



## Computer Science Final Year Project

### Weekly Progress Report

Week Number: 11

Date: 16<sup>th</sup> October 2021

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Supervisor Name:	Dr Ajaz Ahmad Bhat		
Project Title:	An episodic memory approach to continual learning systems.		

This week's objectives and progress: (specify experiments' methodology, aim, objectives and results obtained if any)

#### 1. Learn and understand EMN codes

For this week, I continued on understanding the EMN codes. I tried learning the lines of codes whilst also searching google for terms and functions I do not understand. However, I am unable to find, or download the BABI datasets. Hence, I tried to use a built-in torchtext datasets such as IMDB. It turns out the EMN codes are only optimized for the BABI Datasets.

In the **helpers.py** where the datasets are imported:

```
from collections import namedtuple

import torch
from torchtext.datasets import IMDB

def dataloader(batch_size, memory_size, task, joint, tenk):
    train_iter, valid_iter, test_iter, vocab = IMDB.iters(
        batch_size=batch_size, memory_size=memory_size, task=task,
        joint=joint, tenK=tenk, device=torch.device("cpu"))
```

```

        return train_iter, valid_iter, test_iter,
        train_iter.dataset.fields['query'].vocab

def get_params(config):
    Params = namedtuple('Params', [
        'embed_size',
        'memory_size',
        'num_hops',
        'use_bow',
        'use_lw',
        'use_ls',
    ])
    params = Params(
        config.embed_size, config.memory_size, config.num_hops,
        config.use_bow,
        config.use_lw, config.use_ls)
    return params

def get_fname(config):
    fname = "_".join(
        str(x) for x in [
            config.num_epochs,
            config.lr,
            config.batch_size,
            config.embed_size,
            config.memory_size,
            config.num_hops,
            config.joint,
            config.tenk,
            config.use_bow,
            config.use_lw,
            config.use_ls,
        ]) + '.task' + str(config.task)
    return fname

```

Error Output:

```

C:\Users\User\AppData\Local\Programs\Python\Python39\python.exe "D:/User/Sem Aug 2021/SS-4290/PyTorch/cli.py"
#! preparing data...
Traceback (most recent call last):
  File "D:\User\Sem Aug 2021\SS-4290\PyTorch\cli.py", line 37, in <module>
    cli()
  File "C:\Users\User\AppData\Local\Programs\Python\Python39\lib\site-packages\click\core.py", line 1137, in __call__
    return self.main(*args, **kwargs)
  File "C:\Users\User\AppData\Local\Programs\Python\Python39\lib\site-packages\click\core.py", line 1062, in main
    rv = self.invoke(ctx)
  File "C:\Users\User\AppData\Local\Programs\Python\Python39\lib\site-packages\click\core.py", line 1404, in invoke
    return ctx.invoke(self.callback, **ctx.params)
  File "C:\Users\User\AppData\Local\Programs\Python\Python39\lib\site-packages\click\core.py", line 763, in invoke
    return __callback(*args, **kwargs)
  File "D:\User\Sem Aug 2021\SS-4290\PyTorch\cli.py", line 33, in cli
    run(config)
  File "D:\User\Sem Aug 2021\SS-4290\PyTorch\main.py", line 72, in run
    train_iter, valid_iter, test_iter, vocab = dataloader(config.batch_size, config.memory_size,
  File "D:\User\Sem Aug 2021\SS-4290\PyTorch\helpers.py", line 8, in dataloader
    train_iter, valid_iter, test_iter, vocab = IMDB().iters(
AttributeError: 'tuple' object has no attribute 'iters'

Process finished with exit code 1

```

I would like to discuss the error during the meeting later.

Apologies for the slow progress, been juggling with assignments and tests this week and the weeks to come.

End

Overall Progress: (summaries any findings; any achievements, challenges, difficulties encountered)

Findings/Achievements:

1. Able to understand episodic memory.
2. Able to understand memory networks.
3. Able to understand EMN approach to memory-augmented networks.
4. Able to understand MEMO approach to memory-augmented networks.
5. Learn basic of PyTorch
6. Partially understand the implementation of EMN.

Challenges/Difficulties:

1. Transform my understanding into codes.
2. Coding in general as I may take time to learn how to do perform certain things.

Next week's objectives:

To be decided every weekly meetings.

Date:	16/10/21	Student's Signature:	<i>SYAUQI</i>
Supervisor's Comments:-			
Date:		Supervisor's Signature:	