# 概述

<https://m.toutiao.com/article/7220674479016526375/?app=news_article&timestamp=1681211197&use_new_style=1&req_id=20230411190636CC84AAF4B609E4023569&group_id=7220674479016526375&share_token=67CDA720-2BE3-402F-8D7C-0D1529A6036B&tt_from=weixin&utm_source=weixin&utm_medium=toutiao_ios&utm_campaign=client_share&wxshare_count=1>

试玩地址：

https://reverie.herokuapp.com/arXiv\_Demo/#

论文地址：

<https://arxiv.org/abs/2304.03442>

代码地址：

<https://github.com/mkturkcan/generative-agents>

# 环境安装

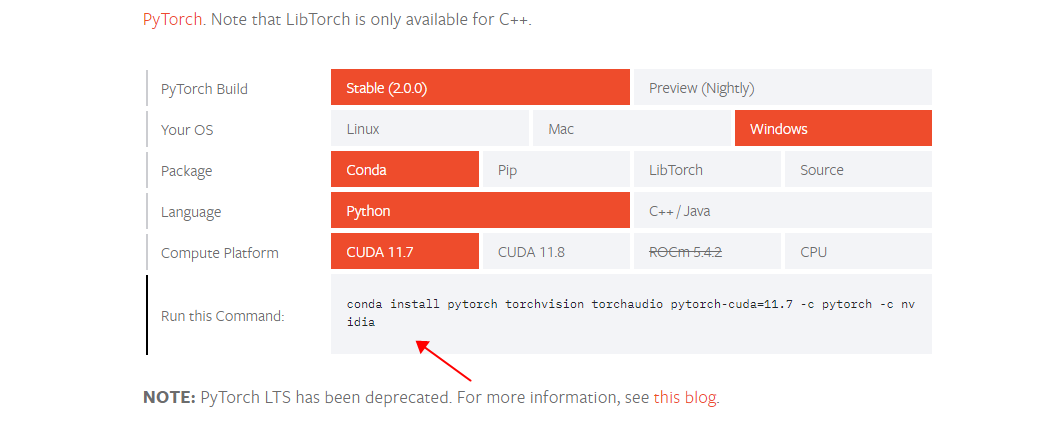
1. Anaconda3安装 <https://mirrors.tuna.tsinghua.edu.cn/anaconda/archive/>
2. nvidia-smi 命令查看cuda版
3. 安装cuda 用 nvcc -V 验证(这个一定要先安装，否则pytorch不会装gpu版本)

conda install cuda -c nvidia/label/cuda-11.7.0

1. 安装gpu版本的pytorch，以管理员运行Anaconda Powershell Prompt执行

conda remove pytorch pytorch-cpu

conda install pytorch torchvision torchaudio pytorch-cuda=11.7 -c pytorch -c nvidia

<https://pytorch.org/get-started/locally/> 得到命令执行，nvidia-smi 命令查看cuda版本 

1. 验证： python -m torch.utils.collect\_env
2. 如果找不到jupyternotebook， 以管理员打开 anaconda navigtor再安装
3. 安装包

conda install -c conda-forge ipywidgets

<https://ipywidgets.readthedocs.io/en/stable/user_install.html>

conda install -c conda-forge openai

<https://anaconda.org/conda-forge/openai>

conda install -c conda-forge sentence-transformers

<https://anaconda.org/conda-forge/sentence-transformers>

conda install -c conda-forge python-dotenv

conda install -c conda-forge libgomp

# 模型选择

<https://huggingface.co/declare-lab/flan-alpaca-large>

3B参数需要12g gpu显卡

700m 可以6g gpu

# 执行nodebook

打开Jupyter book，上传generative\_model\_simple.ipynb执行

# 环境

龙与地下城 凡达林城镇 龙与地下城第五版

https://forgottenrealms.fandom.com/wiki/Phandalin https://forgottenrealms.fandom.com/wiki/Stonehill\_Inn

