Institute of Technology
University of Washington – Tacoma
Instructor: Wes Lloyd

Assignment 2 – Cloud Research Paper Presentation

Version 0.11

Presentation Dates: Tuesday May 23rd, Thursday May 25th, Tuesday May 30th, Thursday June 1st

Objective

To support term project development and writing the term papers for Spring Quarter we project team will prepare and present a review and critique of a recent research paper in cloud computing. Cloud research paper presentations will take place in weeks #8, #9, and #10 of the course. The cloud research paper presentation serves many excellent purposes:

- Practicing presentation skills on a technical topic: the format of the TCSS 562 research paper presentation is quite similar to MS Capstone and Masters thesis presentations. By practicing presenting someone else's work in this format everyone gains experience and insight on how to design future research presentations.
- Learning how to review and critique technical papers and literature: Throughout a computer science career it will be necessary to learn and review new technologies. Often this involves reading and comprehending technical literature. Reviewing research papers is a great way to practice these skills
- Gain exposure to critiquing research papers of varying quality to gain insight on writing and evaluating one's own work for the final term paper.

Groups are to produce a slide presentation which describes and critiques the contributions of a related cloud research paper using the following structure:

1. General overview of the research paper
    a. What is the problem being solved?
2. Summary of the primary contributions
    a. What did the authors do to address the problem?
3. Overview of related work (based on the author's overview, plus one extra reference)
    a. What have others done, and what was missing from their work?
4. Review of the paper
    a. What is the technology or evaluation proposed?
    b. What are the key findings?
    c. Do the authors assess their approach? (yes/no)
    d. How do they evaluate their approach? What techniques are used?
    e. What are the conclusions?
5. Critique of the paper
    a. What are the primary strengths of their new system, or of the new benchmark/evaluation effort?
    b. What are some weaknesses of the new system/approach?
    c. How good is their evaluation? Is something missing? Is it believable? Repeatable?
    d. Are there gaps in the work? What future work remains?
6. Class discussion of the paper

For the cloud research paper presentations, each group will present as a team, one research paper related to the group's term project. The presentations should last from 20 to 25 minutes with 5 minutes for discussion.

Groups should select and submit their research paper **7-days before** the scheduled presentation date. Good papers tend to be from IEEE or ACM peer reviewed conferences or journals and will have been previously cited when checking with Google scholar. The paper must be related to the group's term project. The paper could be on aspects of cloud services technology directly, or it could be a paper related to performance analysis and benchmarking related systems.

It is a good idea to discuss the proposed paper with the instructor if there are any doubts. If the paper is not approved, another paper will be recommended.

Suggested papers have been posted online at:
http://faculty.washington.edu/wlloyd/courses/tcss562/papers/

Consider the list of suggested papers as good papers to add to your references section for the term paper.

The following are example papers on NOSQL databases represent seminal papers in the field:

DeCandia G, Hastorun D, Jampani M, Kakulapati G, Lakshman A, Pilchin A, Sivasubramanian S, Vosshall P, Vogels W. Dynamo: Amazon's highly available key-value store. In ACM SIGOPS operating systems review., 2007 Oct 14; 41(6): pp. 205-20.

Chang F, Dean J, Ghemawat S, Hsieh WC, Wallach DA, Burrows M, Chandra T, Fikes A, Gruber RE. Bigtable: A distributed storage system for structured data. ACM Transactions on Computer Systems (TOCS). 2008 Jun 1;26(2):4.

Seminal papers tend to be famous, well known, frequently cited, and at times more difficult to critique. Often, they are the product of large research efforts from large organizations such as Microsoft Research or from research universities such as Carnegie Mellon or Berkeley.

EACH GROUP MEMBER SHOULD READ THE PAPER THORUGHOULY AND CAREFULLY

See my presentation slides on ***active reading*** for advice on how to review technical writing:
http://faculty.washington.edu/wlloyd/ctc.pptx

Active reading involves reading with-a-pen-in-hand, and interactively looking up unknown material to increase your comprehension of the paper on the internet. I suggest approaching the paper from the point-of-view of a critical reader, such as an editor. Mark and find all typographical errors. While you're reading circle and star main points, and write any questions that come to mind in the margins.

1 Research Paper Presentation Organization

The slide presentation should follow the recommended structure provided below. Groups should provide at least one slide for each of the topics. Additional slides may be included for each topic where appropriate. Groups **should** have around 20 slides total.

It is recommended that the presentation be broken into parts.

Three-person team
Team member #1: Title Slide, Talk Outline, Paper overview, background
Team member #2: Summary of new technology, key contributions, evaluation, author conclusions
Team member #3: Critique: Strengths, Weaknesses, Evaluation, GAPS, Future Work
Everyone: Questions

Two-person team
Team member #1: Title Slide, Talk Outline, Paper overview, background, Summary of new technology, key contributions
Team member #2: Evaluation, Author's conclusions, Critique: Strengths, Weaknesses, Evaluation, GAPS, Future Work
Everyone: Questions

2 Research Paper Review Presentation Format

Recommended Research Paper Review Presentation Format

Slide No.	Major Topic	Questions to Answer / Topics
Title Slide	Identify paper being reviewed	Show title, authors, institution, and name of your group members who have prepared the review
Slide 1	Talk outline	Summarizes the key points of the talk
Slide 2	Paper overview	Introduce the problem the paper is about: What is the problem being solved? Why is it a problem? Why is it a problem we're interested in solving? Do the authors state any research questions? Hypotheses to investigate?
Slide 3	Introduction	What have the authors done to address the problem? (high level only)
Slides 4-6*	Background / Related Work	What have others done related to the problem? What was important from what they found? What is missing from their work? ** INCLUDE 1 REFERENCE FROM OUTSIDE THE PAPER
Slides 7-9*	Summary of new technology or benchmark	Describe the new technology, or benchmark/evaluation conducted.
Slide 10*	Key contributions	Describe the key contributions and key findings from the paper. ***If a system***, what does the new approach provide which we didn't ***have*** before? ***If an evaluation***, what does the evaluation provide which we didn't ***know*** before?

