present a justification. Status your particular theory (es) or aim(s), and describe the logic that led you to choose them. Very for a short time explain the tentative propose and how it skilled the declared objectives.

45 Approach:

Use past tense except for when referring to recognized facts. After all, the manuscript will be submitted after the entire job is done. Sort out your thoughts; manufacture one key point with every section. If you make the four points listed above, you will need a least of four paragraphs. Present surroundings information only as desirable in order hold up a situation. The reviewer does not desire to read the whole thing you know about a topic. Shape the theory/purpose specifically -do not take a broad view. As always, give awareness to spelling, simplicity and correctness of sentences and phrases.

46 Procedures (Methods and Materials):

This part is supposed to be the easiest to carve if you have good skills. A sound written Procedures segment allows a capable scientist to replacement your results. Present precise information about your supplies. The suppliers and clarity of reagents can be helpful bits of information. Present methods in sequential order but linked methodologies can be grouped as a segment. Be concise when relating the protocols. Attempt for the least amount of information that would permit another capable scientist to spare your outcome but be cautious that vital information is integrated. The use of subheadings is suggested and ought to be synchronized with the results section. When a technique is used that has been well described in another object, mention the specific item describing a way but draw the basic XV principle while stating the situation. The purpose is to text all particular resources and broad procedures, so that another person may use some or all of the methods in one more study or referee the scientific value of your work. It is not to be a step by step report of the whole thing you did, nor is a methods section a set of orders.

47 Materials:

Explain materials individually only if the study is so complex that it saves liberty this way. Embrace particular materials, and any tools or provisions that are not frequently found in laboratories. Do not take in frequently found. If use of a definite type of tools. Materials may be reported in a part section or else they may be recognized along with your measures.

48 Methods:

Report the method (not particulars of each process that engaged the same methodology) Describe the method entirely To be succinct, present methods under headings dedicated to specific dealings or groups of measures Simplify -details how procedures were completed not how they were exclusively performed on a particular day. If well known procedures were used, account the procedure by name, possibly with reference, and that's all. Approach: It is embarrassed or not possible to use vigorous voice when documenting methods with no using first person, which would focus the reviewer's interest on the researcher rather than the job. As a result when script up the methods most authors use third person passive voice. Use standard style in this and in every other part of the paper -avoid familiar lists, and use full sentences.

49 What to keep away from

Resources and methods are not a set of information. Skip all descriptive information and surroundings -save it for the argument. Leave out information that is immaterial to a third party.

50 Results:

The principle of a results segment is to present and demonstrate your conclusion. Create this part a entirely objective details of the outcome, and save all understanding for the discussion.

The page length of this segment is set by the sum and types of data to be reported. Carry on to be to the point, by means of statistics and tables, if suitable, to present consequences most efficiently.You must obviously differentiate material that would usually be incorporated in a study editorial from any unprocessed data or additional appendix matter that would not be available. In fact, such matter should not be submitted at all except requested by the instructor.