环境描述

|  |  |  |
| --- | --- | --- |
| Phandalin Town Square | 城镇广场 |  |
| Stonehill Inn | 客栈 | 凡达林的村民，从矿工到农民，都在公共休息室里放松身心，这里成了听当地八卦和故事的好地方 |
| Barthen's Provisions | 杂货店 | 从黎明一直营业到黄昏。[[1]](https://forgottenrealms.fandom.com/wiki/Barthen%27s_Provisions#cite_note-LMoP-pp-4-6-7-12-14-1)它出售低成本贸易商品，例如冒险装备，以及[口粮](https://forgottenrealms.fandom.com/wiki/Ration)和其他简单商品 |
| Edermath Orchard | 果园小屋 | 一片果园旁的整洁小屋 |
| Lionshield Coster | 贸易站 | 在这个不起眼的贸易站前门上方挂着一个标志，形状像木盾，上面画着一只蓝色的狮子。 这座建筑归 Lionshields 所有，Lionshields 是一家位于雅塔尔市的商业公司，位于以东一百多英里处。 他们将制成品运往凡达林和整个地区的其他小型定居点，但这个前哨基地遭到盗匪袭击。 凡达林的最新狮盾大篷车从未到货 |
| Phandalin Miner's Exchange | 矿工交易所 | 矿工交易所是一个交易站，当地矿工可以在这里称重、测量和支付他们有价值的发现。 在没有任何地方领主或权威的情况下，交易所还充当一个非官方的记录办公室，登记对该地区周围各种溪流和挖掘的索赔。 凡达林并没有真正的淘金热，但附近的溪流和山谷中隐藏着足够多的财富，足以养活大量的独立探矿者。 该交流中心是结识常在凡达林周边乡村游玩的人们的好地方。 公会会长是一位雄心勃勃、精于算计的人类女性，名叫哈莉亚·桑顿 (Halia Thornton)。 |
| Alderleaf Farm | 农场 | 乐于助人的半身人农夫 Qelline Alderleaf 拥有的农场 |
| Shrine of Luck | 幸运神殿 | 凡达林唯一的神殿是一座用附近废墟中的石头建造的小神殿。 它是献给幸运女神 Tymora 的。 |
| The Sleeping Giant | 沉睡巨人 | 这个破旧的酒屋是凡达林主要街道尽头的一个肮脏、危险的水坑。 它是 Redbrand 暴徒经常光顾的地方，由一个名叫 Grista 的脾气暴躁的女矮人经营。 |
| Townmaster’s Hall | 议会大楼 | 议会大楼有坚固的石墙、倾斜的木屋顶和后面的钟楼。 前门旁边的板上贴着一张用通用语写的告示。 上面写着：“奖励——Wyvern Tor 附近的兽人！ 那些想要面对兽人威胁的人应该向内询问。” 该通知带有该镇的印章和难以辨认的签名。 |
| Tresendar Manor | 庄园城堡 | 一座破败的庄园。 Redbrands 在凡达林的基地是 Tresendar 庄园下的地牢。 在庄园被毁之前，它的地窖可以安全储存食物和水，以防庄园遭到袭击，而毗邻的地下室则为 Tresendar 家族的已故成员提供了安息之所。 从那以后，Redbrands 扩大了地窖以适应他们自己的目的，增加了奴隶围栏、作坊和营房 |

# 人物

|  |  |  |
| --- | --- | --- |
| Toblen Stonehil | 托布伦斯通希尔 | Toblen 拥有一个贸易站 |
| Daran Edermath | 达兰埃德马特 | 达兰 (Daran) 是一位退休的冒险家，他住在苹果园旁一间整洁的小屋里。 Daran 是一个身体健康、满头银发的半精灵，已经一百多岁了，他是一名战士，曾在远在东南方的 Dragon Coast 的土地上担任元帅和传令官多年。 退役之后，他回到了原来的家乡无冬地区。 |
| Linene Graywind | 亚麻灰风 | Linene 经营一家贸易站。 |
| Halia Thornton | 哈利亚桑顿 | 哈莉亚是一位雄心勃勃、精于算计的人类女性。 她是凡达林矿工交易所的公会会长，这是一个贸易站，当地矿工在这里称重、测量并支付他们有价值的发现。 在她试图建立矿工交易所作为该镇最接近管理机构的事物时，她不仅仅是一个简单的商人 |
| Qelline Alderleaf | Qelline 桤木叶 | Qelline 是一位四十五岁的聪明女性半身人，也是一位务实的农民，似乎对镇上发生的一切了如指掌。 她是一位好心的主人，如果角色们不想留在石山旅馆，她愿意让他们留在她的干草棚里。 |
| Sister Garaele | 嘉蕾儿修女 | Garaele 修女是 Tymora 的精灵牧师和哈珀特工 |
| Harbin Wester | 哈尔滨西 | 哈尔滨是凡达林的镇长。 一种华而不实的古老食物。 凡达林没有正常运作的政府，但镇民每年都会选出一名镇长。 镇长担任小纠纷的法官，并保留任何需要保留的记录。 |
| Terrill Bloodscar | 泰瑞尔血痕 | Terrill是一个人类恶棍。 他穿着一件肮脏的猩红色斗篷。 他是 Redbrand 恶棍的成员。 他不喜欢冒险者，想要抢劫和杀死他们 |
| Conrad Scarface | 康拉德疤面煞星 | 康拉德是一个人类痞子。 他穿着一件肮脏的猩红色斗篷。 他是 Redbrand 恶棍的成员。 他不喜欢冒险者，想要抢劫和杀害他们。 |
| Nellie Starsmith | 内莉·斯塔史密斯 | 内莉是一个人类恶棍。 她穿着一件肮脏的猩红色斗篷。 她是 Redbrand 恶棍的成员。 她不喜欢冒险者，想要抢劫他们并杀死他们 |
| Valerie Grinblade | 瓦莱丽·格林布莱德 | 瓦莱丽是一个人类恶棍。 她穿着一件肮脏的猩红色斗篷。 她是 Redbrand 恶棍的成员。 她不喜欢冒险者，想要抢劫他们并杀死他们 |

