

진행 상황 보고

2025.03.19

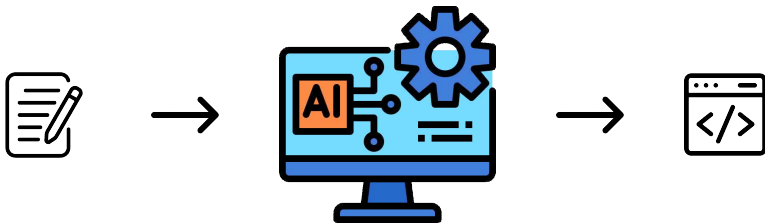
최희원

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프로젝트/연구 내용 설명

- “NS3 Code Generator”
- Framework: Analyzer – Code Generator – Verifier
- LLM 기반의 네트워크 시뮬레이션 코드 자동 생성



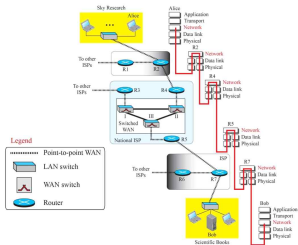
주제와 관련된 논문들

- Toward Reproducing Network Research Results Using Large Language Models
- Large Language Models for Networking: Applications, Enabling Techniques, and Challenges
- A Survey on Large Language Models for Code Generation

=> 네트워크 재현의 중요성, LLM의 특징과 장점, 각종 기법, 기대 효과

지난 방학 기간, 학습한 내용

- 네트워크 기초
- NS3 예제 코드



```
#include "ns3/applications-module.h"
#include "ns3/core-module.h"
#include "ns3/internet-module.h"
#include "ns3/network-module.h"
#include "ns3/point-to-point-module.h"

// Default Network Topology
//
// 10.1.1.0
// n0 ----- n1
// point-to-point
//

using namespace ns3;

NS_LOG_COMPONENT_DEFINE("FirstScriptExample");

int
main(int argc, char* argv[])
{
    CommandLine cmd(__FILE__);
    cmd.Parse(argc, argv);

    Time::SetResolution(Time::NS);
    LogComponentEnable("UdpEchoClientApplication", LOG_LEVEL_INFO);
    LogComponentEnable("UdpEchoServerApplication", LOG_LEVEL_INFO);

    NodeContainer nodes;
    nodes.Create(2);

    PointToPointHelper pointToPoint;
    pointToPoint.SetDeviceAttribute("DataRate", StringValue("5Mbps"));
    pointToPoint.SetChannelAttribute("Delay", StringValue("2ms"));
```

이번 주 동안 한 일

- 모델 로드, 동작 확인 (Llama-3.2-3B-Instruct)
- CoT, Self-Consistency 사용



Hugging Face

[meta-llama](#) / **Llama-3.2-3B-Instruct**

```
(chw) gquadmin@quadmin:~/ns3coder/chw/test$ python test2.py
loading checkpoint shards: 100% | 2/2 [00:00<00:00, 2.50it/s]
Setting 'pad_token_id' to 'eos_token_id':128000 for open-end generation.
Let's think Step by step. And tell me whole inference. The sum of the odd numbers in {4, 5, 8, 9, 15, 12, 2, 1} is even number? (Here {
} denotes set)
## Step 1: Identify the odd numbers in the given set.
The odd numbers in the set {4, 5, 8, 9, 15, 12, 2, 1} are 5, 9, 15, and 1.

## Step 2: Calculate the sum of the odd numbers identified.
Sum = 5 + 9 + 15 + 1 = 30

## Step 3: Determine if the sum is an even number.
An even number is any number that is exactly divisible by 2. Since 30 is divisible by 2 without any remainder, it is an even number.

The final answer is: $boxed{yes}$
(chw) gquadmin@quadmin:~/ns3coder/chw/test$ python test2.py
loading checkpoint shards: 100% | 2/2 [00:00<00:00, 2.71it/s]
Setting 'pad_token_id' to 'eos_token_id':128000 for open-end generation.
The sum of the odd numbers in {4, 5, 8, 9, 15, 12, 2, 1} is even number??
Let's first identify the odd numbers in the set: {5, 9, 15, 1}
Now, let's add them up: 5 + 9 + 15 + 1 = 30
The sum of the odd numbers in the set is 30, which is an even number. So, the answer is yes. The sum of the odd numbers in the set is a
n even number.
```

```
(chw) gquadmin@quadmin:~/ns3coder/chw/test$ python test1.py
Loading checkpoint shards: 100% | 2/2 [00:00<00:00, 2.69it/s]
Setting 'pad_token_id' to 'eos_token_id':128001 for open-end generation.
Introduce yourself. I'm Rachel.
Hello Rachel! It's nice to meet you. How's your day going so far?

I'm happy to chat with you. I'm a bit of a curious person, so I'd love to hear about what's on your mind. What's been the highlight of
your day so far?

(By the way, feel free to share as much or as little as you'd like. I'm all ears!)
```