Specialist English: Assignment 9 (solutions)

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January 4, 2018

Here's my solutions; your solutions needn't be identical.

Problem 1 *In the following three Conclusion sections: describe how the authors go beyond merely summarizing the paper (if at all), and critique how they have done it (i.e., describe the pros and cons, and how they might be improved).*

I wouldn't expect you to write exactly what I write here; what you write will be determined by what you consider important (which may be different to my opinion).

> This article presents the design, implementation, and evaluation of DepSky, a storage service that improves the availability and confidentiality provided by commercial storage clouds. The system achieves these objectives by building a cloud-of-clouds on top of a set of storage clouds, combining Byzantine quorum system protocols, cryptographic secret sharing, erasure codes and the diversity provided by the use of several clouds. Moreover, the notion of consistency proportionality introduced by DepSky allows the system to provide the same level of consistency of the underlying clouds it uses for storage.
>
> We believe DepSky protocols are in an unexplored region of the quorum systems design space and can enable applications sharing critical data (e.g., financial, medical) to benefit from storage clouds. Moreover, the few and weak assumptions required by the protocols allow them to be used to replicate data efficiently not only on cloud storage services, but with any storage service available (e.g., NAS disks, NFS servers, FTP servers, key-value databases).
>
> The article also presents an extensive evaluation of the system. The key conclusion is that it provides confidentiality and improved availability with an added cost as low as 23% of the cost of storing data on a single cloud for a practical scenario, which seems to be a good compromise for critical applications.
>
> — Bessani et al., ACM Trans. Storage, 2013.

As is typical in a Conclusion, Bessani et al. (2013) begin by giving an idea of the contents of their paper. However, even their first paragraph goes beyond merely summarizing: it indicates where their proposed software DepSky might be used ("commercial storage clouds"), and describes their proposed "consistency proportionality" which may be useful beyond the scope of the present paper. By blending these components together, the authors avoid the inherent repetitiveness of a simple summarization.

The second paragraph describes how DepSky fits in to the current situation ("in an unexplored region of the quorum systems design space") and indicates where DepSky might be useful in the future ("e.g., financial, medical"). While the authors acknowledge they have made assumptions, they describe them as "few and weak assumptions" implying they do not inhibit DepSky from being used in other ways (giving concrete examples such as NAS disks). This paragraph speculates on future uses for DepSky, which is appropriate in a Conclusion.

The third paragraph summarizes the experimental results, suggesting DepSky gives a "good compromise for critical applications". The authors say DepSky "provides confidentiality and improved availability", but are vague about how this is achieved, and how successful it is, although it succinctly and specifically describes the downside of DepSky ("an added cost as low as 23%"). However, describing this as a "good compromise" is bordering on salesmanship (the readers

can decide for themselves whether or not it's "good"); less pushy alternatives are "suitable compromise" or "reasonable compromise".

> In this paper we presented the design of a toolkit called Cloudmesh that allows to access to multiple clouds through convenient interfaces. This includes command line, a command shell, REST, as well as a graphical user interface. Cloudmesh is under active development and has shown its viability for accessing more than EC2 based clouds. Native interfaces to OpenStack, Azure, as well as any EC2 compatible cloud have been delivered and virtual machine management enabled. An important contribution of Cloudmesh is that it provides a sophisticated interface to bare metal provisioning capabilities that not only can be used by administrators, but also by authorized users. A role based authorization service makes this possible. Furthermore, we have developed a multi-cloud metrics framework that leverages information from various IaaS frameworks. Future enhancements will include network and storage provisioning.
>
> — Laszewski et al., BigSystem, 2014.

Laszewski et al. (2014) give a one-paragraph Conclusion, which includes a summary of their proposed multi-cloud toolkit called Cloudmesh, describing what it does and listing some of its features. Beyond this, the authors indicate the current state of Cloudmesh ("active development"), suggest where it might be used ("OpenStack, Azure", etc.), and who would use it ("not only ... administrators, but also by authorized users"). They also briefly mention "future enhancements".

Several parts of this Conclusion indicate salesmanship, such as "convenient interfaces" (instead of just "an interface"), "has shown its viability for accessing more than EC2 based clouds" (instead of the straightforward "is also used by [such-and-such] for [something]") and "it provides a sophisticated interface".

In my opinion, much of this paragraph is a long-winded way of saying "we present Cloudmesh, a multi-cloud toolkit with an interface", which makes the paragraph less readable. In addition to being wordy, it is also peppered with minor grammar problems, such as "allows to access" (which should be "allows access") and "this includes command line" (which I suspect should be "this includes a command-line interface"). Several compound adjectives are written without a hyphen, such as in "EC2 compatible cloud", "bare metal provisioning capabilities", and "role based authorization service". This paragraph uses past tense ("in this paper we presented", and "we have developed") which, while not incorrect, is unnecessary.

Future work is described in an 8-word sentence, which is overly simple. This section would be improved by identifying preliminary ideas regarding how "network and storage provisioning" would enhance Cloudmesh. Also, it is risky to write definitely about the future (as in "future enhancements will ...") because the prediction might be wrong. Moreover, there is no benefit to predicting the future, as this can be easily rephrased to e.g. "in the future, we intend to improve ...".