Slide 11-12*	Author's Evaluation	How do the authors assess their approach? What techniques did they use? What are their results? How good are the results?
Slides 13	Conclusions	What are the author's key conclusions? What is their response to prior research questions or hypotheses?
Slide 14*	Critique: Strengths	What are the primary strengths of the new approach, or benchmarks? What are the strengths of the evaluation in the paper? Is their performance good? Are costs low? Is it scalable? Secure? Fault tolerant?
Slide 15*	Critique: Weaknesses	What are some weaknesses of the new approach? This could be things such as complexity of applying the approach, or it's usability. How well has the proposed solution addressed the original problem?
Slide 16*	Critique: Evaluation	How good is the paper's evaluation? Is something missing? Are the results believable? Is enough information available to repeat/reproduce tests?
Slides 18	Identify GAPS	Are there gaps in the work? Did the authors fail to solve some component of the problem? What constraints and limitations exist for the solution? What future work remains?
Slide 19	Future Work	Research gaps lead to open problems and future work. What areas in the paper were not adequately addressed? Sometimes authors will state their plans for future work. This will be areas of work which are incomplete at the time of the writing.
Slide 20	Questions	A break for questions.

** - actual number of slides will vary depending on the paper*

3 Grading Rubric

[15% of course grade]

25% **Design quality of slides**

This is the overall quality of the presentation materials. This reflects the formatting of quality of the slides. Slides should not have long sentences, but phrases which summarize key points. Slides should be designed to encourage speakers to naturally present material, as opposed to reading the material. Slides should include slide numbers to help speakers keep pace during the talk. Teams will prepare slides for the presentation given in class. Feedback from the instructor and from the presentation in class can be used to refactor and improve the slides for final submission and grading. Final slides are due by Friday June 2nd at 11:59p and should be submitted to Canvas.

30% **Technical content**

The technical content grade will be evaluated by considering the in-class presentation as well as the content described on the final slides submitted by Friday June 2nd. All groups have the opportunity to improve the technical content of slides for final submission due on Friday June 2nd.

25% **Presentation quality, clarity, understandability**

The overall clarity and understandability of the presentation is worth approximately 25%. Clarity and understandability are improved by speaking slowly, deliberately, looking at the audience, pausing, as well as having well designed slides (foils), and having practiced the presentation prior to class. The instructor will try to deliberately slow down presentations to help improve group grades by interjecting when possible. The use of notecards is suggested to prevent excessive reading from the laptop screen. With notecards, it is easier to practice the presentation and eventually the notecards are no longer needed.

20% **Participation in presentations** 

During the days teams are not actively making a presentation, each team is responsible for reviewing research papers being presented in the class and submitting **at least two questions** related to the paper(s) or presentation(s) made in class by the end of the day. The questions can relate directly to the research papers, or be more directed towards the presentations made in the class. Questions are best submitted as a short PDF file to Canvas after the class. Alternatively, groups may submit questions on paper in written form at the end of each class. Written submissions must be legible to receive credit. It is highly encouraged, but not required, that groups ask the questions in class, where appropriate, to participate in the paper presentations.

4 Notes about the presentation

Groups who's in-class presentation is scheduled early on will be graded less rigorously in a qualitative manner as needed. For example, if you are the first presentation, there is leeway to make mistakes and also the opportunity to correct slides in time for their final submission. By the end of the research paper presentations, remaining groups should be more accustomed to the presentation format.

5 Presentation feedback

It is recommended that groups submit slides to the instructor via email for feedback prior to the presentation in either ppt/pptx or PDF format. If an MS Office file is provided, review will be via track changes/comments. If a PDF file is provided, review will be via separate written comments. Comments are added as feedback to Google slides. The instructor will attempt to provide a 24-hour or better turnaround time for slide feedback. At the latest, **please send slides for feedback no later than ~5pm on the day before the presentation** to receive suggestions, feedback, corrections by the next morning. Slides will be shared with the class via posting on the website.

6 Submission Deadline

The following is the tentative cloud research paper presentation schedule. We will aim for 2-3 presentations of ~ 20-30 minutes per class session.

Week 9:
May 23
Team 1 – In-memory caching: Travis, Cindy, Minh
Team 2 – Microservices: Spoorthy, Ratna, Tejaswi

May 25
Team 3 – Container orchestration services: Rituja, Bharathi, Misba
Team 4 – Object/Blob storage: Inno, Viet, Swetha
Team 5 – Relational database services: Zelun, Mengting, Kerwin

Week 10:
May 30
Team 6 – Relational database services: Mohib, Louis
Team 7 – NO SQL databases: J. McFadden, Y. Tamta, J. Gandhi
Team 8 – Microservices: Keerthanaa, Megha, Sowmya

June 1
Team 9 – Object/blob storage: Pooja, Sruthi
Team 10 – Microservices: Smruthi, Sonam, Srinidhi

Final project slides should be submitted to Canvas in PDF format by Friday June 2nd at 11:59pm.

7 Change History

Version	Date	Change
0.1	05/09/2017	Original Version
0.11	05/10/2017	Dates updated