

Final Project Write-up

CS554: Data-Intensive Computing

Due: 11:59PM 05-01-2023

Overview

A major component of your grade will be based on your semester-long project, which you have been assigned. Your final report will be an extension to your initial proposal and progress report that you wrote early in the semester. You should use font size 10 point (Times New Roman, Arial, or Calibri), dual column format, single spaced (with 6 pt space between paragraphs), and have normal margins of 1" on all corners. You can use this IEEE template as a starting point (https://www.ieee.org/conferences_events/conferences/publishing/templates.html), but change the margins to 1" and the font size to 10. In the end, your reports should look something like this, from a formatting perspective: http://www.cs.iit.edu/~iraicu/research/publications/2011_LSAP2011_exascale-storage.pdf. Some of you have already used such templates for your reports, and you do not need to change the template to the IEEE one, as long as you have the right font type, size, columns, spacing, and margins. You are encouraged to write your final report in Latex using tools such as OverLeaf (<https://www.overleaf.com>).

Your final report might include elements from your proposal and mid-term report, but should be a separate document. Please start a new document in writing the final report, and only bring in relevant text from your proposal and midterm report as needed. Your final report should include the following information:

- Title
- People involved (in case it is a group project)
- Abstract (150 ~ 300 words)
- Section 1: Introduction, Background, and motivation (1 ~ 2.5 pages)
- Section 2: Proposed solution (2~4 pages)
 - Clearly state the nature of the project (e.g. implementation of a real system, simulation, theoretical, empirical performance evaluation, survey, etc)
 - Be specific about what techniques you used, what existing software and systems you used, etc
 - Use diagrams to explain your proposed solution
 - Describe your implementation, such as programming languages used, lines of code, dependencies, source control, etc
- Section 3: Evaluation (2~5 pages)
 - Be specific with the evaluation methodology, metrics measured, and variables you explored
 - Since all of your projects had some systems component to them, where you built some system, or at least you analyzed some existing system, I expect you to have a significant performance evaluation section, with empirical results!
 - I don't want to see lots of graphs/tables, without clear explanation on what the experiment was, why did you do it, what were the variables that you fixed and what were the variables that you varied, metrics used (make sure you defined them somewhere), and what did you learn from the experiments; in the end, I don't want raw data, I want interpreted and well thought out results

- Every figure should be labeled, every axis should be labeled and have clearly defined units
- Section 4: Related work (0.5~1 page)
 - What others have done that is similar to what you are proposing
 - Be specific in what is different in your work from that which has been proposed previously
- Section 5: Conclusion (0.5~1 page)
 - What have you learned?
 - How have you evaluated that your project was a success?
 - What future work would you do, if you were to pursue this further?
- Section 6: References (at least 10 references, but I expect more like 20~30 references)
 - Use as many formal references as possible, and only use online material (e.g. a web site, wikipedia entry, etc) when absolutely necessary
- Appendix:
 - For those of you doing a group project, make sure to clearly state each person's contribution
 - Any material and/or results you have written that don't quite fit in the above section, but you think it is needed to better understand some part of your project

Using the guidelines above, you are likely going to have a final report that will range between 7 pages to 15 pages long. These are not hard limits, but guidelines. You should avoid having a report that is less than 5 pages, and one that is more than 20 pages.

You should submit the following documents in an archive (e.g. ZIP, TAR) named CS554_Final-Report_LastName-FirstName.{tar/zip} on BB before the deadline at 11:59PM 05-01-2023:

- Source document (e.g. Latex, MS Word DOC/DOCX)
- Final document (e.g. PDF)
- Source code (e.g. actual code, link to online GitHub repository)
- Workloads (e.g. actual input to your evaluation, link to online workloads)
- Raw data for performance evaluation (e.g. TXT, XLS, XLSX)
- Slides source (e.g. PPT, PPTX)
- Slides final (e.g. PDF)

If you have multiple people in a project, include every student's name in the filename, and only submit a single archive file for the entire group! The archive might get rather large, but it's important to get everything in the archive before submitting. If necessary, you can place some things online, and only include a link to the online source, such as workloads, raw data, source code, etc. You must include the final report and slides directly into the archive.