

「AI모델 환경 설치가이드」

(2-058) AI기반 신호최적화를 위한 데이터

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과제명 : AI 기반 신호 최적화를 위한 데이터

데이터명 : AI 기반 신호 최적화를 위한 데이터

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II 시험환경로그

Chapter I

AI모델 환경 설치 가이드



1. Anaconda

링크 : <https://www.anaconda.com/products/distribution#download-section>

The screenshot displays the Anaconda Distribution website. At the top, the Anaconda logo is on the left, and a navigation menu with links for Products, Pricing, Solutions, Resources, Partners, Blog, and Company is in the center. A 'Contact Sales' button is on the right. The main content area features the text 'Individual Edition is now' followed by 'ANACONDA DISTRIBUTION' in large green letters. Below this, it says 'The world's most popular open-source Python distribution platform'. To the right, a card titled 'Anaconda Distribution' contains a green 'Download' button with a Windows icon. Below the button, it specifies 'For Windows' and 'Python 3.9 • 64-Bit Graphical Installer • 621 MB'. At the bottom of the card, it says 'Get Additional Installers' with icons for Windows, macOS, and Linux. Below the main content, there are three white boxes with green icons and text: 'Open Source' (book icon), 'User-friendly' (people icon), and 'Trusted' (checkmark icon). Each box has a short description. At the bottom of the page, there is a 'Features' section header and a dark blue footer with a cookie notice, a 'Privacy Policy' link, an 'Accept' button, and a chat icon.

ANACONDA


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Individual Edition is now

ANACONDA DISTRIBUTION

The world's most popular open-source Python distribution platform




Anaconda Distribution


Download 

For Windows

Python 3.9 • 64-Bit Graphical Installer • 621 MB


Get Additional Installers




Open Source

Access the open-source software you need for projects in any field, from data visualization to robotics.



User-friendly


With our intuitive platform, you can easily search and install packages and create, load, and switch between environments.



Trusted

Our securely hosted packages and artifacts are methodically tested and regularly updated.

Features

This website uses cookies to ensure you get the best experience on our website. [Privacy Policy](#) Accept 

2. Python (버전 3.8.13 이상)

링크 : <https://www.python.org/downloads/release/python-3813/>

The screenshot shows the Python 3.8.13 release page. The header features the Python logo, a search bar, and navigation links like 'About', 'Downloads', 'Documentation', etc. The main content area is titled 'Python 3.8.13' and includes the release date 'March 16, 2022'. A note states that this is a security release for the legacy 3.8 series, with Python 3.11 being the latest feature release. A section titled 'Security content in this release' lists several CVEs and their fixes, such as CVE-2022-0778 for OpenSSL and CVE-2022-26488 for the Windows installer. The page also mentions that Python 3.8 is now in a 'security fixes only' stage and that the last full bugfix release with binary installers was Python 3.8.10.

Python 3.8.13

Release Date: March 16, 2022

This is a security release of Python 3.8

Note: The release you're looking at is Python 3.8.13, a **security bugfix release** for the legacy 3.8 series. *Python 3.11* is now the latest feature release series of Python 3. [Get the latest release of 3.11.x here.](#)

Security content in this release

- 15 (sic!) CVEs: libexpat upgraded from 2.4.1 to 2.4.7 ([BPO-46794](#), [BPO-46932](#), [BPO-46811](#), [BPO-46784](#), [BPO-46400](#))
- CVE-2022-0778: OpenSSL upgraded from 1.1.1i to 1.1.1n in macOS and Windows installers ([BPO-47024](#))
- CVE-2016-3189, CVE-2019-12900: bzip2 upgraded from 1.0.6 to 1.0.8 in Windows installers ([BPO-44549](#))
- CVE-2022-26488: Windows installer now ensures the correct path is being repaired when "Add to PATH" is used ([BPO-46948](#))
- CVE-2021-28363: bundled pip upgraded from 21.2.4 to 22.0.4 ([BPO-46985](#))
- authorization bypass fixed in urllib.request ([BPO-46756](#))
- REDoS avoided in importlib.metadata ([BPO-46474](#))
- SQLite upgraded from 3.36.0 to 3.37.2 in macOS and Windows installers ([BPO-45925](#))

No installers

According to the release calendar specified in [PEP 569](#), Python 3.8 is now in the "security fixes only" stage of its life cycle: 3.8 branch only accepts security fixes and releases of those are made irregularly in source-only form until October 2024. Python 3.8 isn't receiving regular bug fixes anymore, and binary installers are no longer provided for it. **Python 3.8.10** was the last full *bugfix release* of Python 3.8 with binary installers.