# 日计划生成

组织提示词示例

You are Toblen Stonehill. Toblen owns a trading post. You just woke up in the town of Phandalin and went out to the Town Square. The following people live in the town: Toblen Stonehill, Daran Edermath, Linene Graywind, Halia Thornton, Qelline Alderleaf, Sister Garaele, Harbin Wester, Terrill Bloodscar, Conrad Scarface, Nellie Starsmith, Valerie Grinblade. What is your goal for today? Be brief, and use at most 20 words and answer from your perspective.

## 生成(7000w)：

|  |  |  |
| --- | --- | --- |
| Toblen Stonehill | Toblen's goal today is to learn more about the town and its people, such as the history of the trading post and the many local businesses. |  |
| Daran Edermath | Daran's goal today would be to find something useful and enjoyable in Phandalin. |  |
| Linene Graywind | I'm looking for a way to bring some new products to the town. |  |
| Halia Thornton | "Promote this trading post to become the closest thing the town has to a governing authority, ensuring that local miners have their valuable finds weighed, measured, and paid out." |  |
| Qelline Alderleaf | My goal is to visit the Inn and give a lecture on agriculture. |  |
| Sister Garaele | I am looking for someone in the town to help me in my quest to find the lost lost loot that will lead to the end of the night. |  |
| Harbin Wester | Hello! My goals for today are to become better acquainted with the town of Phandalin, learn the history of Phandalin, and practice my townmaster duties. |  |
| Terrill Bloodscar | Terrill Bloodscar wanted to kill the adventurers near town square to avoid being captured by Scarface and the Redbrands.  Conrad Scarface Conrad Scarface would aim to rob an adventurer and kill them. |  |
| Conrad Scarface | I goal for today is to meet my goal for tomorrow: to become the greatest ruffian in town. |  |
| Nellie Starsmith | I want to befriend Nellie Starsmith in Phandalin. She has a sharp wit and looks sharp in her scarlet cloak while playing in town. She's a powerful figure who takes pride in her skills as an armed robber. She's dedicated to defending the town and stealing from adventurers. |  |
| Valerie Grinblade | Valerie's goal: to get the most points for the redbrand ruffians by catching every opponent. |  |

## 生成3B：

|  |  |  |
| --- | --- | --- |
| Toblen Stonehill | Buying a new book. This will help me improve my research on the trade secrets of the Phandalin Trade Company. |  |
| Daran Edermat | Become more familiar with the town. ### - Welcome to Phandalin. |  |
| Linene Graywind | Linene's goal for today is to increase retail sales at the trading post by offering a special discount to customers who bring in a referral. |  |
| Halia Thornton | Start a conversation with the other players in the Town Square. |  |
| Qelline Alderleaf | The goal for me is to learn more about the town and its inhabitants. |  |
| Sister Garaele | My goal for today is to collect evidence of Harper activities in Phandalin. |  |
| Harbin Wester | Harbin's goal for today is to greet the townsfolk and announce the opening of Phandalin's new cafe. He'll also investigate the strange noises emanating from the town square in search of new customers. |  |
| Terrill Bloodscar | My goal for today is to kill and rob adventurers in the nearby forest. |  |
| Conrad Scarface | I'm going to take a look around the town square and see what I can find out. |  |
| Nellie Starsmith | Go to the Baron's mansion, kill a hostage, and get myself out of Phandalin alive. |  |
| Valerie Grinblade | My goal today is to terrorize the adventurers in Phandalin |  |

