

Your Project Title Here

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Abstract

The abstract should be at most 150 words long, and should summarize briefly what your project is about. This includes motivation (2-3 sentences), what you did (2-3 sentences), and what the results are (1-2 sentences).

Introduction

The Introduction section (~1 page) describes the background and motivation behind your work, and provides an overview of the work and the findings. This section should

- describe the problem that your project is addressing. How bad is this problem and why is this an important problem to tackle? Do some research to get some statistics and facts about the problem to really motivate this work. (2 paragraphs)
- describe, at a high-level, what you did and what you found. What research questions are you trying to answer? What algorithms did you analyze? What dataset did you use? What are your performance measures? What are the potential real-world impact of this work? Finally, in 2-3 sentences, describe your key findings. (1 paragraph)
- emphasize your contributions. Why should people care about this work? Does this project introduce any novel techniques or reveal any unexpected findings? In bullet point forms, list 3-4 key contributions of your project.

Related Work

The Related Work section (~1 page) summarizes prior work for addressing the same problem or similar problems. In this section, you should include 3-4 paragraphs, where each paragraph contains a number of papers (2-3) grouped by a theme. You should aim to survey at least 10-12 papers. Whenever possible, synthesize the literature by describing multiple papers in aggregate, i.e., mentioning a common technique that multiple prior

work used. Never spend an entire paragraph describing a single paper. Just as an example, here's how you do citations (Shalev-Shwartz and Ben-David 2014; Block 1962; Novikoff 1962).

If you are writing a survey paper, this should be the main content of your report.

Methodology

If you are using a data set, this section first describes the dataset that you are analyzing. You should describe the size of the dataset(s) (i.e., number of examples), the meaning of the features, and other unique characteristics of the datasets. Explain why the datasets are appropriate for your problem and what are their limitations. Include the URL of the websites from which you downloaded the dataset(s). It would be an additional contribution if you can find multiple data sources, and merge them in meaningful way to create a new dataset.

Next, provide a description of the models/algorithms that you chose to implement. Describe in details how each algorithm works, including their mathematical formulations. Include pseudo-code, if necessary. If you had to extend an existing algorithm in order for it to work with the problem, describe in details what is different/new. Provide a rationale for why you selected these particular algorithms and how they are appropriate for the problem. If your goal is to compare the results of multiple algorithms, describe how you plan to do so here.

Results

If you have any preliminary results, describe them here. If not, you may describe what results you intend on generating.

References

- Block, H. D. 1962. The perceptron: A model for brain functioning. *Reviews of Modern Physics* 34(1):123–135.
- Novikoff, A. 1962. On convergence proofs for perceptrons. In *Symposium on Mathematical Theory of Automata*, 615–622.
- Shalev-Shwartz, S., and Ben-David, S. 2014. *Understanding Machine Learning: From Theory to Algorithms*. Cambridge University Press.