[Full Changelog](#)

3. Tensorflow (버전 2.8.0 이상)

링크 : <https://github.com/tensorflow/tensorflow/releases>

The screenshot shows the GitHub release page for TensorFlow 2.11.0. The page header includes navigation links like Product, Solutions, Open Source, and Pricing, along with a search bar and sign-in/sign-up buttons. The repository name 'tensorflow / tensorflow' is displayed with a 'Public' label. Below this, there are links for Code, Issues (2.1k), Pull requests (232), Actions, Projects (2), Security (405), and Insights. The 'Releases' tab is selected, showing a search bar for releases. The main content area displays the release 'TensorFlow 2.11.0' with a 'Latest' badge. Below the release title, the 'Release 2.11.0' section is visible, followed by 'Breaking Changes'. The breaking changes section lists several updates, including the migration of the Keras optimizer base class to the legacy namespace, changes in checkpoint loading logic, TF1 compatibility, old optimizer API changes, learning rate schedule access, and instructions for custom optimizers.

Nov 18, 2022
tensorflow-jenkins
v2.11.0
d5b57ca

TensorFlow 2.11.0 Latest

Release 2.11.0

Breaking Changes

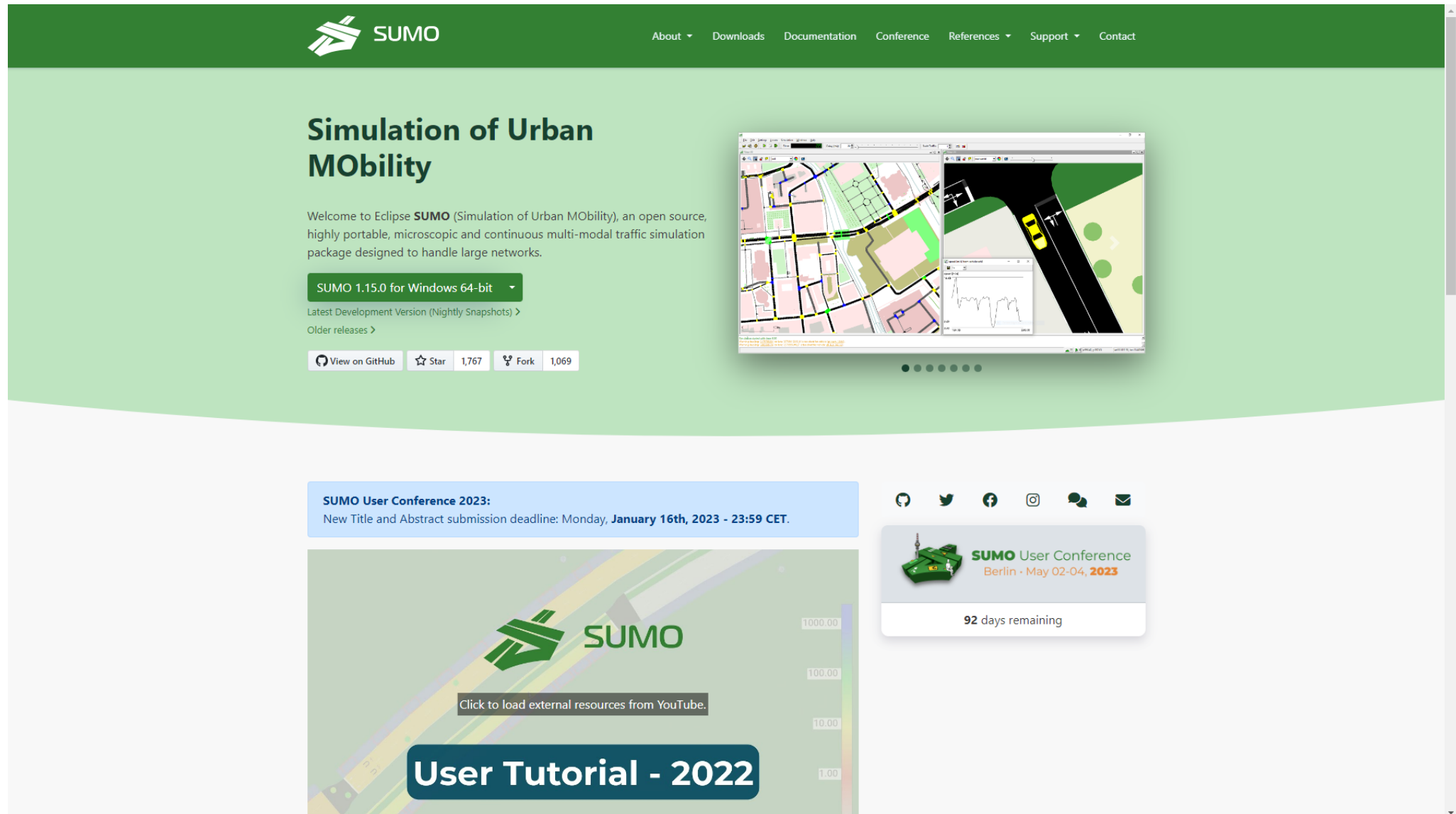
- The `tf.keras.optimizers.Optimizer` base class now points to the new Keras optimizer, while the old optimizers have been moved to the `tf.keras.optimizers.legacy` namespace.

If you find your workflow failing due to this change, you may be facing one of the following issues:

- Checkpoint loading failure.** The new optimizer handles optimizer state differently from the old optimizer, which simplifies the logic of checkpoint saving/loading, but at the cost of breaking checkpoint backward compatibility in some cases. If you want to keep using an old checkpoint, please change your optimizer to `tf.keras.optimizers.legacy.XXX` (e.g. `tf.keras.optimizers.legacy.Adam`).
- TF1 compatibility.** The new optimizer, `tf.keras.optimizers.Optimizer`, does not support TF1 any more, so please use the legacy optimizer `tf.keras.optimizers.legacy.XXX`. We highly recommend [migrating your workflow to TF2](#) for stable support and new features.
- Old optimizer API not found.** The new optimizer, `tf.keras.optimizers.Optimizer`, has a different set of public APIs from the old optimizer. These API changes are mostly related to getting rid of slot variables and TF1 support. Please check the API documentation to find alternatives to the missing API. If you must call the deprecated API, please change your optimizer to the legacy optimizer.
- Learning rate schedule access.** When using a `tf.keras.optimizers.schedules.LearningRateSchedule`, the new optimizer's `learning_rate` property returns the current learning rate value instead of a `LearningRateSchedule` object as before. If you need to access the `LearningRateSchedule` object, please use `optimizer._learning_rate`.
- If you implemented a custom optimizer based on the old optimizer.** Please set your optimizer to subclass `tf.keras.optimizers.legacy.XXX`. If you want to migrate to the new optimizer and find it does not support your optimizer, please file an issue in the [Keras GitHub repo](#).