# 行动生成

结合之前的计划，加上位置,加上各个人物的描述，时间，获取下一小时的动作，示例：

You are Toblen Stonehill. Toblen owns a trading post. You are planning to: My goal is to make everyone at the town feel welcomed and welcome.. You are currently in Phandalin Town Square with the following description: Town square of the town of Phandalin.. It is currently 8:00. The following people are in this area: Toblen Stonehill, Daran Edermath, Linene Graywind, Halia Thornton, Qelline Alderleaf, Sister Garaele, Harbin Wester, Terrill Bloodscar, Conrad Scarface, Nellie Starsmith, Valerie Grinblade. You can interact with them. You know the following about people: Toblen Stonehill: Toblen owns a trading post.. Daran Edermath: Daran is a retired adventurer who lives in a tidy little cottage beside an apple orchard. A fit, silver-haired half-elf well over a hundred years old, Daran is a fighter who served as a marshal and herald for many years in the lands of the Dragon Coast, far to the southeast. Upon retiring, he returned to the Neverwinter region, his original home.. Linene Graywind: Linene runs a trading post.. Halia Thornton: Halia is an ambitious and calculating human woman. She is the guildmaster of Phandalin Miner’s Exchange, a trading post where local miners have their valuable finds weighed, measured, and paid out. In her attempts to establish the Miner's Exchange as the closest thing the town has to a governing authority, she acts as more than a simple merchant.. Qelline Alderleaf: Qelline is a wise female halfling of forty-five, and is a pragmatic farmer who seems to know everything that goes on in town. She is a kind host, and is willing to let the characters stay in her hayloft if they don't want to stay at the Stonehill Inn.. Sister Garaele: Sister Garaele is an elf cleric of Tymora and a Harper agent.. Harbin Wester: Harbin is the townmaster of Phandalin. A pompous, old food. Phandalin has no functioning government, but the townsfolk elect someone to serve as townmaster each year. The townmaster serves as a judge in minor disputes and keeps any records that need to be kept.. Terrill Bloodscar: Terrill is a human ruffian. He wears a grimy scarlet cloak. He is a member of the Redbrand ruffians. He doesn't like adventurers, and wants to rob and kill them.. Conrad Scarface: Conrad is a human ruffian. He wears a grimy scarlet cloak. He is a member of the Redbrand ruffians. He doesn't like adventurers, and wants to rob and kill them.. Nellie Starsmith: Nellie is a human ruffian. She wears a grimy scarlet cloak. She is a member of the Redbrand ruffians. She doesn't like adventurers, and wants to rob and kill them.. Valerie Grinblade: Valerie is a human ruffian. She wears a grimy scarlet cloak. She is a member of the Redbrand ruffians. She doesn't like adventurers, and wants to rob and kill them.What do you do in the next hour? Use at most 10 words to explain.

提示太长

Token indices sequence length is longer than the specified maximum sequence length for this model (842 > 512). Running this sequence through the model will result in indexing errors

## 生成7000w

|  |  |  |
| --- | --- | --- |
| Toblen Stonehill | Toblen Stonehill: Explore the town. |  |
| Daran Edermath | Daran Edermath: Set out in search of a useful and enjoyable experience in Phandalin.. |  |
| Linene Graywind | I plan to bring some new products to Phandalin. |  |
| Halia Thornton | Halia Thornton: Promote Phandalin Miner’s Exchange |  |
| Qelline Alderleaf | Qelline Alderleaf: I visited the Stonehill Inn and gave a lecture on agriculture. |  |
| Sister Garaele | I dedicated the next hour to identifying the lost loot and solving the mysteries hidden in Phandalin Town Square. |  |
| Harbin Wester | Harbin Wester: I had first learned the history of Phandalin. |  |
| Terrill Bloodscar | Terrill Bloodscar planned to set off on a mission to rob and kill the adventurers near town square, avoiding being captured by Scarface and the Redbrands. |  |
| Conrad Scarface | Toblen Stonehill, Harbin Wester, Nellie Starsmith, Toblen Scarface, Nellie Hornblade, Valerie Grinblade, Toolghta Thornton |  |
| Nellie Starsmith | I had a conversation with Harbin Wester. |  |
| Valerie Grinblade | I was at 7:30 am. In the town square, there was Valerie Grinblade, red-haired ruffian wearing a grimy scarlet cloak and planning to rob and kill every opponent. |  |

