Sensemaking Copilot

Vision Document

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# Introduction

# Introduction

In the introduction, you summarize, in mostly non-technical terms, the real-world problem your project work addresses, limitations (or absence of) current solutions, how you intend to solve this problem using your idea and envisioned application/method, and the business needs or social motivation behind the project.

# Problem Description

Use a heading appropriate for your project context. An example problem description could be: “It takes too long to find an optimal configuration of a Unstructured Information Management Architecture (UIMA) pipeline given a set of possible configurations.” Try to be specific. For example, you could explain the real-world problem statement, why the problem occurs, why the current solution is not a good fit, and ways to overcome these limitations.

This should include a use case when possible! You will be referencing this use case throughout your documents, so think about this.

# Proposed Product/Solution

This section provides an overall framework that addresses the described problems. Use a heading appropriate for your project context. An example solution formulation could be: “A framework that supports the declarative description of a configuration space and automatically evaluates all the options, finding the best given some measure and labeled dataset.” It is essential that the proposed solution is related to the problem statement and includes a justification for how your solution resolves the issues mentioned. A comparison to the previous solution and an explanation of why the solution will work is also crucial to address.

# Scientific Hypotheses

This states the assumption underlying your proposed solution, i.e., why you think your solution will work. The hypotheses need to be testable assumptions. Think about if you could validate the hypotheses when you have the solution developed and indicate the evaluation metrics. Emphasizing why a particular metric is relevant to evaluate the proposed solution is also important. When you define the hypotheses, you should consider choosing the right metric for evaluating your assumptions. You can provide brief details here and then go into more detail in the forthcoming Design Document (e.g., a list of major features).

The evaluation metrics and proposed solutions to test the hypotheses can change as the project progresses and develops, but it is important to think about these items early to make sure your hypotheses are testable assumptions.

Any textual hypothesis formulation along the lines of what you have used in your 11-631 presentations is perfectly adequate. In a project context, typical formulations can be:

1. “Constructive”: It is possible to build such a framework.
2. “Formative”: The proposed solution is “fast /good enough.”
3. “Empirical”: The proposed solution will significantly outperform the SOA baseline measured by metric M.

# Major Features

In this section, you describe in more specific terms how the system features you plan to implement from the proposed solution to the problem (e.g., a list of major features or components of your solution). It is basically a short version of the design document. Consider numbering each major feature, as you can reference back to them in your Design Document. This is really important from a "traceability" perspective as it's easy to miss major features in future documents.

# Scope

Use this section to outline what will be the boundaries of your project. You want to be clear about what will be delivered at the end of the capstone. If there is something your project will specifically not do, it can be included here. For example, be clear on how much (or how little) data will be covered, whether your solution will meet certain run-time requirements in terms of responsiveness, whether your solution will be deployed as a web service or application or exist only as a code repository / Jupyter notebook, etc.

# Timeline

Include a proposed schedule of the proposed work. Take into consideration the timeline of the Capstone sequence.

# Terminology, Definitions, Acronyms, and Abbreviations

Include all definitions, acronyms, and abbreviations necessary to understand your solution easily. You can use a table to organize your definitions if necessary. For example, define the NFR’s, the metrics that are going to be used in the project, words associated with Data Structures (e.g., what is a feature vector?), terms used in the project (e.g., what is meant by a classifier?), etc.

# References

[C&I, 2016] Complicated & Important, If you have many references, they should go into a bibliography appendix such as this one!, Proceedings of Whatever, 67-98, 2016.

[Also-Important, 2016] Also-Important et al., How you format these individual references is not that important as long as it is consistent, Journal of Meaningful Studies, Vol. 16, 112-120, 2016.

# Reflection

Use this section to write a brief description of what you learned in the process of making this document: what will we do differently next time, what we learned from working in a team, etc. Then, reflect on the decision-making process when making this document. Reflection points to consider:

1. In what ways did creating a vision for your project help reduce ambiguities and establish a shared understanding among all stakeholders in a project?
2. How was the scope and vision of the project formulated? What factors did you consider in this process?
3. Did you consider any alternate approach but had to let go? Why did you pick the current approach over the discarded one?
4. How did you resolve team conflicts while coming up with the vision, if any? Were all possibilities thoroughly examined?
5. How effective was the team collaboration and communication while making this document? What did you learn about teamwork and communication?
6. How did you ensure that everyone was on the same page?
7. Were there any turning points in the process of creating the vision document? If so, please explain.
8. What would you do differently next time?

# Appendix

This section contains any additional information you’d like to preserve in this document for context. For example, consider having a Glossary or any additional materials you discovered or created in the process of making this document.

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# Writing, Style, and Formatting

### Overall writing requirements

Make sure your writing is brief and easy to understand. 1 to 3 paragraphs per section. The entire document (not including references and appendix) should be about 2 to 5 pages, although this is not a strict requirement and is adaptive to the variety and differences among projects. Please take time to edit and proofread your work before submitting it.

Proper citation practices must be followed, giving credit to original sources of information and ideas. All in-text citations should be clearly marked and correspond to a detailed reference list at the end of the document. This list should include all the sources cited within the text, formatted according to a consistent citation style.

### As always, if you produce subsections

Make sure that you use the proper sub-heading style.[[1]](#footnote-0)

### The same goes for Sub-sub-headings

This is important because the documents you produce may be read by people who are not close collaborators and for whom a well-structured document is helpful to understand things. Also, remember to cite the things you use [C&I, 2016].

1. It may not appear necessary at first but it is part of learning how to communicate your work. Sometimes you may want to add auxiliary information into footnotes such as this one. Examples include technical things like URLs, reference numbers of any kind or citations to papers and external documentation. [↑](#footnote-ref-0)