4. Sumo (버전 1.14.1 이상)

링크 : <https://www.eclipse.org/sumo/>



The screenshot shows the SUMO website homepage. At the top is a green navigation bar with the SUMO logo and links for About, Downloads, Documentation, Conference, References, Support, and Contact. The main content area has a light green background. On the left, the title "Simulation of Urban MObility" is displayed in large, bold letters. Below it, a welcome message describes SUMO as an open source, highly portable, microscopic and continuous multi-modal traffic simulation package. A green button indicates "SUMO 1.15.0 for Windows 64-bit" is available, with links for the latest development version and older releases. Social media links for GitHub (1,767 stars) and Fork (1,069) are shown. On the right, a screenshot of the SUMO simulation interface is displayed, showing a map with traffic and a graph. Below the main content, there is a blue banner for the "SUMO User Conference 2023" with a submission deadline of Monday, January 16th, 2023. To the right of this banner are social media icons. Below the banner is a large image of the SUMO logo with a "User Tutorial - 2022" button. To the right of the tutorial image is a grey banner for the "SUMO User Conference Berlin - May 02-04, 2023" with a countdown of "92 days remaining".

Simulation of Urban MObility

Welcome to Eclipse **SUMO** (Simulation of Urban MObility), an open source, highly portable, microscopic and continuous multi-modal traffic simulation package designed to handle large networks.

SUMO 1.15.0 for Windows 64-bit

Latest Development Version (Nightly Snapshots) >

Older releases >

[View on GitHub](#) [Star](#) 1,767 [Fork](#) 1,069

SUMO User Conference 2023:
New Title and Abstract submission deadline: Monday, **January 16th, 2023 - 23:59 CET.**

SUMO

Click to load external resources from YouTube.