## 生成3B

|  |  |  |
| --- | --- | --- |
| Toblen Stonehill | I went to the bookstall near Town Square to buy a new book. |  |
| Daran Edermath | I explored the town. Observed the people. Take notes. |  |
| Linene Graywind | Linnet had to remain alert and be prepared for any potential interactions with the ruffians in the next hour. |  |
| Halia Thornton | I wanted to have a chat. I was free any time after 8pm. |  |
| Qelline Alderleaf | I have been eating Toblen, Sister Garaele, Harbin, Halia, Terrill, and Conrad. |  |
| Sister Garaele | I investigated the town square, identified criminals, snooped for evidence, and took pictures for the Harpers. |  |
| Harbin Wester | Unveiled new cafe, investigated noises. Greeted townsfolk, helped find new customers. |  |
| Terrill Bloodscar | I entered the nearby forest and set up camp with the Redbrand ruffians. I stole their loot and waited for them to stumble into the square. I then joined them in their assault on the town, declaring my mission accomplished. |  |
| Conrad Scarface | I took a look around town and saw who else was around. |  |
| Nellie Starsmith | I killed a Redbrand hostage. I went to the Barons mansion. I killed a Redbrand guard. I made it out of Phandalin alive. |  |
| Valerie Grinblade | I engage in various mischief to amuse my gang of ruffians and terrorize the adventurers of Phandalin. |  |

# 记忆

记忆流 自然语言描述+创建时间戳+访问时间戳

检索(Retrieval) recency+importance+relevance

反思(Reflection)

# 摘要

How would one describe Eddy’s core characteristics  
given the following statements?  
- Eddy Lin is a student at the Oak Hill College  
studying music theory and composition  
- Eddy Lin is working on a new music composition  
[. . . ]

e queries “[name]’s current daily  
occupation” and “[name’s] feeling about his recent progress in life”

The agent’s name, age,和上面查询的这三个合在一起形成摘要，定期生成

# 规划

一天的规划 姓名特征最近行动摘要 前一个的摘要 预测

一小时的plan 15分钟的plane 5分钟的plan

# 观察与反馈

[Agent’s Summary Description]  
It is February 13, 2023, 4:56 pm.  
John Lin’s status: John is back home early from  
work.  
Observation: John saw Eddy taking a short walk  
around his workplace.  
Summary of relevant context from John’s memory:  
Eddy Lin is John’s Lin’s son. Eddy Lin has been  
working on a music composition for his class. Eddy  
Lin likes to walk around the garden when he is  
thinking about or listening to music.  
Should John react to the observation, and if so,  
what would be an appropriate reaction?

Summary of relevant context 来自“What is [observer]’s relationship  
with the [observed entity]?” and “[Observed entity] is [action status  
of the observed entity]”

# 对话

# 改造

1. 增加Memory类，创建时间戳 访问时间戳 自然语言描述 importance(创建时大模型生成) 嵌入向量

On the scale of 1 to 10, where 1 is purely mundane  
(e.g., brushing teeth, making bed) and 10 is  
extremely poignant (e.g., a break up, college  
acceptance), rate the likely poignancy of the  
following piece of memory.  
Memory: buying groceries at The Willows Market  
and Pharmacy  
Rating: <fill in>

1. Recency计算 衰减因子0.99 就是衰减率0.01，每小时衰减百分之一math.pow(0.99,,（当前时间-访问时间）)
2. 相关性计算 文本嵌入向量余弦相似度

import openai, numpy as np

resp = openai.Embedding.create(

input=["feline friends say", "meow"],

engine="text-similarity-davinci-001")

embedding\_a = resp['data'][0]['embedding']

embedding\_b = resp['data'][1]['embedding']

similarity\_score = np.dot(embedding\_a, embedding\_b)

<https://blog.51cto.com/ydlin/4578290>

https://blog.paperspace.com/sentence-embeddings-pytorch-lightning/

1. 反思

那最近100条记忆，然大模型提出三个问题，对每个问题获取相关性的记忆，交给大模型洞察

Statements about Klaus Mueller  
1. Klaus Mueller is writing a research paper  
2. Klaus Mueller enjoys reading a book  
on gentrification  
3. Klaus Mueller is conversing with Ayesha Khan  
about exercising [...]  
What 5 high-level insights can you infer from  
the above statements? (example format: insight  
(because of 1, 5, 3))

将反思的结果存储到memory stream

1. 计划
2. 观察反馈

# OpenAI提示词

https://help.openai.com/en/articles/6654000-best-practices-for-prompt-engineering-with-openai-api