> We presented an interactive semantic modeling approach for indoor scenes. The captured indoor scene images are first segmented into regions with object label, and then the segmented objects are replaced by their matched 3D models in the database. As the user continues to capture images of an indoor scene, our system is capable of progressively reconstructing a prototype of the indoor scene. The reconstructed semantic scene can [be] directly applied in computer graphics applications, not only in rendering and gaming which only requires geometry information but also in applications requiring semantic scene information, such as furniture layout.
>
> The limitation of our approach is that the geometry details of the objects are missing in the reconstructed scene. We believe that the similarity between the reconstructed scene and real scene can be significantly improved if the scale of the 3D model database is increased. Recognition accuracy is dependent on the quality of the captured depth data. Although the random regression forest based model matching algorithm can handle noise and partial data well, it still fails to figure out the best matches when the depth data of important features of the objects are missing. Currently, the size of the 3D model database is relatively small, totally 180 models in the database. The scalability of random regression tree based model recognition algorithm to large scale database needs to be further tested in terms of the recognition accuracy and memory footprint.
>
> In the future, we plan to investigate part recognition of the objects in the scene to facilitate deformation of the model in the database to better fit the acquired depth data. We are also interested in various applications of semantic indoor scene modeling, such as context aware augmented reality, virtual indoor decoration and so on.
>
> — Shao et al., ACM Trans. Graph, 2012.

The Conclusion by Shao et al. (2012) contains three paragraphs, with the first primarily being a summary of their work, although it also identifies where the proposed approach may be used ("rendering and gaming", "furniture layout", etc.). The second paragraph goes beyond summarization by discussing a limitation of the approach ("the geometry details of the objects are missing") and identifying how it could potentially be overcome ("if the scale of the 3D model database is increased"); this has ramifications for the "scalability of [the] random regression tree based model recognition algorithm". The third paragraph describes a proposed future research idea ("part recognition"); they also describe another idea the authors are thinking about ("semantic indoor scene modeling"), giving examples of where this might apply ("context aware augmented reality, virtual indoor decoration"). The Conclusion thus goes beyond merely summarizing the paper in three meaningful ways: identifying realistic applications, analyzing a limitation, and discussing future work.

The snippet, while understandable, contains some grammar bugs, such as "with object label" (which should be "with object labels"), "the limitation" (instead of "a limitation"), "totally" is the wrong choice of word (correct is "totaling", but more precise is "comprising of"), and "of random regression tree based model recognition algorithm" should be "of the random-regression tree-based model recognition algorithm" (adding a "the" and some hyphens for compound adjectives). Moreover, the phrase "figure out" is something a child might say; in this case, "identify" is more precise.

Problem 2 *The paper Fu et al. (2017) contains horribly typeset references...*

1. *Rewrite reference [8] (by Lai and others) using BibTeX; the paper is available via:* `doi.org/10.1109/TIFS.2013.2271848`.

   The reference is: [1], and is typeset:

```
@article{LaiEtAl2013,
  title = {Attribute-Based Encryption With Verifiable Outsourced Decryption},
  authors = {Junzuo Lai and Robert H. Deng and Chaowen Guan and Jian Weng},
  journal = {IEEE Trans. Inf. Forensic Secur.},
  volume = {8},
  number = {8},
  year = {2013},
```

```
  pages = {1343-1354}
}
```

Journal abbreivations should be expected; for this journal, the abberviation is listed on its Wikipedia page[1]. The `number` field is not particularly important (I ordinarily leave it off, and in the compiled version it's not included).

2. *Rewrite reference [13] (by Yu and others) using BibTeX; the paper is available via:* `doi.org/10.1109/ICC.2016.7510991`.

   The reference is: [2], and is typeset:

```
@inproceedings{YuEtAl2016,
  title = {Efficient, secure and non-iterative outsourcing of large-scale
    systems of linear equations},
  authors = {Yunpeng Yu and Yuchuan Luo and Dongsheng Wang and
    Shaojing Fu and Ming Xu},
  booktitle = {Proc. IEEE International Conference on Communications},
  year = {2016}
}
```

(Remember: the referees of your paper are probably listed in your references; don't butcher their reference!)

Problem 3 *In what ways does the typesetting of reference [9] (by Chow and others) differ from the other references? I.e., how is it inconsistent?*

There were a range of inconsistencies; the two most important ones are:

- The author name "Sherman S. M. Chow" is not abberviated like the others, e.g., "Chen X".
- The conference name is acronymized, whereas other conferences are (poorly) written in full, e.g., "Communications (ICC), 2016 International Conference on.".

References

[1] *Attribute-based encryption with verifiable outsourced decryption*, IEEE Trans. Inf. Forensic Secur., 8 (2013), pp. 1343–1354.

[2] *Efficient, secure and non-iterative outsourcing of large-scale systems of linear equations*, in Proc. IEEE International Conference on Communications, 2016.

[1] `https://en.wikipedia.org/wiki/IEEE_Transactions_on_Information_Forensics_and_Security`