User Tutorial - 2022

SUMO User Conference
Berlin - May 02-04, **2023**

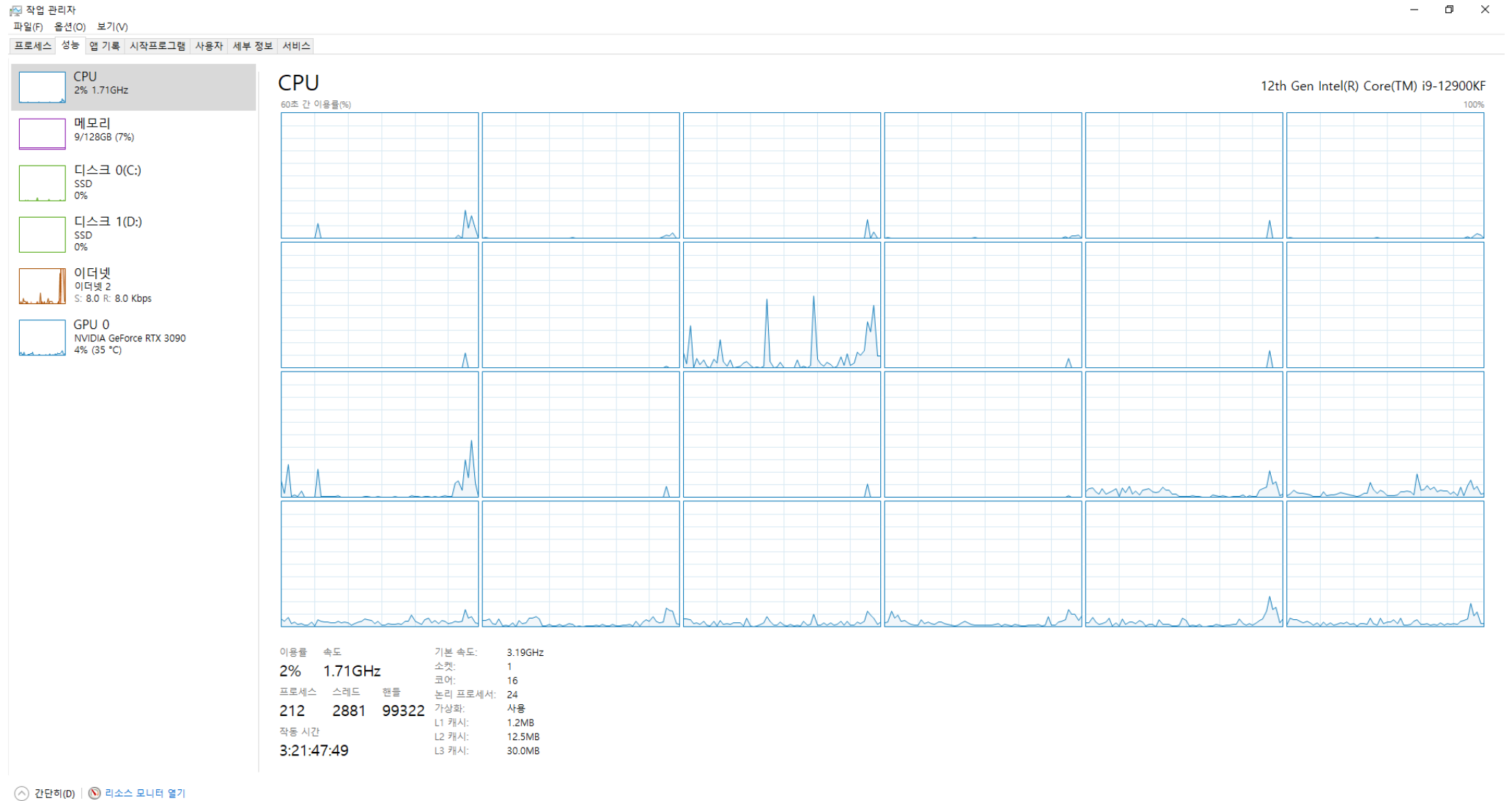
92 days remaining

Chapter II
시험환경로그

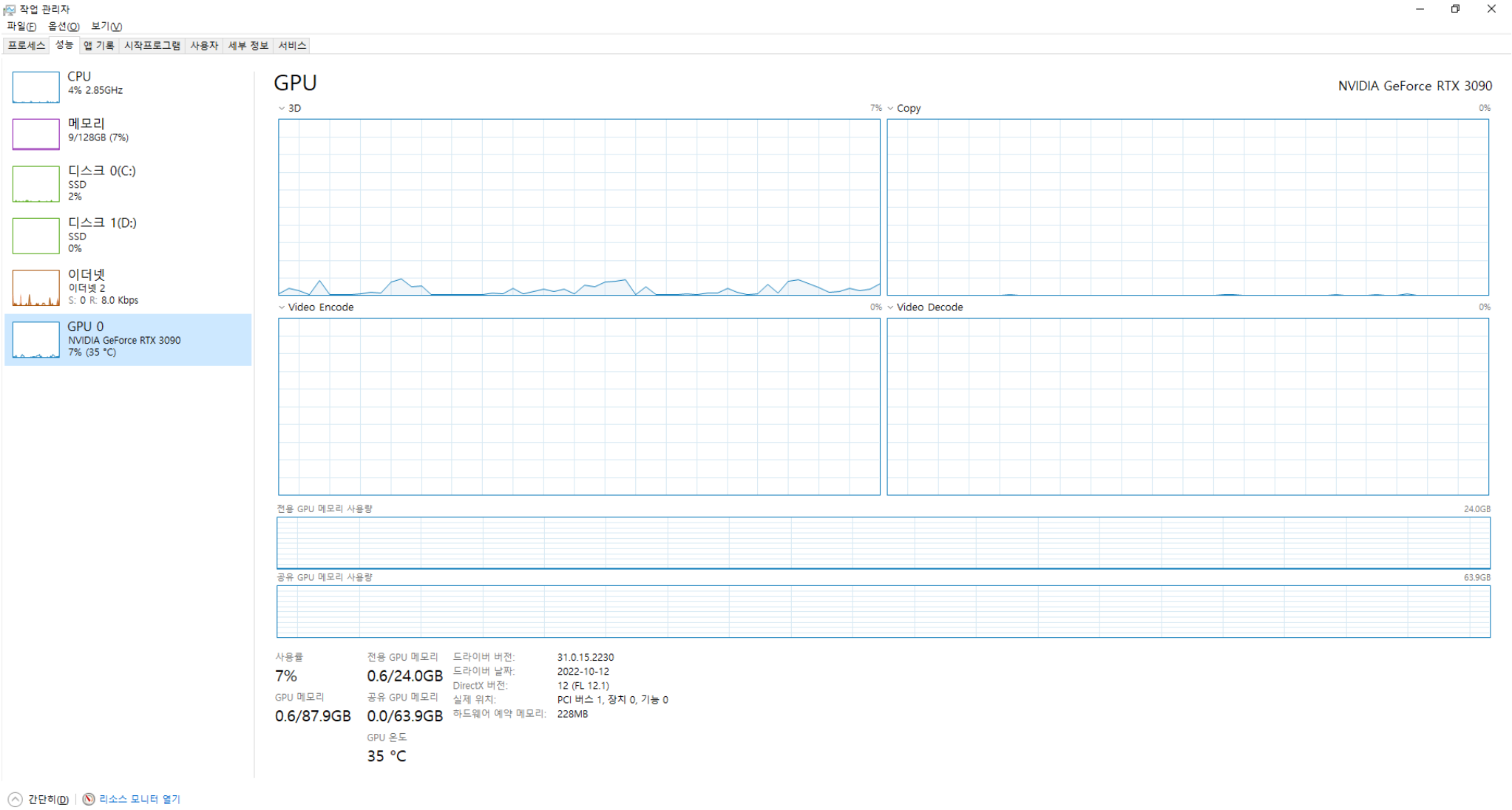


1. CPU 환경

시험환경로그



2. GPU 환경



3. Ram 환경

작업 관리자

파일(F) 옵션(O) 보기(V)

프로세스 성능 열 기록 시작프로그램 사용자 세부 정보 서비스

CPU
2% 1.08GHz

메모리
9/128GB (7%)

디스크 0(C:)
SSD
1%

디스크 1(D:)
SSD
0%

이더넷
이더넷 2
S: 0 R: 0 Kbps

GPU 0
NVIDIA GeForce RTX 3090
8% (35 °C)

메모리

128GB

메모리 사용

60초

메모리 구성

사용 중(압축)

8.2GB (0MB)

커밋됨

11/147GB

페이지 풀

731MB

사용 가능

119GB

캐시됨

32.3GB

비페이지 풀

811MB

속도:

4000MHz

사용된 슬롯:

4/4

폼 팩터:

DIMM

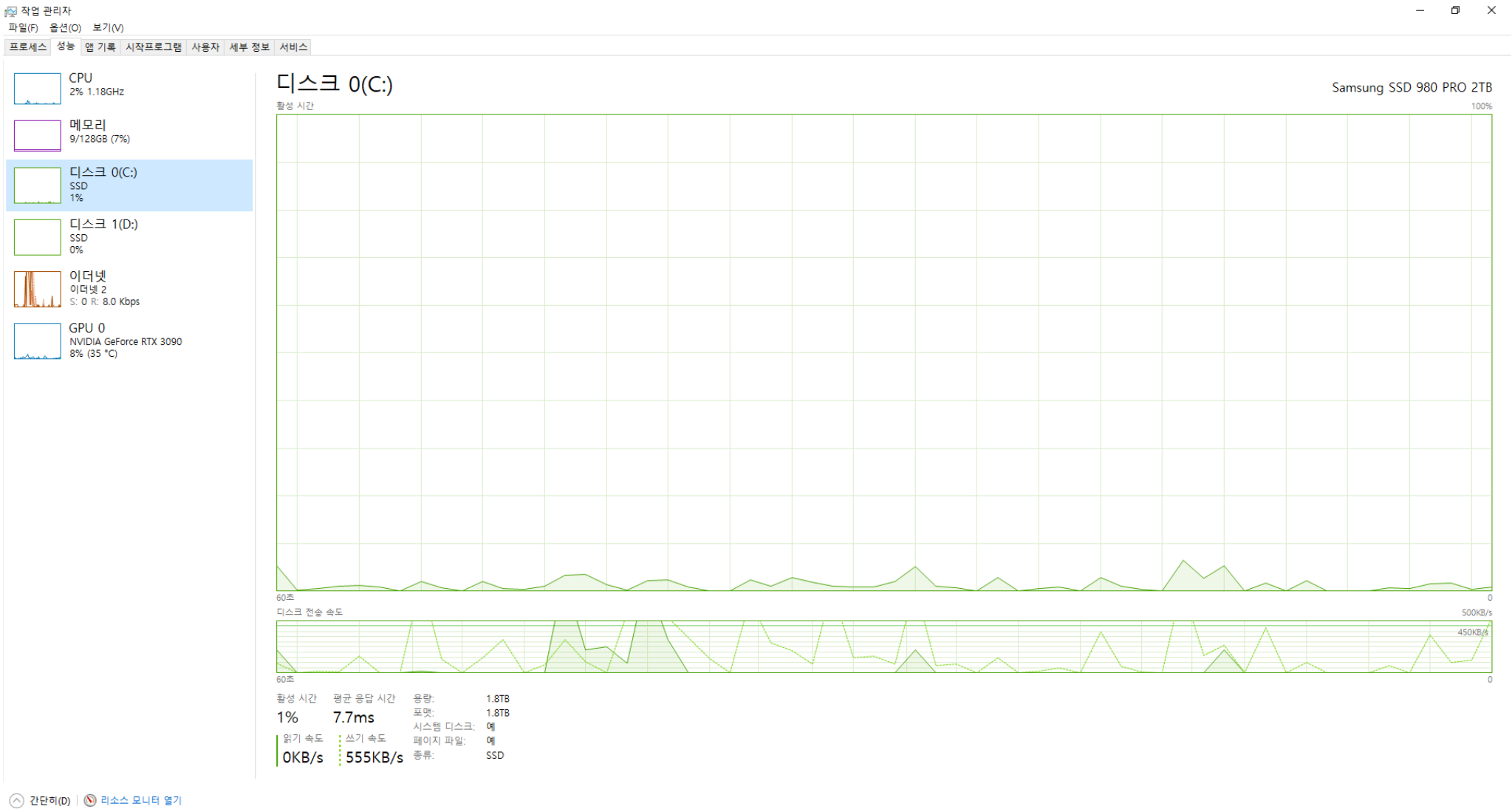
하드웨어 예약:

140MB

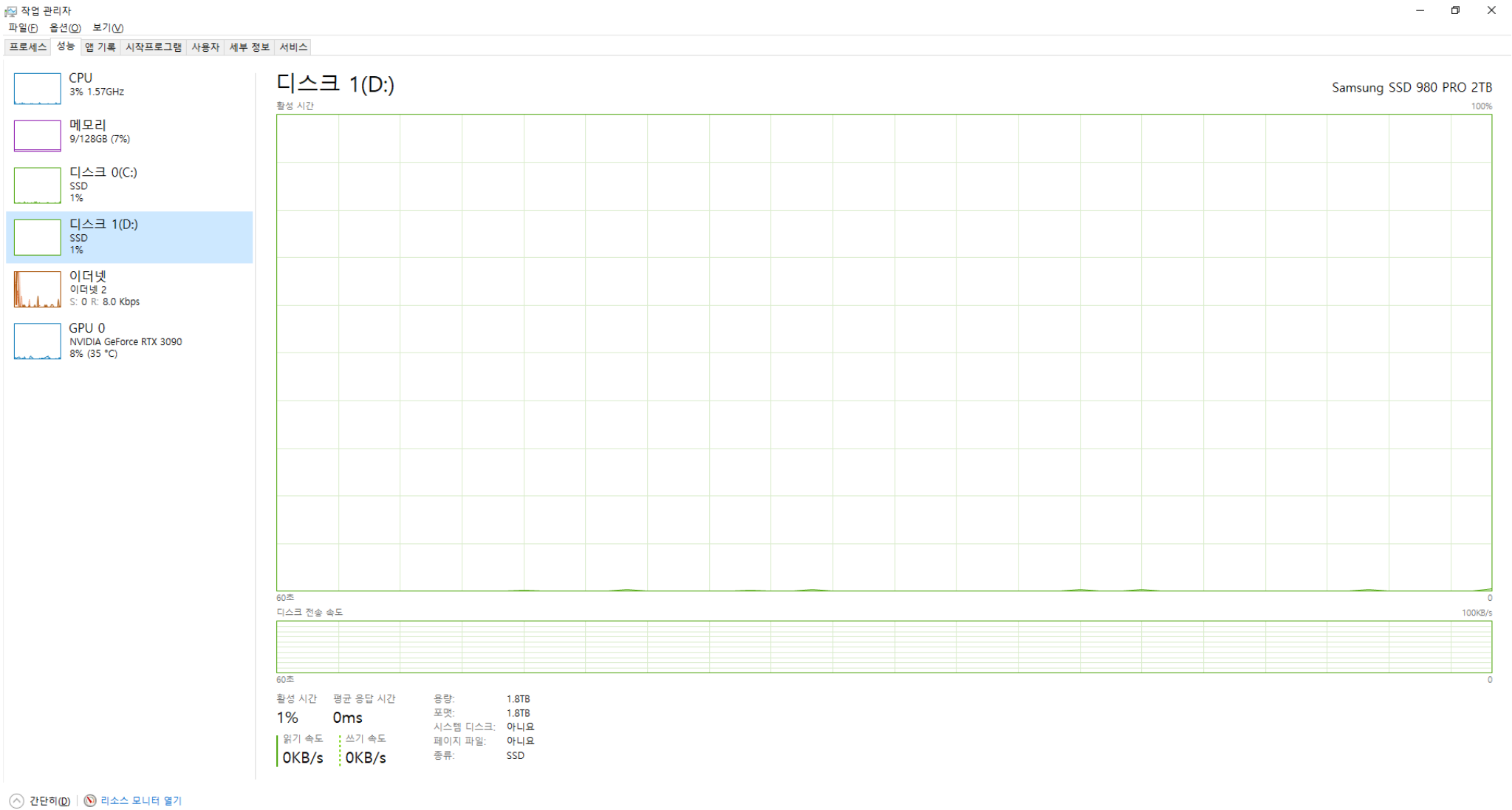
간단히(D)