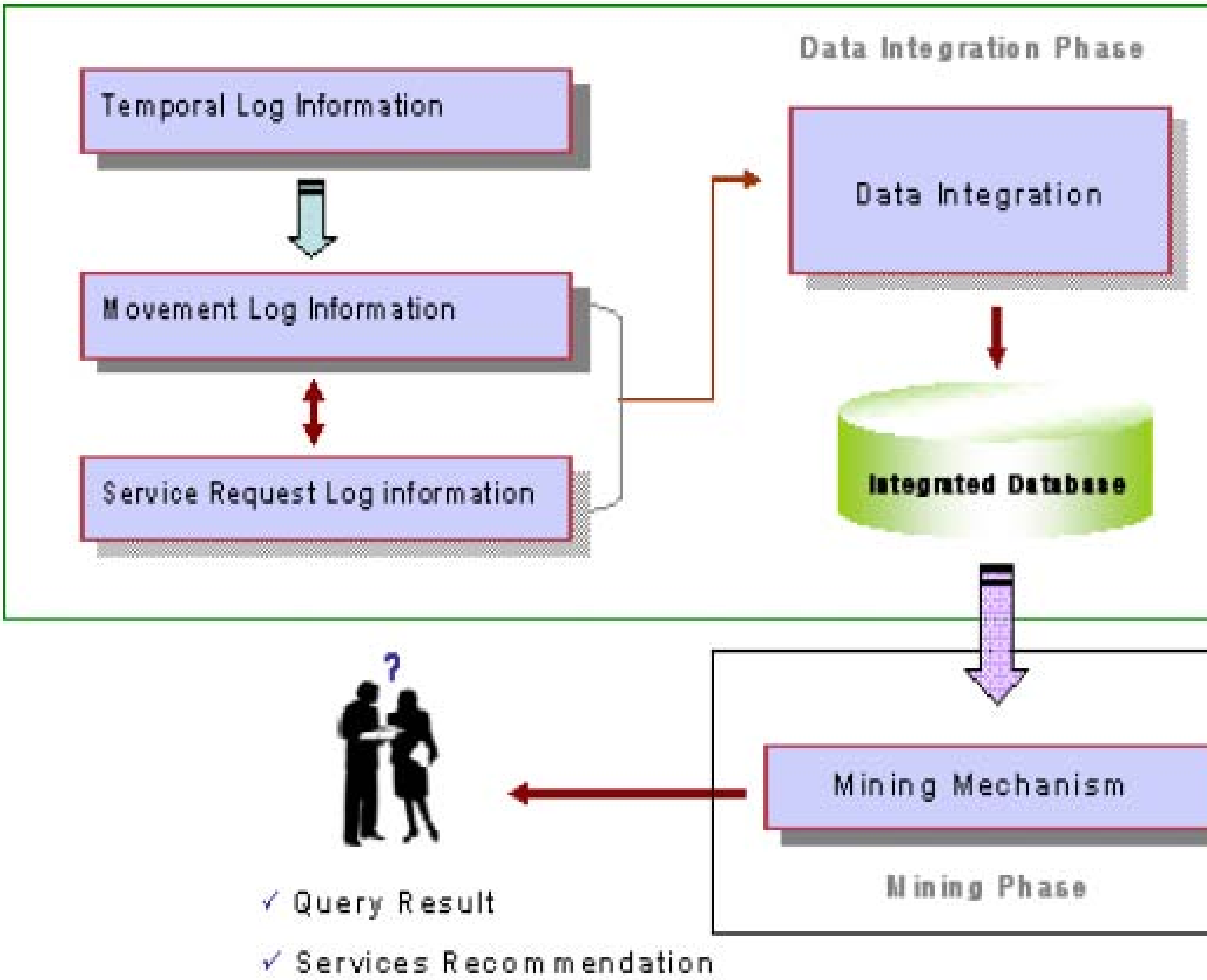
51 Content

Sum up your conclusion in text and demonstrate them, if suitable, with figures and tables. In manuscript, explain each of your consequences, point the reader to remarks that are most appropriate. Present a background, such as by describing the question that was addressed by creation an exacting study. Explain results of control experiments and comprise remarks that are not accessible in a prescribed figure or table, if appropriate. Examine your data, then prepare the analyzed (transformed) data in the form of a figure (graph), table, or in manuscript form. What to stay away from Do not discuss or infer your outcome, report surroundings information, or try to explain anything. Not at all, take in raw data or intermediate calculations in a research manuscript. [1] [2] [3]

Do not give permission to anyone else to "PROOFREAD" your manuscript.

1

Figure 1: Figure 1 :



2

Figure 2: Figure 2 :

User ID	Timestamps	Access Pattern
100	T1	< (O:1) (B:2) (P:5) (L:8) >
	T2	< (A:1) (D:1) (E:2) >
	T3	< (O:2) (B:2) (E:1) >
	T4	< (C:4) (F:2) >
	T5	< (C:2) (B:2) >
101	T1	< (O:1) (B:3) (P:5) (L:8) >
	T2	< (B:1) (D:1) >
	T3	< (C:1) (E:3) (G:7) >
	T4	< (C:4) (E:3) (F:2) (G:6) >
	T5	<(B:2) (D:1) >
102	T1	< (O:3) (B:6) (P:8) (L:7) >
	T2	< (B:2) (C:6) (D:7) >
	T3	< (O:2) (B:3) (E:2) >
	T4	< (E:3) (G:7) >
	T5	< (D:1) (E:2) >
103	T1	< (O:3) (B:2) (L:7) >
	T2	< (B:4) >
	T3	< (C:3) (E:4) >
	T4	< (C:3) (E:5) >
	T5	< (C:2) (B:2) >

3

Figure 3: Figure 3 :

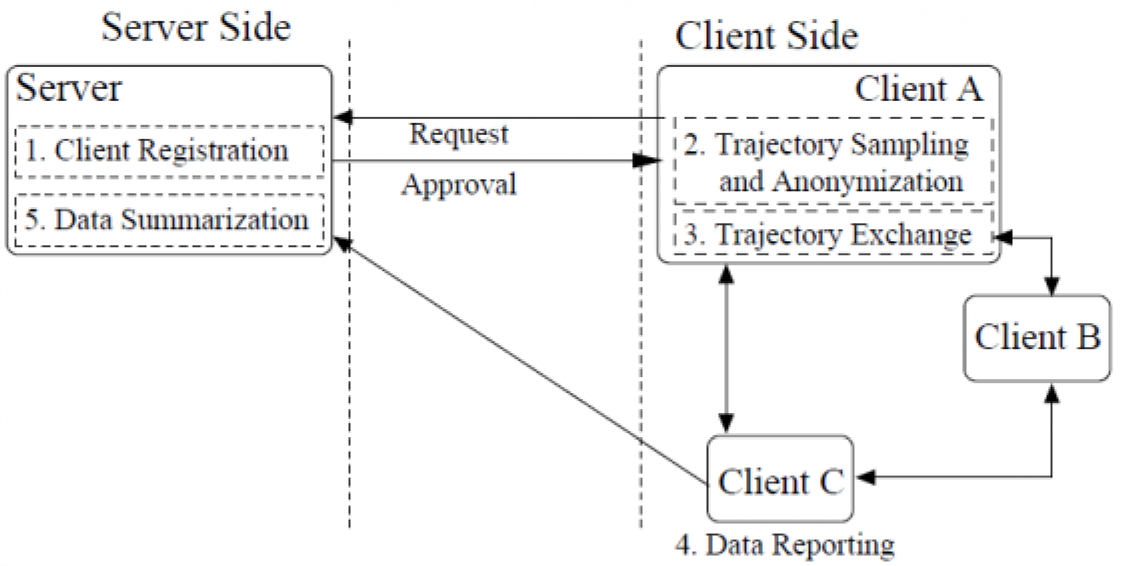


Figure 4:

•

Figure 5: Figures:

•

Figure 6:

Acknowledgements: Contributors to the research other than authors credited should be mentioned under acknowledgement. The specifications of the source of funding for the research if appropriate can be included. Suppliers of resources may be mentioned along with address.

1) Substantial contributions to conception and acquisition of data, analysis and interpretation of the findings.

2) Drafting the paper and revising it critically regarding important academic content.

3) Final approval of the version of the paper to be published.

All authors should have been credited according to their appropriate contribution in research activity and preparing paper. Contributors who do not match the criteria as authors may be mentioned under Acknowledgement.

.1 Abstract:

The summary should be two hundred words or less. It should briefly and clearly explain the key findings reported in the manuscript-must have precise statistics. It should not have abnormal acronyms or abbreviations. It should be logical in itself. Shun citing references at this point.

An abstract is a brief distinct paragraph summary of finished work or work in development. In a minute or less a reviewer can be taught the foundation behind the study, common approach to the problem, relevant results, and significant conclusions or new questions.

Write your summary when your paper is completed because how can you write the summary of anything which is not yet written? Wealth of terminology is very essential in abstract. Yet, use comprehensive sentences and do not let go readability for briefness. You can maintain it succinct by phrasing sentences so that they provide more than lone rationale. The author can at this moment go straight to Do not present the similar data more than once. Manuscript should complement any figures or tables, not duplicate the identical information. Never confuse figures with tables -there is a difference.

.2 Approach

As forever, use past tense when you submit to your results, and put the whole thing in a reasonable order. Put figures and tables, appropriately numbered, in order at the end of the report If you desire, you may place your figures and tables properly within the text of your results part.

.3 Figures and tables

If you put figures and tables at the end of the details, make certain that they are visibly distinguished from any attach appendix materials, such as raw facts Despite of position, each figure must be numbered one after the other and complete with subtitle In spite of position, each table must be titled, numbered one after the other and complete with heading All figure and table must be adequately complete that it could situate on its own, divide from text Discussion:

The Discussion is expected the trickiest segment to write and describe. A lot of papers submitted for journal are discarded based on problems with the Discussion. There is no head of state for how long a argument should be. Position your understanding of the outcome visibly to lead the reviewer through your conclusions, and then finish the paper with a summing up of the implication of the study. The purpose here is to offer an understanding of your results and hold up for all of your conclusions, using facts from your research and generally accepted information, if suitable. The implication of result should be visibly described. Infer your data in the conversation in suitable depth. This means that when you clarify an observable fact you must explain mechanisms that may account for the observation. If your results vary from your prospect, make clear why that may have happened. If your results agree, then explain the theory that the proof supported. It is never suitable to just state that the data approved with prospect, and let it drop at that. Make a decision if each premise is supported, discarded, or if you cannot make a conclusion with assurance. Do not just dismiss a study or part of a study as "uncertain." Research papers are not acknowledged if the work is imperfect. Draw what conclusions you can based upon the results that you have, and take care of the study as a finished work You may propose future guidelines, such as how the experiment might be personalized to accomplish a new idea. Give details all of your remarks as much as possible, focus on mechanisms. Make a decision if the tentative design sufficiently addressed the theory, and whether or not it was correctly restricted.

Try to present substitute explanations if sensible alternatives be present. One research will not counter an overall question, so maintain the large picture in mind, where do you go next? The best studies unlock new avenues of study. What questions remain? Recommendations for detailed papers will offer supplementary suggestions.

.4 XVII

[Tsoukatos and Gunopulos ()] 'Efficient mining of spatiotemporal patterns'. I Tsoukatos , D Gunopulos . *Proceedings of International Symposium on in Spatial and Temporal Databases*, (International Symposium on in Spatial and Temporal Databases) 2001. p. .

[Agrawal and Srikant ()] 'Mining sequential patterns'. R Agrawal , R Srikant . *Proc. of Intl. Conf. on Data Engineering*, (of Intl. Conf. on Data Engineering) 1995. p. .

[Das et al. ()] 'Rule discovery from time series'. G Das , K I Lin , H Mannila , G Renganathan , P Smyth . *Proc. of Intl. Conf. on Knowledge Discovery and Data Mining*, (of Intl. Conf. on Knowledge Discovery and Data Mining) 1998. p. .

[Birant and Kut ()] 'ST-DBSCAN: An algorithm for clustering spatial-temporal data'. D Birant , A Kut . *Data and Knowledge Engineering* 2007. 60 (1) p. .