

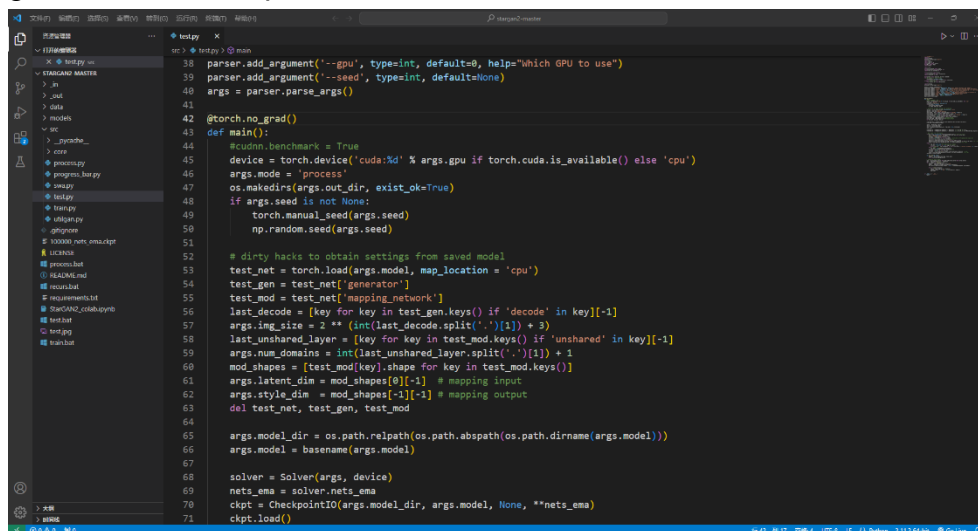
## 10.31-11.6

In this phase, my main research direction is to explore how to achieve expression conversion using machine learning techniques. I searched for suitable machine learning models on multiple open source websites with the goal of finding a model that could accurately transform mouth expressions. Eventually, I found a seemingly ideal model using the StarGAN2 pattern. I downloaded the model and tried it out in my Google Colab environment.

However, after I ran all the code, I faced a confusing problem: there were no generated results to show, along with no error alerts. This put me in a situation where I didn't know what to do. After repeated fruitless attempts, I decided to invite my colleague Mayra to work on a detailed tutorial to solve these technical difficulties. We found that Google Colab's GPU resources were insufficient to support our machine learning needs, so we turned to using the terminal and conda that came with our computers to experiment in Visual Studio Code.

Unfortunately, despite our attempts, including downloading the necessary software for my RTX 3060 graphics card, my computer still crashed after setting up the environment and running the code. Faced with this set of technical challenges, I decided to turn to the alternate plan of using Midjourney and Runway for video generation.

This phase was challenging, but it greatly enriched my technical experience and made me more aware of all the practical problems I encountered in real-world applications. Through continuous experimentation and exploration, I have gained a deeper understanding of machine learning and video generation techniques.



```
38 parser.add_argument('--gpu', type=int, default=0, help="which GPU to use")
39 parser.add_argument('--seed', type=int, default=None)
40 args = parser.parse_args()
41
42 @torch.no_grad()
43 def main():
44     torch.backends.cudnn.benchmark = True
45     device = torch.device('cuda:%d' % args.gpu if torch.cuda.is_available() else 'cpu')
46     args.device = 'process'
47     os.makedirs(args.out_dir, exist_ok=True)
48     if args.seed is not None:
49         torch.manual_seed(args.seed)
50         np.random.seed(args.seed)
51
52     # dirty hacks to obtain settings from saved model
53     test_net = torch.load(args.model, map_location='cpu')
54     test_gen = test_net['generator']
55     test_mod = test_net['mapping_network']
56     last_decode = [key for key in test_gen.keys() if 'decode' in key][-1]
57     args.img_size = 2 ** (int(last_decode.split('.')[1]) + 3)
58     last_unshared_layer = [key for key in test_mod.keys() if 'unshared' in key][-1]
59     args.num_domains = int(last_unshared_layer.split('.')[1]) + 1
60     mod_shapes = [test_mod[key].shape for key in test_mod.keys()]
61     args.latent_dim = mod_shapes[0][-1] # mapping input
62     args.style_dim = mod_shapes[-1][-1] # mapping output
63     del test_net, test_gen, test_mod
64
65     args.model_dir = os.path.relpath(os.path.abspath(os.path.dirname(args.model)))
66     args.model = basename(args.model)
67
68     solver = Solver(args, device)
69     nets_ema = solver.nets_ema
70     ckpt = CheckpointIO(args.model_dir, args.model, None, **nets_ema)
71     ckpt.load()
```

```
文件 修改 视图 插入 代码执行程序 工具 帮助 上次修改日期: 11月10日
+ 代码 + 文本
[] | 1x
data 1.77MB _out README.md requirements.txt train@colab.ipyth test.jpg
_in models process.bat require.bat src test.bat
[] | python src/test.py --source ./test.jpg --model models/20000_net_sma.dpt
2023-11-10 13:48:40.884943: E tensorflow/compiler/xla/stream_executor/cuda/cuda_dnn.cc:9342] Unable to register cuDNN factory: Attempting to register factory for plugin cuDNN when one has already been registered
2023-11-10 13:48:40.886966: E tensorflow/compiler/xla/stream_executor/cuda/cuda_fft.cc:950] Unable to register cuFFT factory: Attempting to register factory for plugin cuFFT when one has already been registered
2023-11-10 13:48:40.889042: E tensorflow/compiler/xla/stream_executor/cuda/cuda_blas.cc:1159] Unable to register cuBLAS factory: Attempting to register factory for plugin cuBLAS when one has already been registered
Traceback (most recent call last):
  File "/content/stragml/src/test.py", line 117, in <module>
    main()
  File "/usr/local/lib/python3.10/dist-packages/torch/utils/_contextlib.py", line 115, in decorate_context
    return func(*args, **kwargs)
  File "/content/stragml/src/test.py", line 53, in main
    test_net = torch.load(args.model)
  File "/usr/local/lib/python3.10/dist-packages/torch/serialization.py", line 1008, in load
    return _legacy_load(opened_file, map_location, pickle_module, **pickle_load_args)
  File "/usr/local/lib/python3.10/dist-packages/torch/serialization.py", line 1264, in _legacy_load
    typed_storages._untyped_storages_set_from_file(
  File "/usr/local/lib/python3.10/dist-packages/torch/serialization.py", line 1264, in _legacy_load
    typed_storages._untyped_storages_set_from_file(
RuntimeError: unexpected EOF, expected 659509 more bytes. The file might be corrupted.

[] | python src/test.py --source test.jpg --model models/20000_net_sma.dpt --ref 2
2023-11-10 13:50:21.120877: E tensorflow/compiler/xla/stream_executor/cuda/cuda_dnn.cc:9342] Unable to register cuDNN factory: Attempting to register factory for plugin cuDNN when one has already been registered
2023-11-10 13:50:21.122881: E tensorflow/compiler/xla/stream_executor/cuda/cuda_fft.cc:950] Unable to register cuFFT factory: Attempting to register factory for plugin cuFFT when one has already been registered
2023-11-10 13:50:21.127781: E tensorflow/compiler/xla/stream_executor/cuda/cuda_blas.cc:1159] Unable to register cuBLAS factory: Attempting to register factory for plugin cuBLAS when one has already been registered
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RuntimeError: unexpected EOF, expected 1541096 more bytes. The file might be corrupted.

[]
```

## Machine learning test