

AM221 Final Project Proposal

Taylor Killian & Leonhard Spiegelberg

February 22, 2016

Abstract

To be filled with an interesting summary of our work and results

1 Introduction

Introduce the problem and it's complexities

2 Background Information

2.1 Background

Here we'll want to add some information about Sparse regression, set functions and definitions of sub modular and super modular, Dictionary Selection, Greedy Methods, etc.

2.2 Related Work

A simple overview of prior work

3 Methods

Place holder section to begin to outline our work

4 Experiments

Hold for applying our methods

4.1 Results

The results of our algorithms against others

Algorithm 1 Notional algorithm

Figure out optimal arrangement of rows and columns of input data
while there's still time in the semester **do**
 if $f(p_k + s_k \lambda_i) < f(p_k)$ for some λ_i **then**
 $p_{k+1} = p_k + s_k \lambda_i$
 $s_{k+1} = s_k$
 else
 $p_{k+1} = p_k$
 $s_{k+1} = \alpha s_k$
 end if
end while
return VICTORIOUS

5 Conclusions & Future Work

5.1 Conclusions

We will have done it!

5.2 Future Work

Rule the world

References

- [1] Das, A., Kempe, D., (2011). Submodular meets Spectral: Greedy Algorithms for Subset Selection, Sparse Approximation and Dictionary Selection. *Proceedings of the 28th International Conference on Machine Learning*.
- [2] Cevher, V., Krause, A., (2011). Greedy Dictionary Selection for Sparse Representation. *Selected Topics in Signal Processing, IEEE Journal of 5* (5), pp. 979 - 988.
- [3] Doshi-Velez, F., Williamson, S., (2015). Restricted Indian Buffet Processes. *In submission*. arXiv:1508.06303 [stat.ME]