리소스 모니터 열기

4. HDD 환경 (1)



4. HDD 환경 (2)



Windows 사양

에디션	Windows 10 Pro
버전	22H2
설치 날짜	2022-11-01
OS 빌드	19045.2364
경험	Windows Feature Experience Pack 120.2212.4190.0

6. 사용 프레임워크 버전 정보

시험환경로그

```
# Traffic-Light-Optimization
## Multi-Agent Reinforcement Learning
PPO : Proximal policy optimization algorithms
```

```
## Requirements
* Anaconda(https://www.anaconda.com/products/distribution#download-section)
* Python==3.8.13
* Tensorflow==2.8.0
* Sumo==1.14.1 (https://www.eclipse.org/sumo/)
```

```
## Usages
1. 환경설정
```

```
~~~
## 가상환경 생성 코드
conda create -n rl_signal python=3.8
```

```
## 가상환경 활성화
activate rl_signal
```

```
## 필요 패키지 설치
python -m pip install --upgrade pip
pip install tensorflow-cpu==2.7
pip install tensorflow-addons
pip install sumolib
pip install pandas
pip install tqdm
pip install sklearn
pip install matplotlib
pip install pyodbc
~~~
```

```
2. Config 설정
```

```
~~~
```

```
# tools/config.py에서 gui = True를 하시면 시뮬레이션 스크린을 띄울 수 있습니다.
# 주요항목만 표시함
```

```
# 학습횟수
max_episode_num = 200
```

```
# 최대/최소 녹색시간 반영 설정
apply_min_duration = False
apply_max_duration = False
```

```
# 배치사이즈
batch_size = 128
```

```
# LSTM의 유닛 수
rnn_dim = 128
```

```
# 시뮬레이션 스크린 온/오프
gui = True
~~~
```

```
3. train
```

```
~~~
```

```
# python trainer.py -s [시나리오 폴더 이름]
python trainer.py -s ver_sample
~~~
```

```
4. test
```

```
~~~
```

```
# python tester.py -s [시나리오 폴더 이름]
python tester.py -s ver_sample
~~~
```