Projects

Some project examples

Project examples

Posters

The Heilmeier Catechism

Proposal template structure

- Introduction/Background(Proposed)

- Methods(Expected)

- Results (what results are you trying to achieve?)

- Discussion (Best Outcome, What it would mean, What is next…..)

Template

- Introduction
    - What is the **Motivation** or **Problem** in your project?
    - What people already have done (references are important)?
    - What are you trying to do to tackle with your project motivation or problem?
- Results and discussion
    - Visualization (figures, plots, tree based visualization, interactive visualization)
    - Explain things which you cannot explain them using visualization (**DO NOT** be descriptive, be as concise as possible)
    - Visualization (figures, plots, tree based visualization, interactive visualization)
- Conclusion
    - What is your major achievement?
    - Future work?

Some techniques

- If you are using distance in your predictive model (working with data directly such as PCA, Regression, …), make sure to normalize your data over **features.**
- If your model is behaving poorly (not very accurate result)
  - consider adding more features to your data (**Feature Engineering**). One example of adding feature is to use polynomial expansion.
  - Take your data to another feature space and work with that feature space to construct your predictive model (PCA, Kernel trick).
  - Regularization is very important.
  - Implement Cross-Validation (CV) to improve your predictive model hyper-parameters such as multiplier for regularization.
  - Visualize your data. Visualization would help you to understand your data better. If you have high dimensional dataset, use dimensionality reduction technique to visualize the data.