mini_project_v_8

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1 Introduction to Probabilistic Graphical Models

1.1 Mini Project

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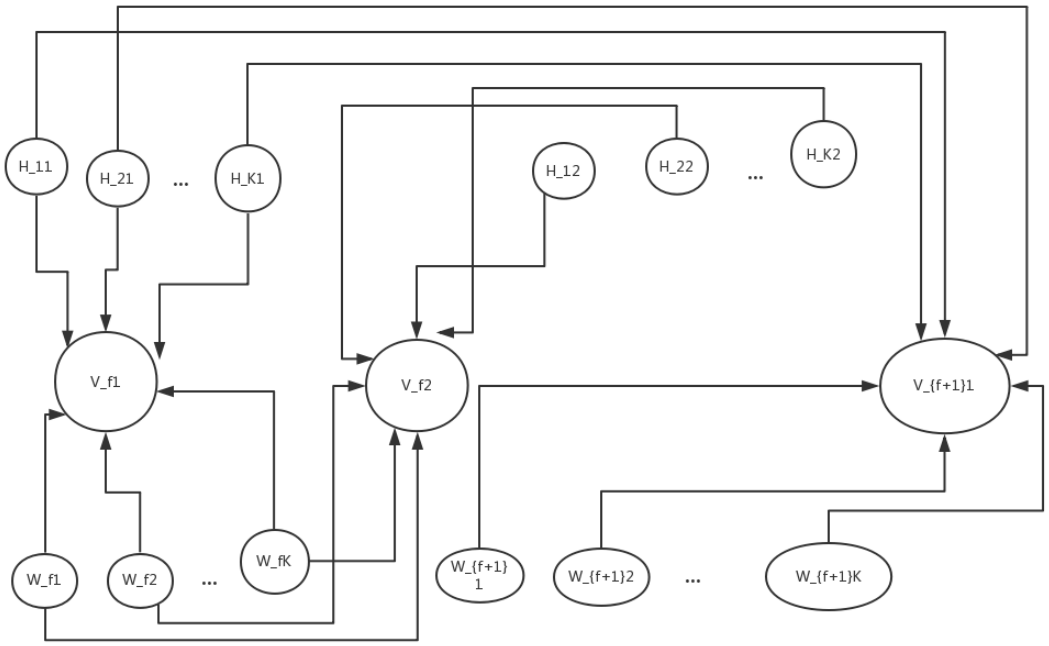
```
In [10]: %matplotlib inline
         import numpy as np
         from scipy.linalg import norm
         import matplotlib.pyplot as plt
         import networkx as nx
         import pyparsing
         from IPython.display import Math
         import copy
         import math
         from matplotlib.patches import Ellipse
         import scipy.io as sio
         from numba import njit
         from matplotlib import gridspec
         from tqdm import tqdm
         from numba import jit
         import time


         # choose a large font size by default and use tex for math
         fontsize = 10
         params = {'axes.labelsize': fontsize + 2,
               'font.size': fontsize + 2,
               'legend.fontsize': fontsize + 2,
               'xtick.labelsize': fontsize,
               'ytick.labelsize': fontsize}
         plt.rcParams.update(params)
```

Question 1.1 : Draw the directed graphical model

```
In [11]: # Draw the directed graphical model: without S
         from IPython.display import Image
         Image("graph_noS.jpg")
```

Out[11]:



The above directed graph is When S is not introduced. We only draw three elements of V, for the rest, the same pricipal applies. The node represented by ... should follow the same pricipal as other nodes nearby.

When S is introduced, the graph will be as follows:

In [12]:
```
### Draw the directed graphical model: with S introduced
Image("graphWithS.jpg")
```

Out[12]: