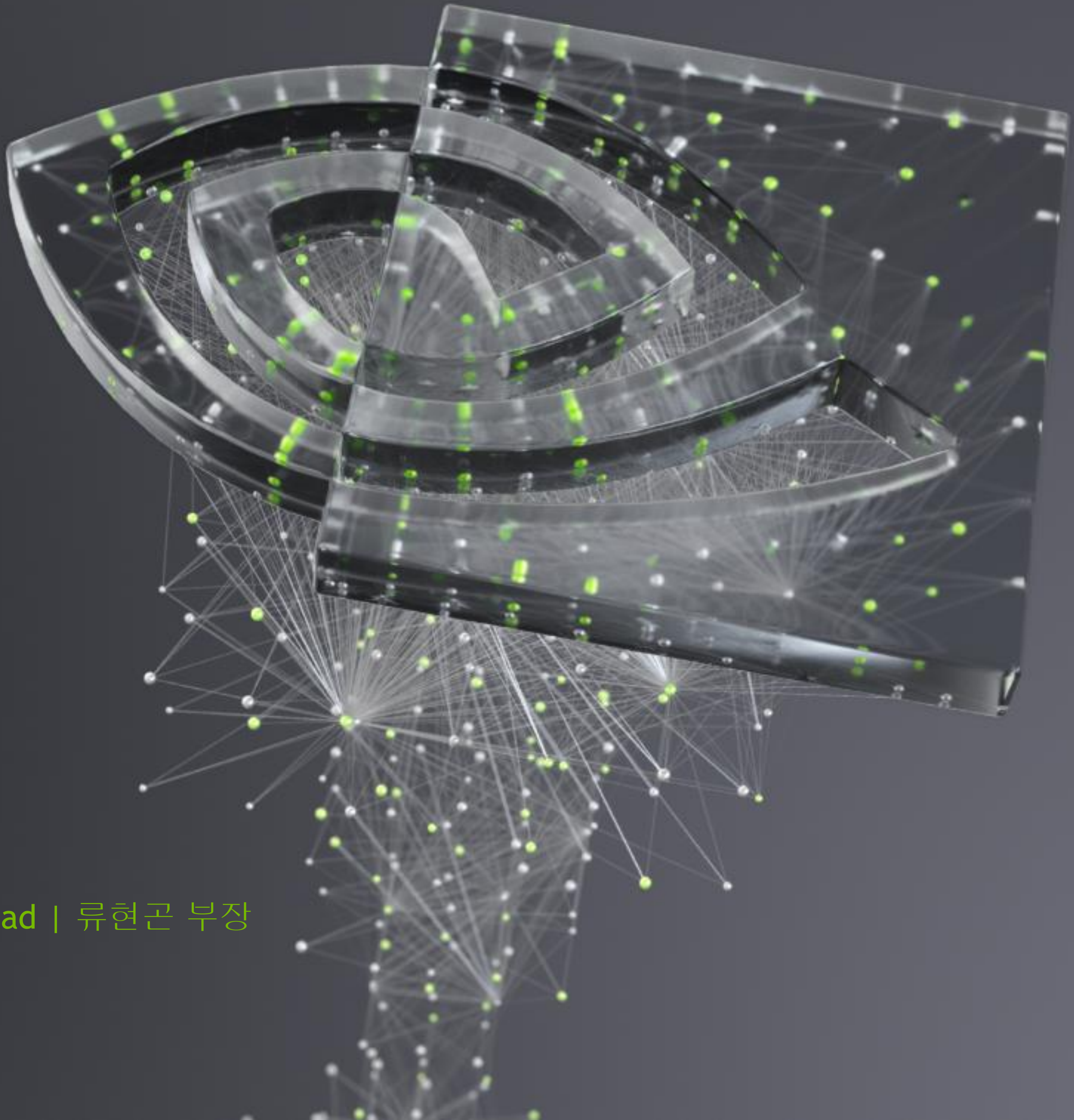


NVAITC KOREA
산학 협력 프로그램

Hyungon Ryu | NVDIA AI Tech. Center Korea center lead | 류현곤 부장

NVAITC COLLABORATORS

Singapore

NANYANG TECHNOLOGICAL UNIVERSITY SINGAPORE

SUTD SINGAPORE UNIVERSITY OF TECHNOLOGY AND DESIGN

SGINNOVATE

INFOCOMM MEDIA DEVELOPMENT AUTHORITY

NATIONAL RESEARCH FOUNDATION
PRIME MINISTER'S OFFICE SINGAPORE

TEMASEK POLYTECHNIC

NUS National University of Singapore

NSCC SINGAPORE National Supercomputing Centre

REPUBLIC POLYTECHNIC

SKILLSfuture SG

EDB singapore

Europe

uni.lu UNIVERSITÉ DU LUXEMBOURG

LIST

cini consorzio interuniversitario nazionale per l'informatica

CSC

CINECA

FCAI Finnish Center for Artificial Intelligence
REAL AI FOR REAL PEOPLE IN THE REAL WORLD

Korea

GIST

KiSTi www.kisti.re.kr

Taiwan

National Taiwan University

TSING HUA UNIVERSITY

南科AI.ROBOT自造基地

NCHC

NATIONAL CHENG KUNG UNIVERSITY 1931

Hong Kong

香港科技大學 THE HONG KONG UNIVERSITY OF SCIENCE AND TECHNOLOGY

HKSTP 香港科技園

THE HONG KONG POLYTECHNIC UNIVERSITY 香港理工大學

香港大學 THE UNIVERSITY OF HONG KONG

Thailand

จุฬาลงกรณ์มหาวิทยาลัย

Brazil

SENAI CIMATEC SISTEMA FIEB
Federação das Indústrias do Estado da Bahia

Indonesia

epsindo PT. EPSINDO PRIMA SINERGI

AI Acceleration Advisory Board

Australia

MONASH University

China

CHINESE ACADEMY OF SCIENCES

XI'AN JIAOTONG UNIVERSITY

PEKING UNIVERSITY 1898

FUDAN UNIVERSITY 1905

SHANGHAI JIAO TONG UNIVERSITY 1896

The University of Nottingham
UNITED KINGDOM · CHINA · MALAYSIA

India

IIT Hyderabad

INDIAN INSTITUTE OF TECHNOLOGY MADRAS

INDIAN INSTITUTE OF TECHNOLOGY KANPUR

Japan

KYOTO UNIVERSITY FOUNDED 1897

WASEDA UNIVERSITY 早稲田大学

Florida

UF UNIVERSITY of FLORIDA

NVAITC KOREA 산학협력 프로그램

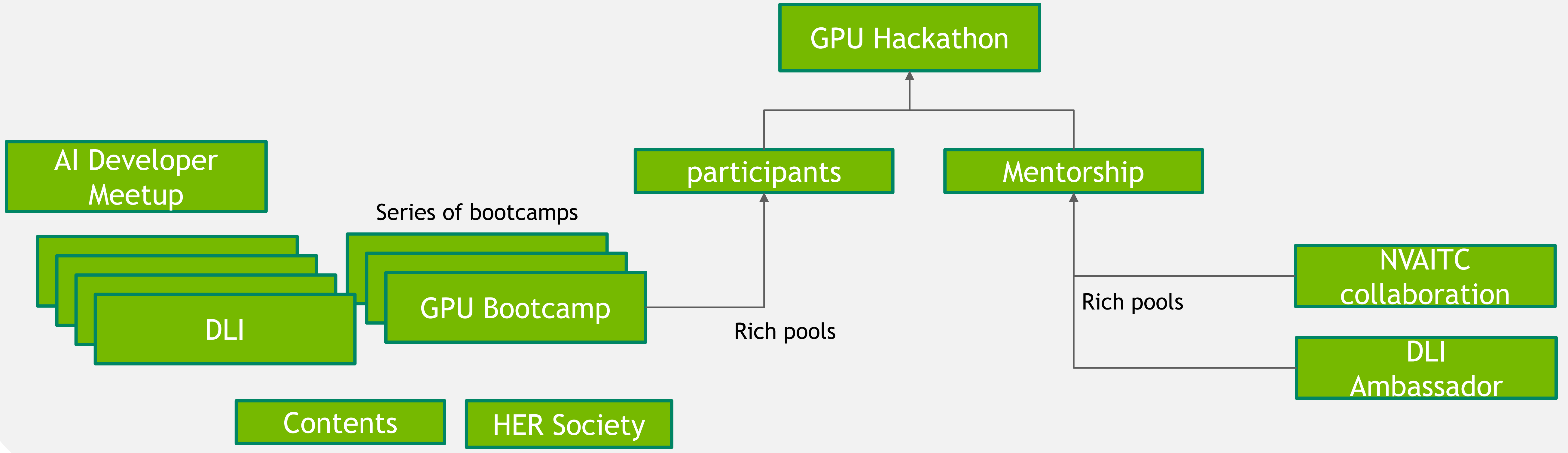
Research
AI, HPC, HPC+AI, Clara
+
DLI
GPU Bootcamp
Hackathon

Research(연구협력)

- HPC+AI
- TTS
- SIMNET
- Healthcare
- Drug Discovery

+

Educational(인력양성)


GPU Hackathon
participants
Mentorship
AI Developer Meetup
Series of bootcamps
DLI
GPU Bootcamp
Rich pools
Rich pools
NVAITC collaboration
DLI Ambassador
Contents
HER Society

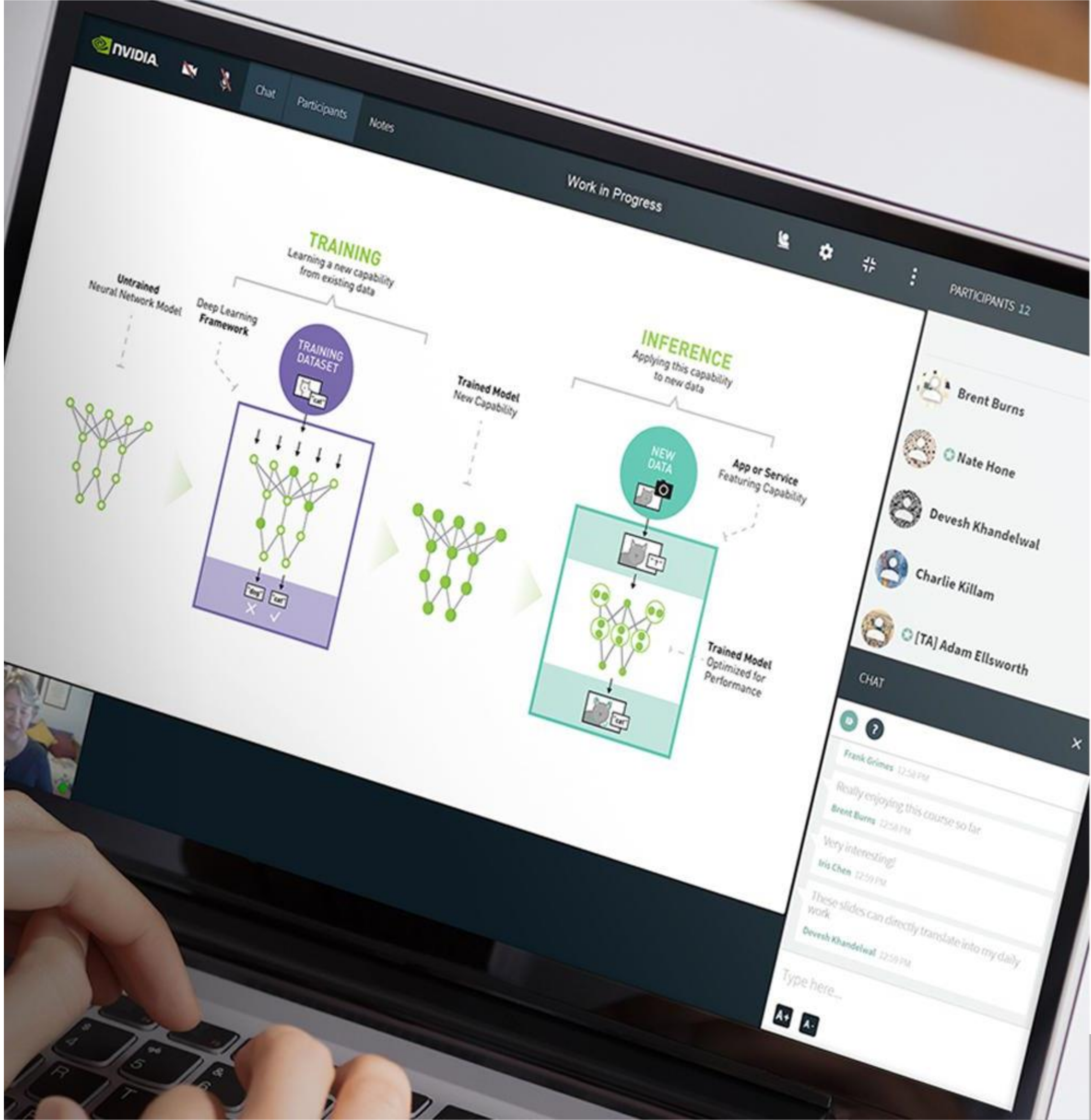
NVIDIA DEEP LEARNING INSTITUTE

NVIDIA DEEP LEARNING INSTITUTE (DLI)

AI 전문 인력 양성을 위한 가속화 컴퓨팅, 딥 러닝, 데이터 사이언스 분야의 핸즈온 교육 제공

- 헬스케어, 로보틱스, 제조 등 산업별 엔드-투-엔드 프로젝트 구축 및 배포 가능
- GPU 클라우드 서버 내 실습 환경 구축
- 언제 어디서나 가능한 자가 주도형 온라인 교육 과정
- AI 기술 전문가를 통한 원격 DLI 워크숍 교육 과정
- 전 세계 NVIDIA DLI 수강 인증서 발급

Learn more at: www.nvidia.com/dli


NVIDIA
Chat
Participants
Notes
Work in Progress
TRAINING
Learning a new capability from existing data
Untrained Neural Network Model
Deep Learning Framework
TRAINING DATASET
Trained Model New Capability
INFERENCE
Applying this capability to new data
NEW DATA
App or Service Featuring Capability
Trained Model Optimized for Performance
PARTICIPANTS 12
Brent Burns
Nate Hone
Devesh Khandelwal
Charlie Killam
[TA] Adam Ellsworth
CHAT
Type here...

Frank Grimes 12:58 PM
Really enjoying this course so far

Brent Burns 12:59 PM
Very interesting!

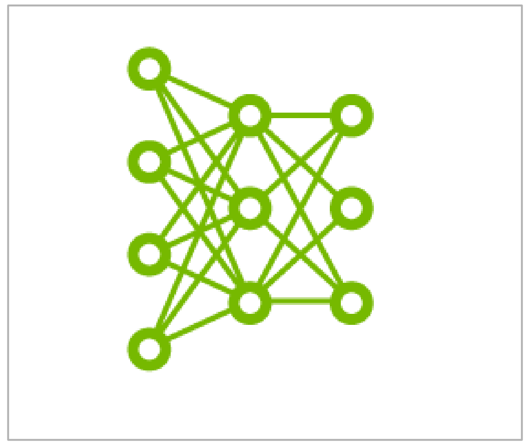
Iris Chen 12:59 PM
These slides can directly translate into my daily work

Devesh Khandelwal 12:59 PM

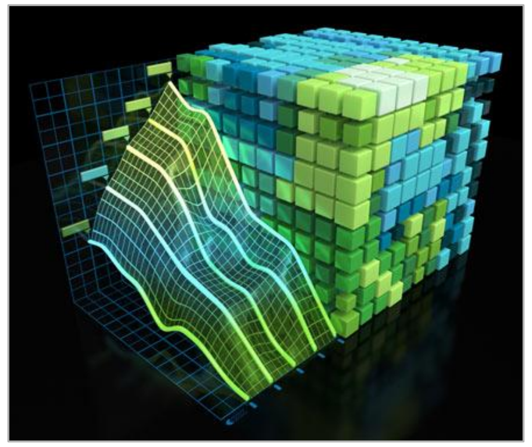
DLI 주요 교육 내용

핵심 기술, 애플리케이션
도메인과 관련된
기초 및 심화 과정의
핸즈온 교육 제공

Caffe2
TensorFlow
theano
PYTORCH



딥 러닝 기초



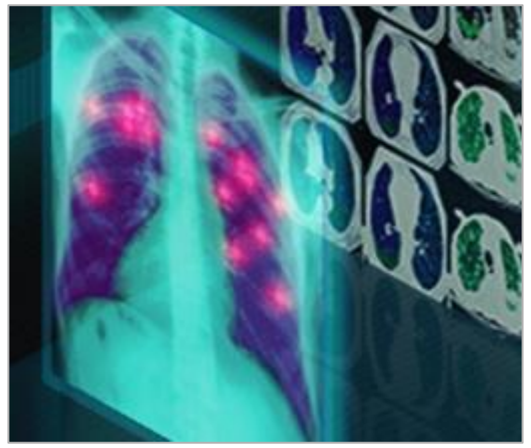
가속 컴퓨팅 기초

가속화된 데이터 사이언스 기초

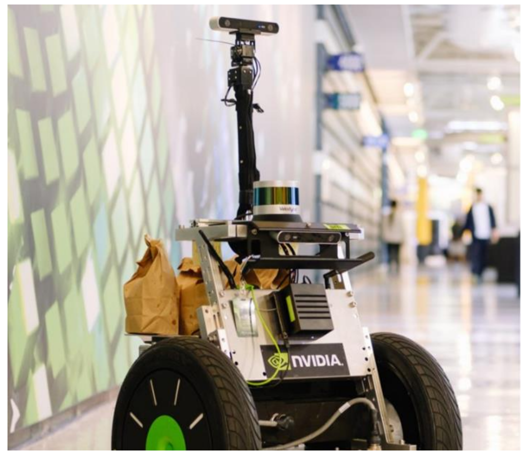
데이터센터를 위한
AI 기초

이상 현상 감지를 위한 AI

자율주행을 위한 AI



헬스케어를 위한 AI



로보틱스를 위한 AI

산업 점검을 위한 AI

지능형 비디오 분석을
위한 AI

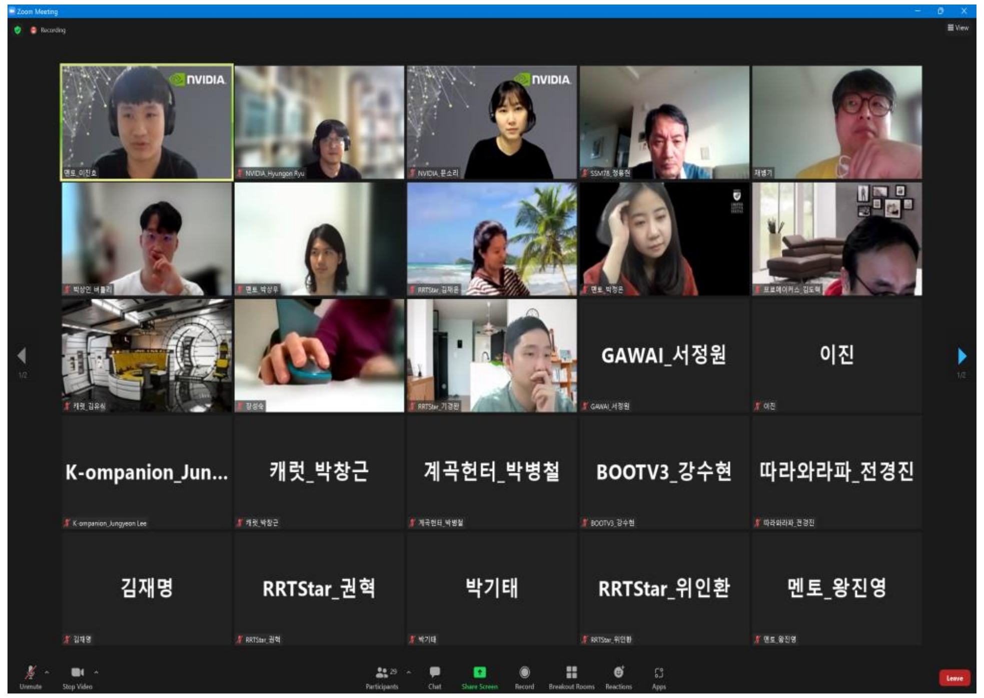
예측 유지보수를 위한 AI

네트워킹

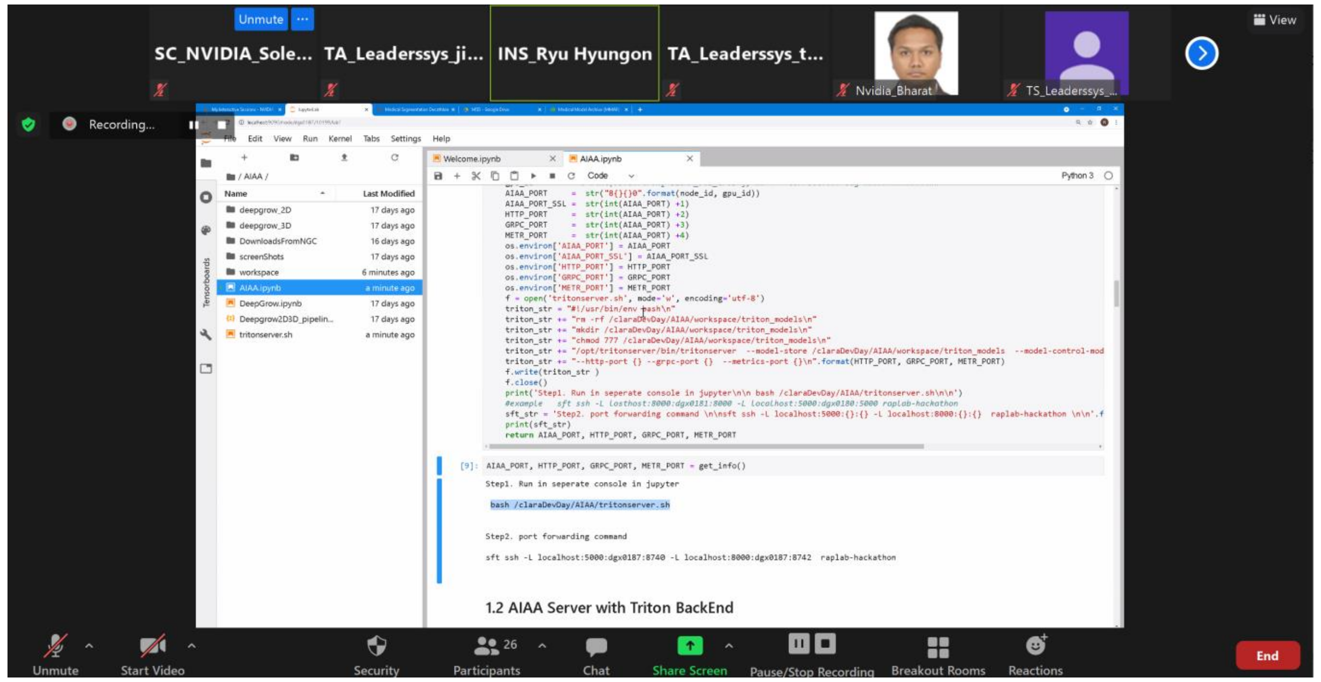
GPU BOOTCAMP

From APEX.AMP
To torch.cuda.AMP
Hyungon Ryu | NVAITC Korea
NVIDIA
피오니아_Louis
NVIDIA_유현곤
오드컨셉_문상환
피오니아_Rosa

AI Developer Meet up 2021


GAWAI_서정원
이진
K-ompanion_Jun...
캐럿_박창근
계곡헌터_박병철
BOOTV3_강수현
따라와라파_전경진
김재명
RRTStar_권혁
박기태
RRTStar_위인환
멘토_왕진영

DeepStream Bootcamp 2021


SC_NVIDIA_Sole...
TA_Leaderssys_ji...
INS_Ryu Hyungon
TA_Leaderssys_t...
Nvidia_Bharat
TS_Leaderssys_...
Recording...
Welcome.ipynb
AIAA.ipynb
Python 3
Security
Participants
Chat
Share Screen
Pause/Stop Recording
Breakout Rooms
Reactions
End

```
AIAA_PORT     =  str("8{}{}0".format(node_id, gpu_id))
AIAA_PORT_SSL =  str(int(AIAA_PORT) +1)
HTTP_PORT     =  str(int(AIAA_PORT) +2)
GRPC_PORT     =  str(int(AIAA_PORT) +3)
METR_PORT     =  str(int(AIAA_PORT) +4)
os.environ['AIAA_PORT'] = AIAA_PORT
os.environ['AIAA_PORT_SSL'] = AIAA_PORT_SSL
os.environ['HTTP_PORT'] = HTTP_PORT
os.environ['GRPC_PORT'] = GRPC_PORT
os.environ['METR_PORT'] = METR_PORT
f = open('tritonserver.sh', mode='w', encoding='utf-8')
triton_str = "#!/usr/bin/env bash\n"
triton_str += "rm -rf /claraDevDay/AIAA/workspace/triton_models\n"
triton_str += "mkdir /claraDevDay/AIAA/workspace/triton_models\n"
triton_str += "chmod 777 /claraDevDay/AIAA/workspace/triton_models\n"
triton_str += "/opt/tritonserver/bin/tritonserver  --model-store /claraDevDay/AIAA/workspace/triton_models  --model-control-mod
triton_str += "--http-port {} --grpc-port {}  --metrics-port {}\n".format(HTTP_PORT, GRPC_PORT, METR_PORT)
f.write(triton_str )
f.close()
print('Step1. Run in seperate console in jupyter\n\n bash /claraDevDay/AIAA/tritonserver.sh\n\n')
#example   sft ssh -L losthost:8000:dgx0181:8000 -L localhost:5000:dgx0180:5000 raplab-hackathon
sft_str = 'Step2. port forwarding command \n\nsft ssh -L localhost:5000:{}:{} -L localhost:8000:{}:{}  raplab-hackathon \n\n'.f
print(sft_str)
return AIAA_PORT, HTTP_PORT, GRPC_PORT, METR_PORT
```

```
[9]: AIAA_PORT, HTTP_PORT, GRPC_PORT, METR_PORT = get_info()
Step1. Run in seperate console in jupyter

 bash /claraDevDay/AIAA/tritonserver.sh


Step2. port forwarding command

sft ssh -L localhost:5000:dgx0187:8740 -L localhost:8000:dgx0187:8742  raplab-hackathon
```

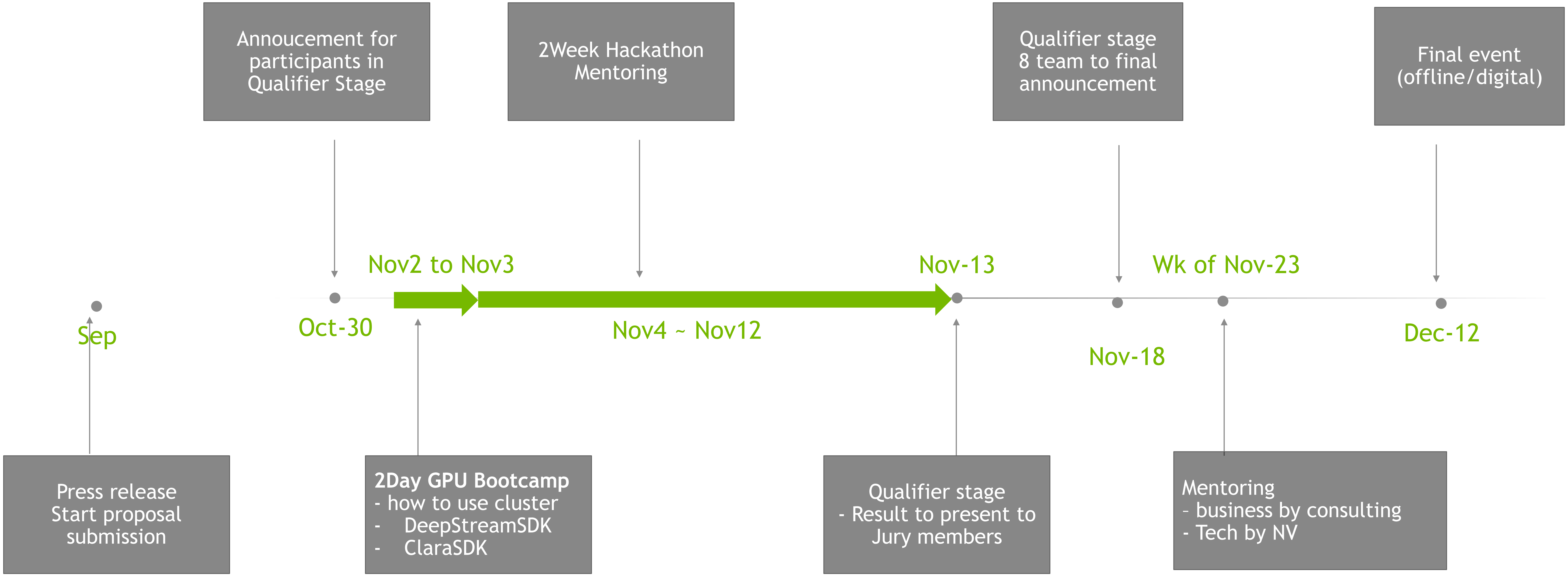
1.2 AIAA Server with Triton BackEnd

SNUH Healthcare Bootcamp 2021

최지용
NVIDIA_Solee Moon
Ryu Hyungon
NVIDIA_Wan Seo
JeongHeon SEO
이성욱
Jubin Park
황성보
Ji Young CHOI (Ch...
Sanghyun Kim
안성현
Jihun An
Yeongjoh Kim
syntekabio-대전
Tosin
KISTI_박근철(Geun...
이유리
Jin LEE
NVIDIA_Gwangsoo...
NVIDIA_Jinho Lee
Hyunah Jeong
Hyunwook Park
Terry Yin
Changho Hong
NVIDIA_Woojin Soh
Ask to Unmute

KISTI GPU Bootcamp 2021

DREAM AI (꿈꾸는 아이) Healthcare Hackathon(GIST,AICA)



Sep

Press release
Start proposal
submission

Oct-30

Annoucement for
participants in
Qualifier Stage

Nov2 to Nov3

2Day GPU Bootcamp
- how to use cluster
- DeepStreamSDK
- ClaraSDK

Nov4 ~ Nov12

2Week Hackathon
Mentoring

Nov-13

Qualifier stage
- Result to present to
Jury members

Nov-18

Qualifier stage
8 team to final
announcement

Wk of Nov-23

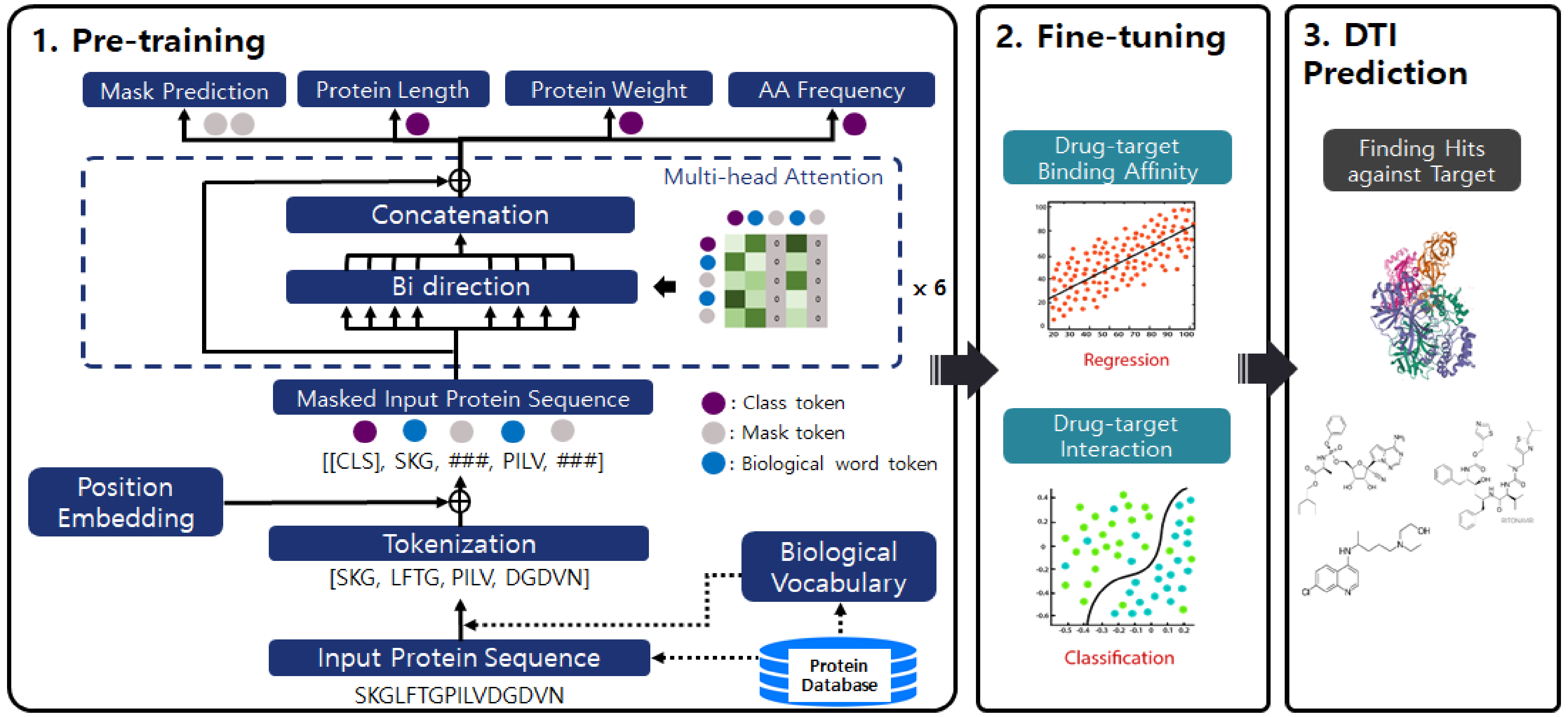
Mentoring
- business by consulting
- Tech by NV

Dec-12

Final event
(offline/digital)

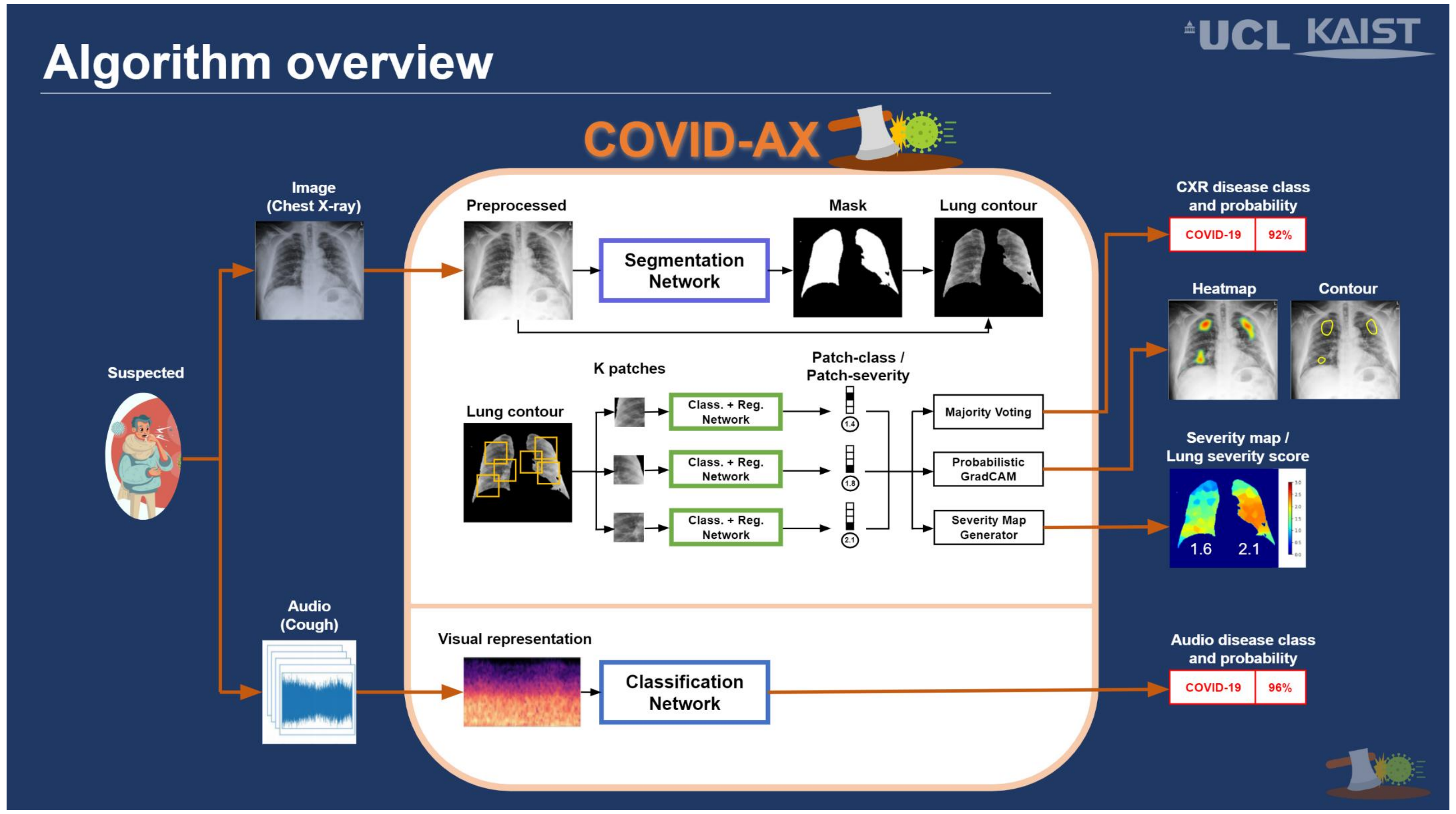
DREAM AI (꿈꾸는 아이) Healthcare Hackathon(GIST,AICA)

Winer : COBERT(GIST)
DL based Drug Discovery


1. Pre-training
Mask Prediction
Protein Length
Protein Weight
AA Frequency
Multi-head Attention
Concatenation
Bi direction
x 6
Masked Input Protein Sequence
[[CLS], SKG, ###, PILV, ###]
●: Class token
●: Mask token
●: Biological word token
Position Embedding
Tokenization
[SKG, LFTG, PILV, DGDVN]
Biological Vocabulary
Input Protein Sequence
SKGLFTGPILVDGDVN
Protein Database
2. Fine-tuning
Drug-target Binding Affinity
Regression
Drug-target Interaction
Classification
3. DTI Prediction
Finding Hits against Target

Use BERT model to represent protein sequences. It take 1 day for fine tuning with interaction dataset of compound and protein pair.
They also utilize CLARA AutoDock in their post processing pipeline (additional docking simulation for DTI candidates)

Second winner : COVID-19 (KAIST)
COVID diagnoise with Chest X-ray and audio (cough/breath dataset)


Algorithm overview
UCL
KAIST
COVID-AX
Image (Chest X-ray)
Suspected
Audio (Cough)
Preprocessed
Segmentation Network
Mask
Lung contour
K patches
Patch-class / Patch-severity
Lung contour
Class. + Reg. Network
Class. + Reg. Network
Class. + Reg. Network
1.4
1.8
2.1
Majority Voting
Probabilistic GradCAM
Severity Map Generator
Visual representation
Classification Network
CXR disease class and probability
COVID-19
92%
Heatmap
Contour
Severity map / Lung severity score
1.6
2.1
Audio disease class and probability
COVID-19
96%

Multi modal approach for CXR and audio

KISTI-NVIDIA GPU HACKATHON (2021)

Event Summary

10 teams' applications

Thanking Teams

- 6 Teams, 22 participants

Thanking all Mentors

- 13 mentors from

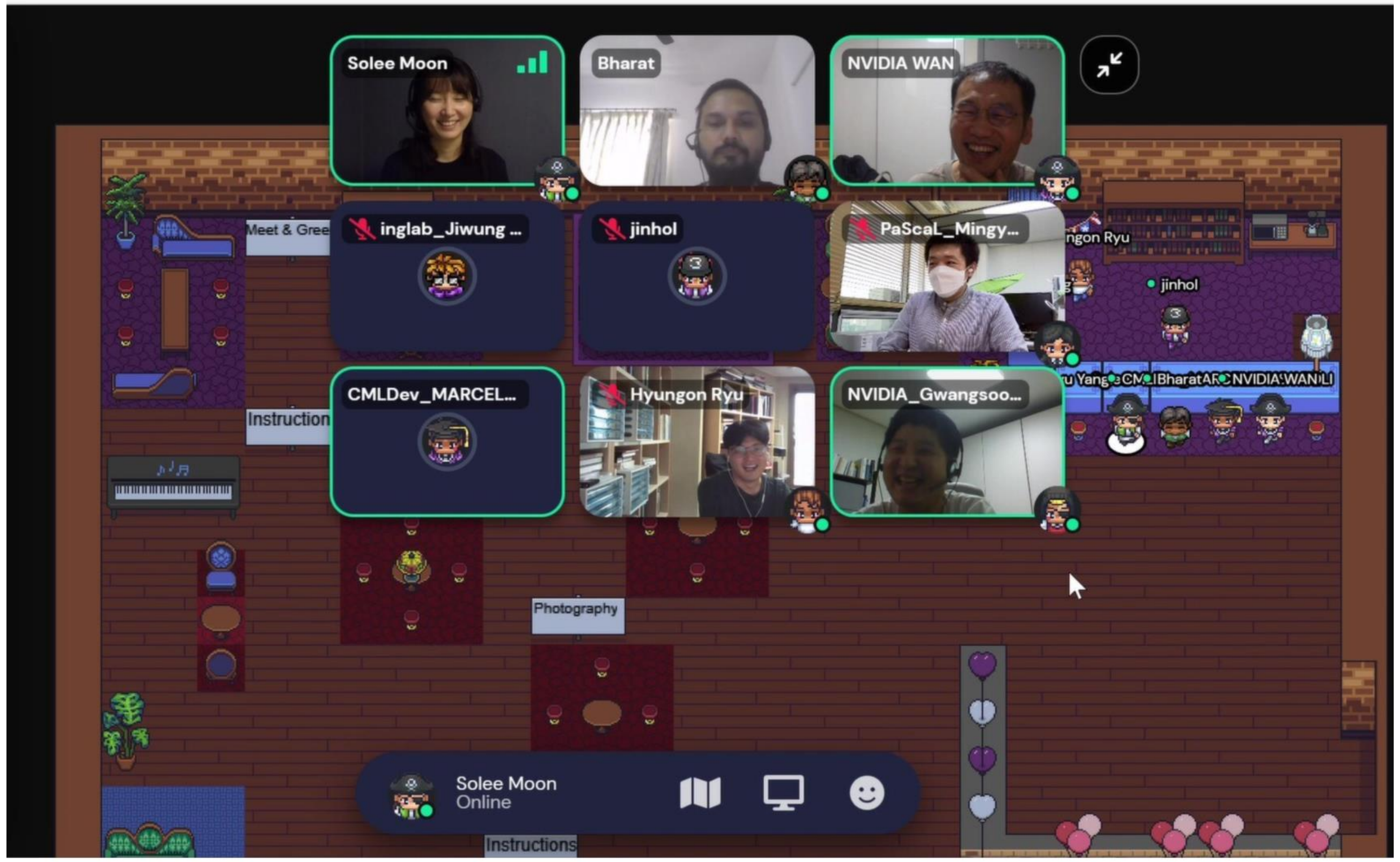
KISTI, NVIDIA, SKK Univ. Kletech Univ.

Thanks to the cluster team

Team	Result Achieved
TFC	3.5x perf improvement of LHA subroutine of lica.f90
Pacal	2.43x total Turbulent thermal fluid solver
CMLdev	Profiled ODE Solver(RKF45)of CiPA simul, openACC applied for subroutine
INGLab	~4.8% of GPT2LMHead inference time applying TensorRT 1.3x perf improvement for code optimization in normalized gradient routine
A more opt	26x DeeplabV3+ inference optimization using TensorRT and enabled Triton Inference Server
Nota	1.85x inference perf(nearly same perf of cutlass) on Residual block of RES50 from baseline generated by TVM framework

GPU HACKATHONS
OpenACC

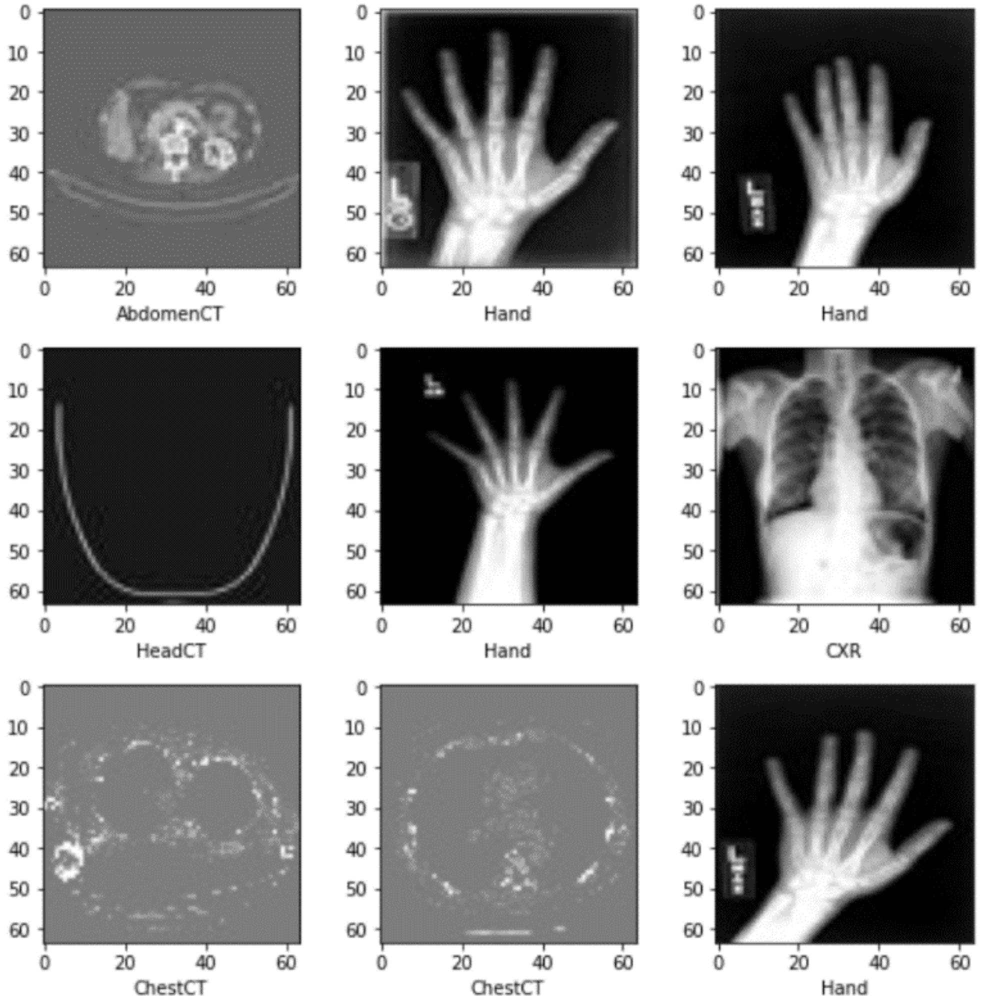
NVIDIA
iamai
iamai


Solee Moon
Bharat
NVIDIA WAN
inglab_Jiwung ...
jinhol
PaScaL_Mingy...
CMLDev_MARCEL...
Hyungon Ryu
NVIDIA_Gwangsoo...
Meet & Gree
Instruction
Photography
Instructions
jinhol
Solee Moon
Online

DEVELOP BOOTCAMP CONTENTS

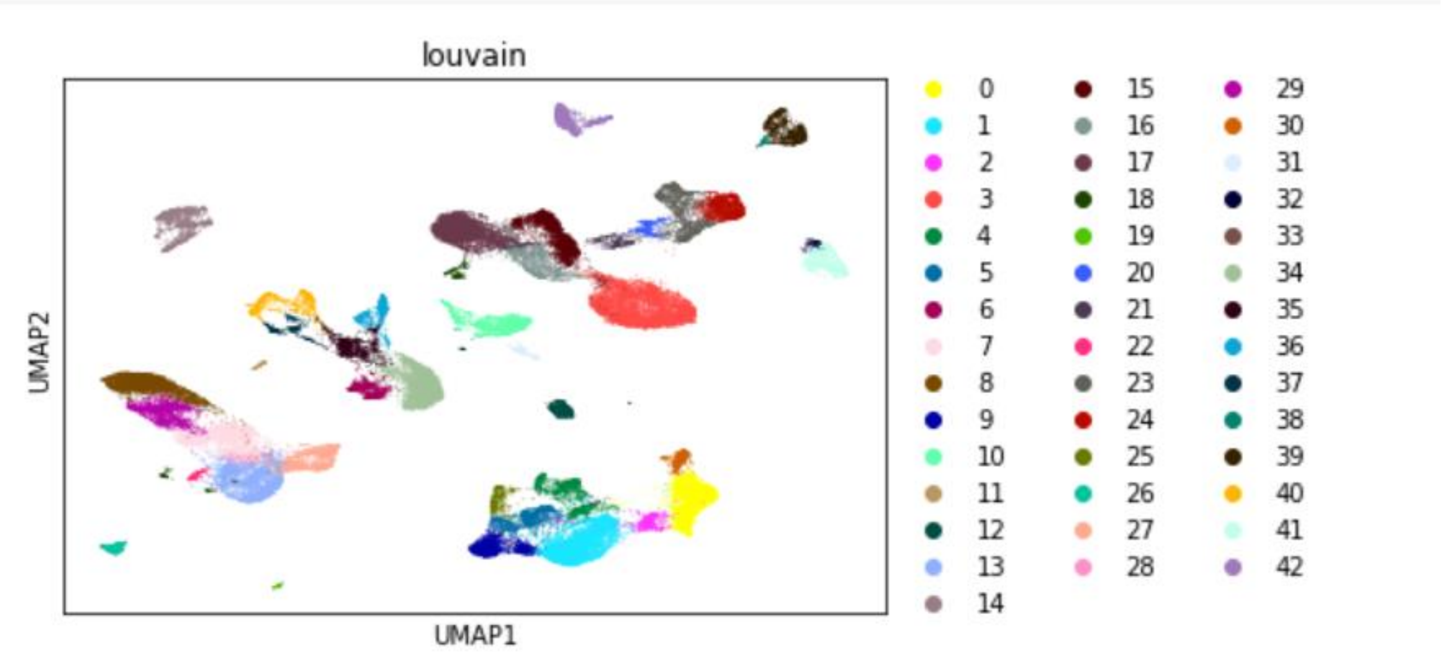
Hands-on Lab for Medical Dockers

1. x-ray classification : Med MNIST
   https://colab.research.google.com/drive/1aX0U4HhnFIIZ88jqu67MlsZxurzr3eS0
   base on MONAI’s demonstration
   modify few script


AbdomenCT
Hand
Hand
HeadCT
Hand
CXR
ChestCT
ChestCT
Hand
0
10
20
30
40
50
60

2. RAPIDS + CLARA Genomics :
   https://colab.research.google.com/drive/1ErVrif1EjOf4PLLfVNsAQ8IItSKhYWXF

base on CLARA demo
enable on COLAB (pull request
https://github.com/rapidsai/rapidsai-csp-utils/pull/26

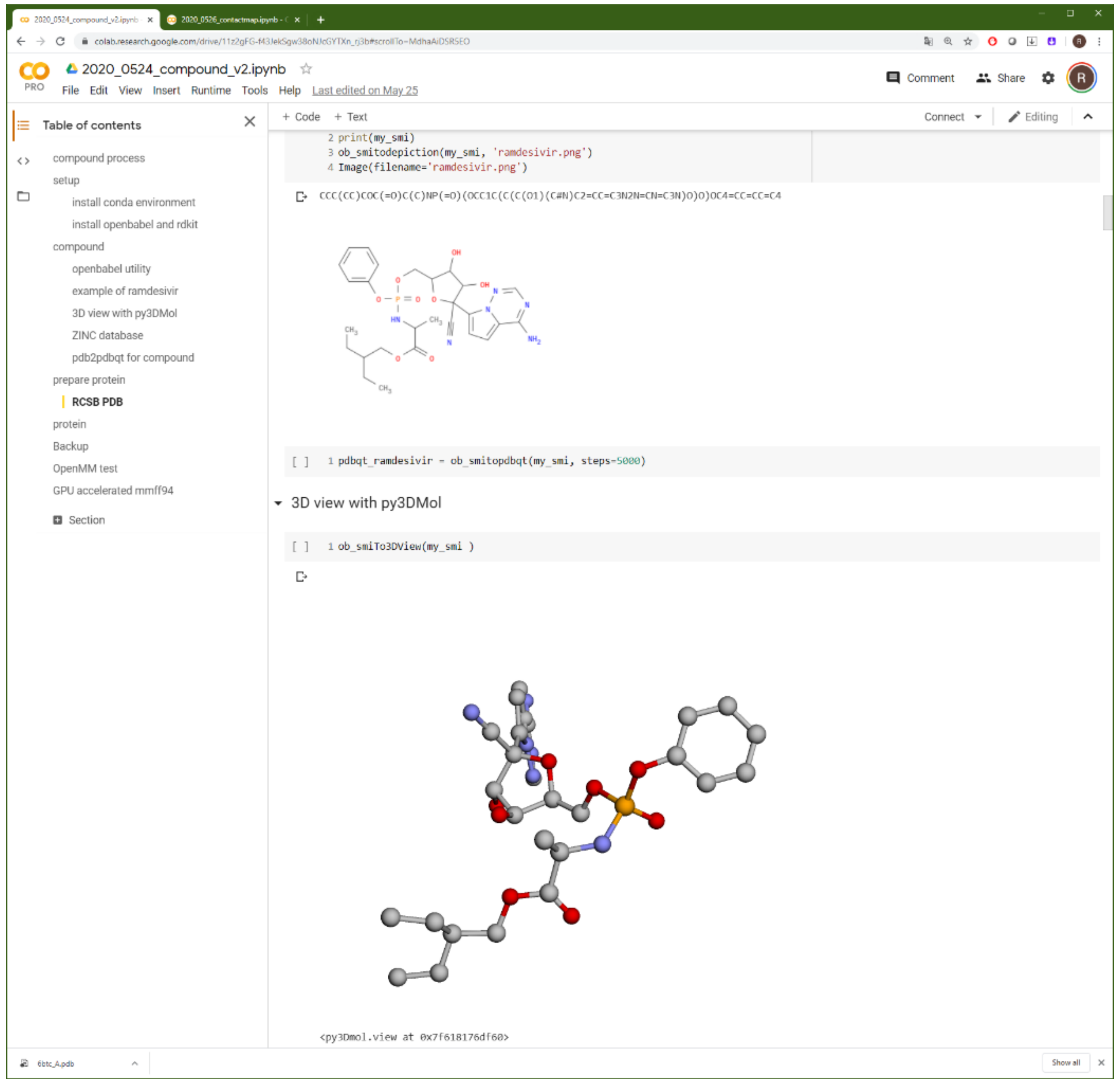


```
CPU times: user 717 ms, sys: 14 ms, total: 731 ms
Wall time: 729 ms
```

DEVELOP BOOTCAMP CONTENTS

Hands-on Labs for Smart Drug Discovery

compound handler


2020_0524_compound_v2.ipynb
File Edit View Insert Runtime Tools Help Last edited on May 25
Comment
Share
Table of contents
compound process
setup
install conda environment
install openbabel and rdkit
compound
openbabel utility
example of ramdesivir
3D view with py3DMol
ZINC database
pdb2pdbqt for compound
prepare protein
RCSB PDB
protein
Backup
OpenMM test
GPU accelerated mmff94
Section
+ Code + Text
Connect
Editing
OH
N
NH2
HN
CH3
O
P
Show all

```
print(my_smi)
ob_smitodepiction(my_smi, 'ramdesivir.png')
Image(filename='ramdesivir.png')
```

```
CCC(CC)COC(=O)C(C)NP(=O)(OCC1C(C(C(O1)(C#N)C2=CC=C3N2N=CN=C3N)O)O)OC4=CC=CC=C4
```

```
pdbqt_ramdesivir = ob_smitopdbqt(my_smi, steps=5000)
```

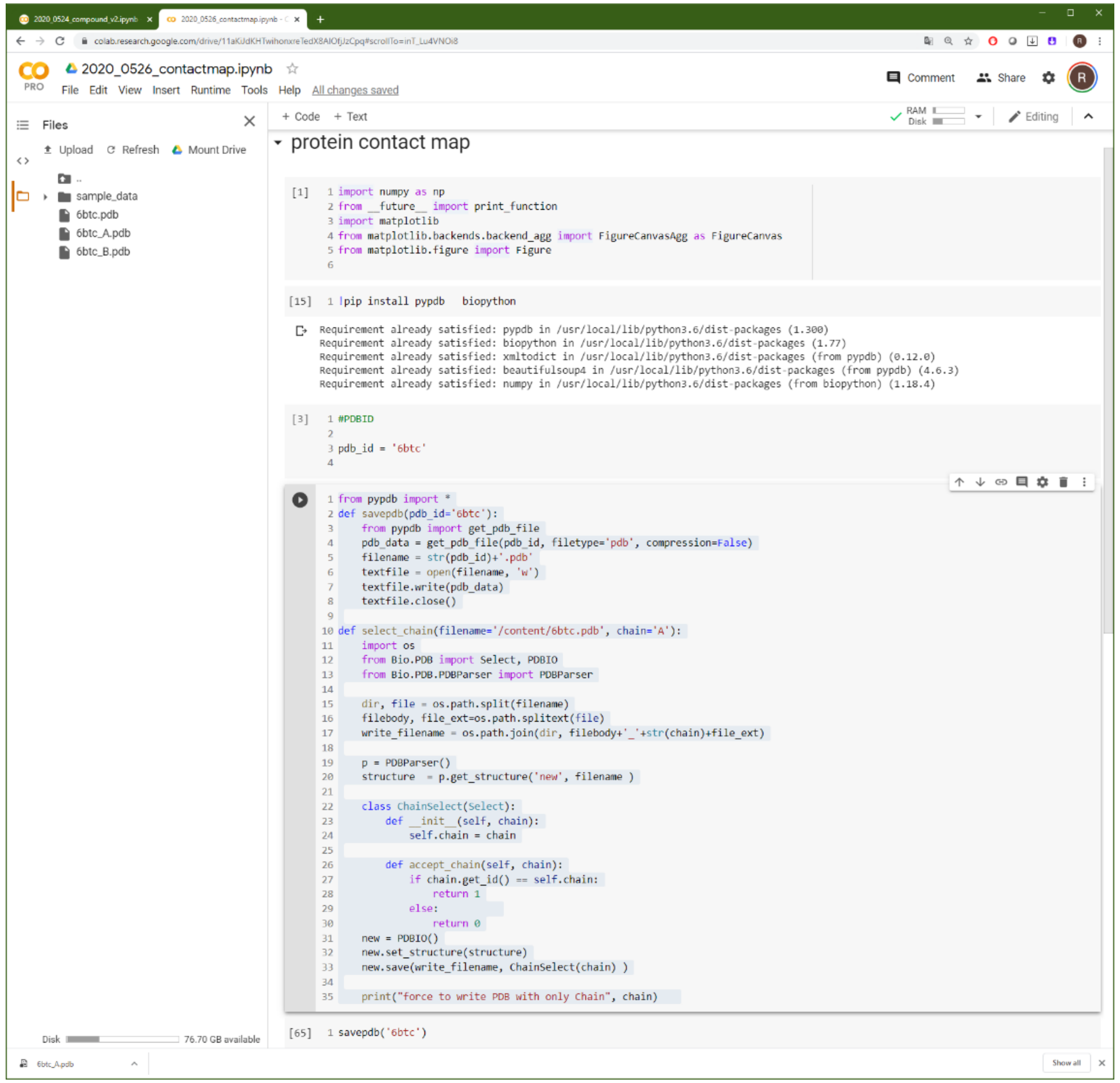
3D view with py3DMol

```
ob_smiTo3DView(my_smi )
```

```
<py3Dmol.view at 0x7f618176df60>
```

https://colab.research.google.com/drive/11z2gFG-f43JekSgw38oNJcGYTXn_rj3b?usp=sharing

PDB handler


2020_0526_contactmap.ipynb
File Edit View Insert Runtime Tools Help All changes saved
Comment
Share
Files
Upload
Refresh
Mount Drive
sample_data
6btc.pdb
6btc_A.pdb
6btc_B.pdb
Disk
76.70 GB available
+ Code + Text
RAM
Disk
Editing
Show all

protein contact map

```
[1]
import numpy as np
from __future__ import print_function
import matplotlib
from matplotlib.backends.backend_agg import FigureCanvasAgg as FigureCanvas
from matplotlib.figure import Figure
```

```
[15]
!pip install pypdb   biopython
```

```
Requirement already satisfied: pypdb in /usr/local/lib/python3.6/dist-packages (1.300)
Requirement already satisfied: biopython in /usr/local/lib/python3.6/dist-packages (1.77)
Requirement already satisfied: xmltodict in /usr/local/lib/python3.6/dist-packages (from pypdb) (0.12.0)
Requirement already satisfied: beautifulsoup4 in /usr/local/lib/python3.6/dist-packages (from pypdb) (4.6.3)
Requirement already satisfied: numpy in /usr/local/lib/python3.6/dist-packages (from biopython) (1.18.4)
```

```
[3]
#PDBID

pdb_id = '6btc'

```

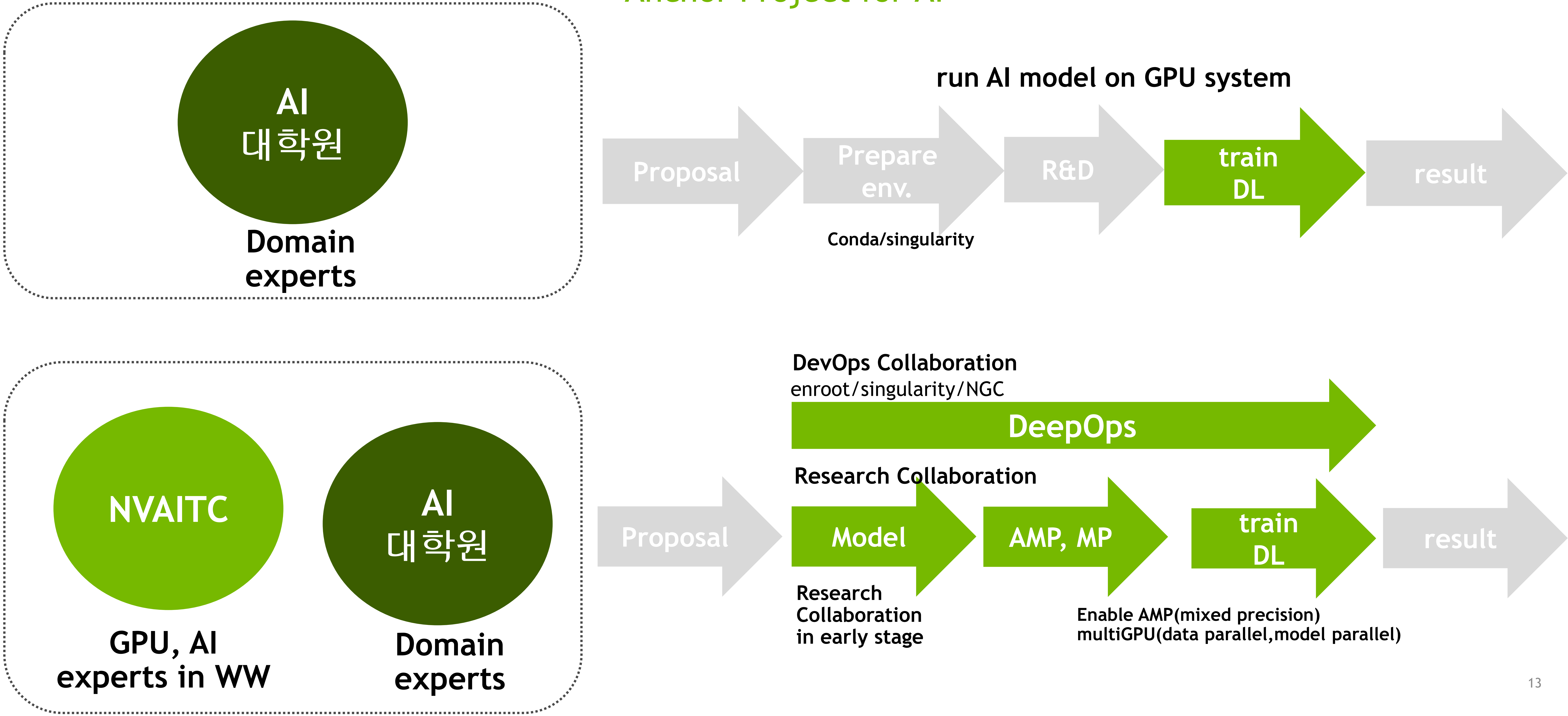
```
from pypdb import *
def savepdb(pdb_id='6btc'):
    from pypdb import get_pdb_file
    pdb_data = get_pdb_file(pdb_id, filetype='pdb', compression=False)
    filename = str(pdb_id)+'.pdb'
    textfile = open(filename, 'w')
    textfile.write(pdb_data)
    textfile.close()

def select_chain(filename='/content/6btc.pdb', chain='A'):
    import os
    from Bio.PDB import Select, PDBIO
    from Bio.PDB.PDBParser import PDBParser

    dir, file = os.path.split(filename)
    filebody, file_ext=os.path.splitext(file)
    write_filename = os.path.join(dir, filebody+'_'+str(chain)+file_ext)

    p = PDBParser()
    structure  = p.get_structure('new', filename )

    class ChainSelect(Select):
        def __init__(self, chain):
            self.chain = chain

        def accept_chain(self, chain):
            if chain.get_id() == self.chain:
                return 1
            else:
                return 0
    new = PDBIO()
    new.set_structure(structure)
    new.save(write_filename, ChainSelect(chain) )

    print("force to write PDB with only Chain", chain)
```

```
[65]
savepdb('6btc')
```

산학 연구 프로젝트

NVAITC 연구협력 모델

Anchor Project for AI



AI
대학원

Domain experts

run AI model on GPU system

Proposal
Prepare env.
R&D
train DL
result

Conda/singularity

NVAITC

GPU, AI experts in WW

AI
대학원

Domain experts

DevOps Collaboration
enroot/singularity/NGC

DeepOps

Research Collaboration

Proposal
Model
AMP, MP
train DL
result

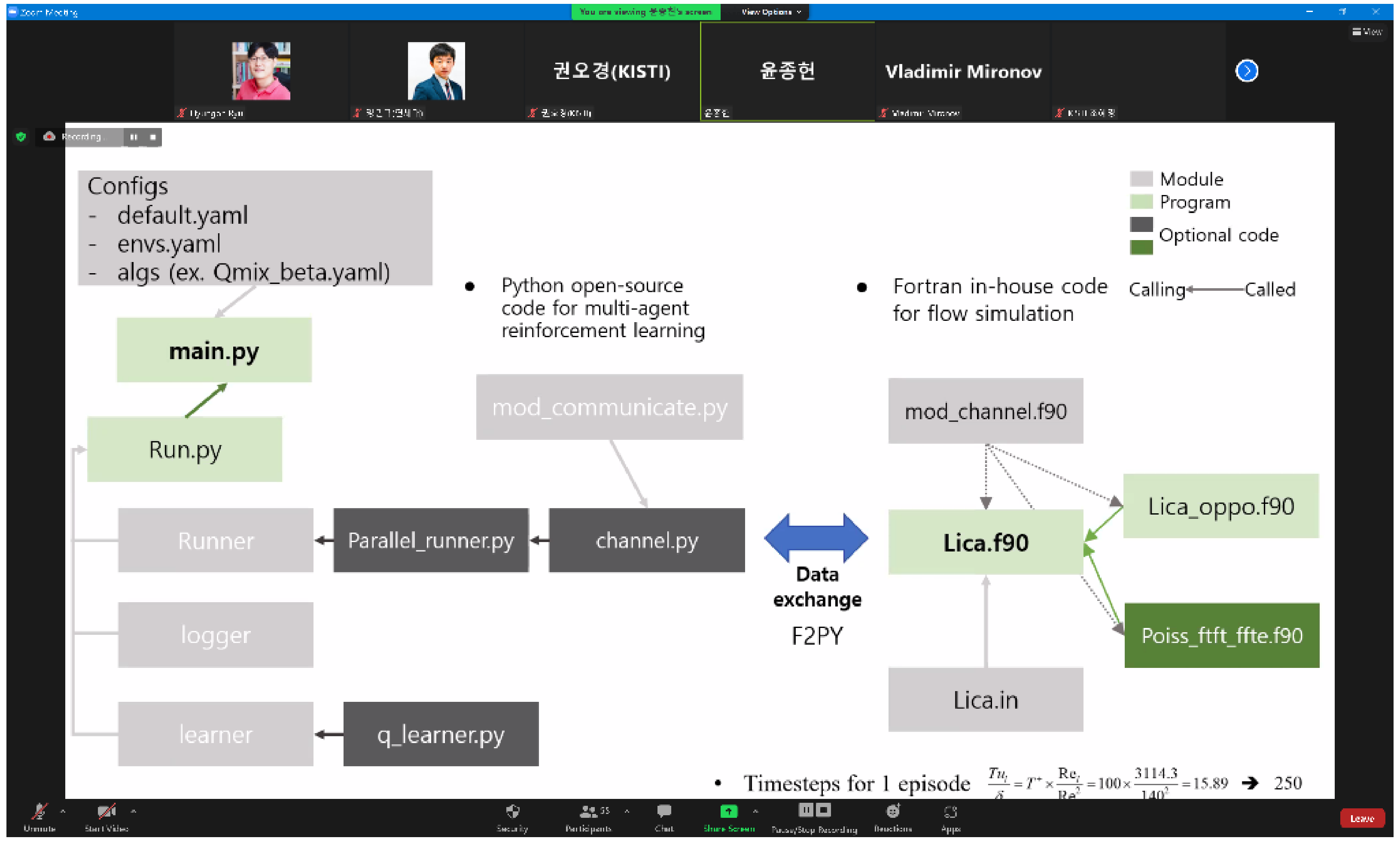
Research Collaboration in early stage

Enable AMP(mixed precision)
multiGPU(data parallel,model parallel)

NVAITC KOREA 연구협력 사례

KSC21 사례발표

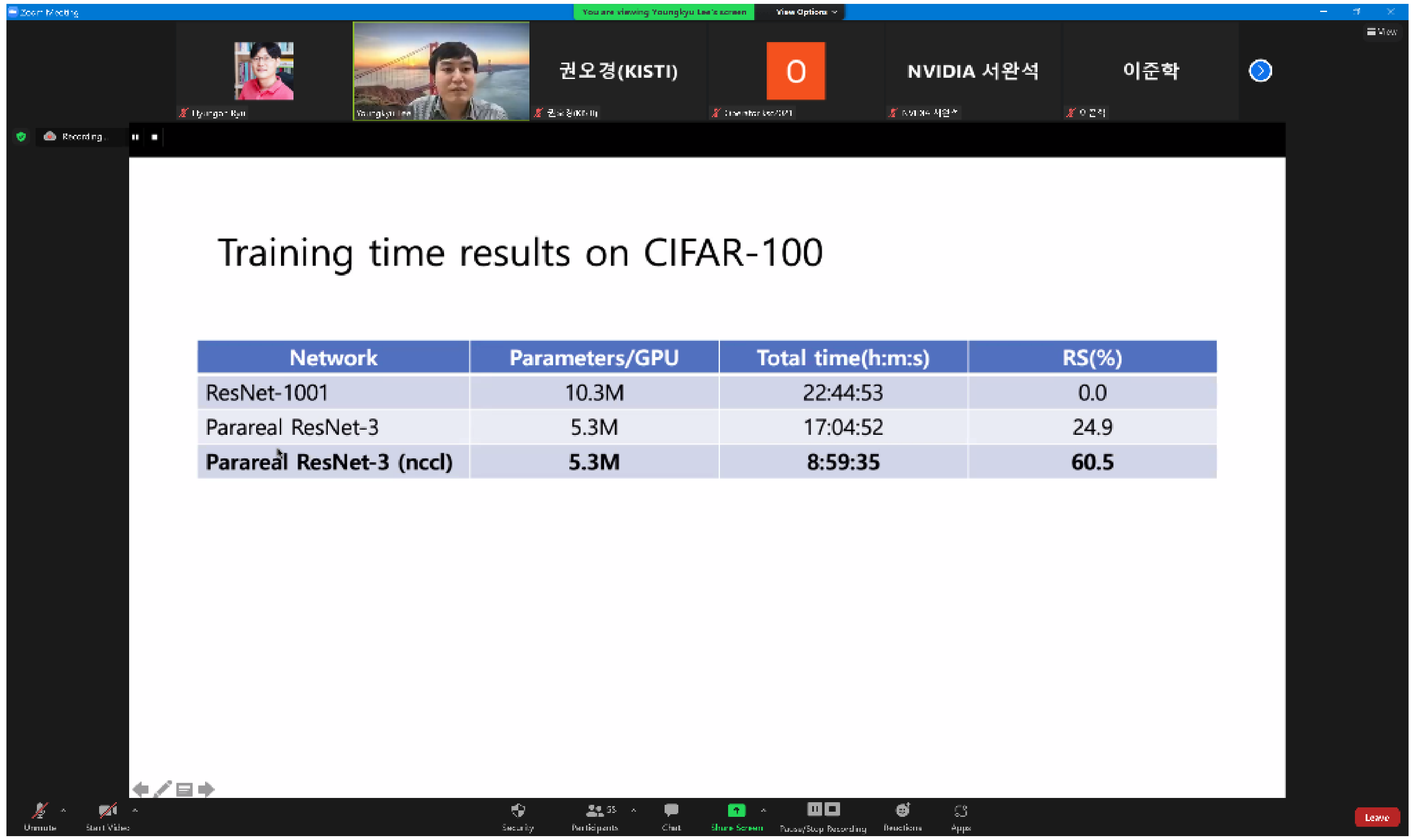
KISTI, 서울대학교,
FlowControl + RF(강화학습)


권오경(KISTI)
윤종헌
Vladimir Mironov
Configs
- default.yaml
- envs.yaml
- algs (ex. Qmix_beta.yaml)
main.py
Run.py
Runner
logger
learner
Parallel_runner.py
q_learner.py
mod_communicate.py
channel.py
Data exchange
F2PY
mod_channel.f90
Lica.f90
Lica_oppo.f90
Poiss_ftft_ffte.f90
Lica.in
Module
Program
Optional code
Calling
Called

- Python open-source code for multi-agent reinforcement learning
- Fortran in-house code for flow simulation
- Timesteps for 1 episode $\frac{Tu_i}{\delta} = T^* \times \frac{Re_i}{Re^2} = 100 \times \frac{3114.3}{140^2} = 15.89$ → 250

병목 원인 파악 및 Fotran과
python간의 데이터 통신 방법 개선

KISTI, KAIST,
ParaReal 모델 병렬화


You are viewing Youngkyu Lee's screen
View Options
권오경(KISTI)
NVIDIA 서완석
이준학

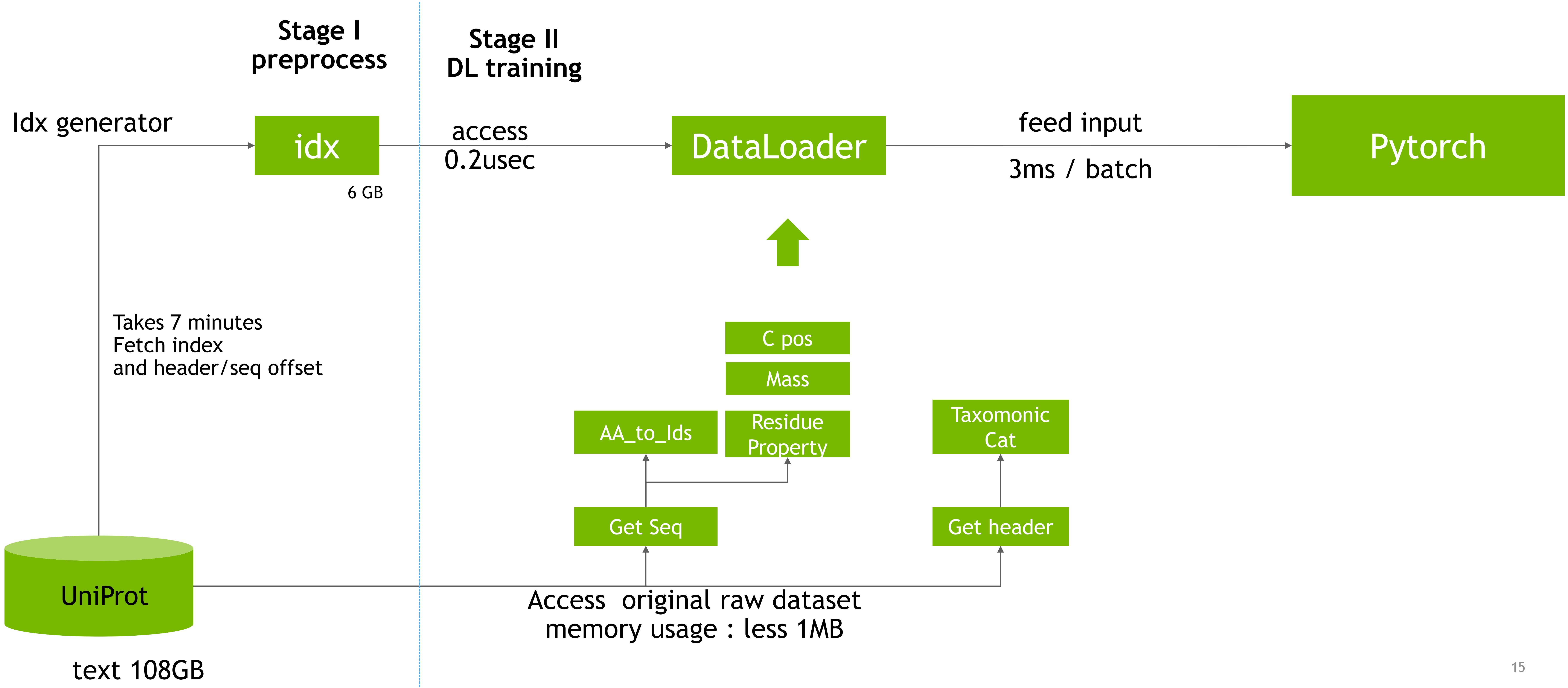
Training time results on CIFAR-100

Network	Parameters/GPU	Total time(h:m:s)	RS(%)
ResNet-1001	10.3M	22:44:53	0.0
Parareal ResNet-3	5.3M	17:04:52	24.9
Parareal ResNet-3 (nccl)	**5.3M**	**8:59:35**	**60.5**

NCCL 라이브러리를 통해 병렬화된
모델간 통신 개선

SMART DRUG DISCOVERY(신약개발)

FAI_Lite : FAsta Index Lite : Protein Sequence Dataset loader



Stage I
preprocess

Stage II
DL training

Idx generator

idx

6 GB

access
0.2usec

DataLoader

feed input

3ms / batch

Pytorch

Takes 7 minutes
Fetch index
and header/seq offset

C pos

Mass

AA_to_Ids

Residue Property

Taxomonic Cat

Get Seq

Get header

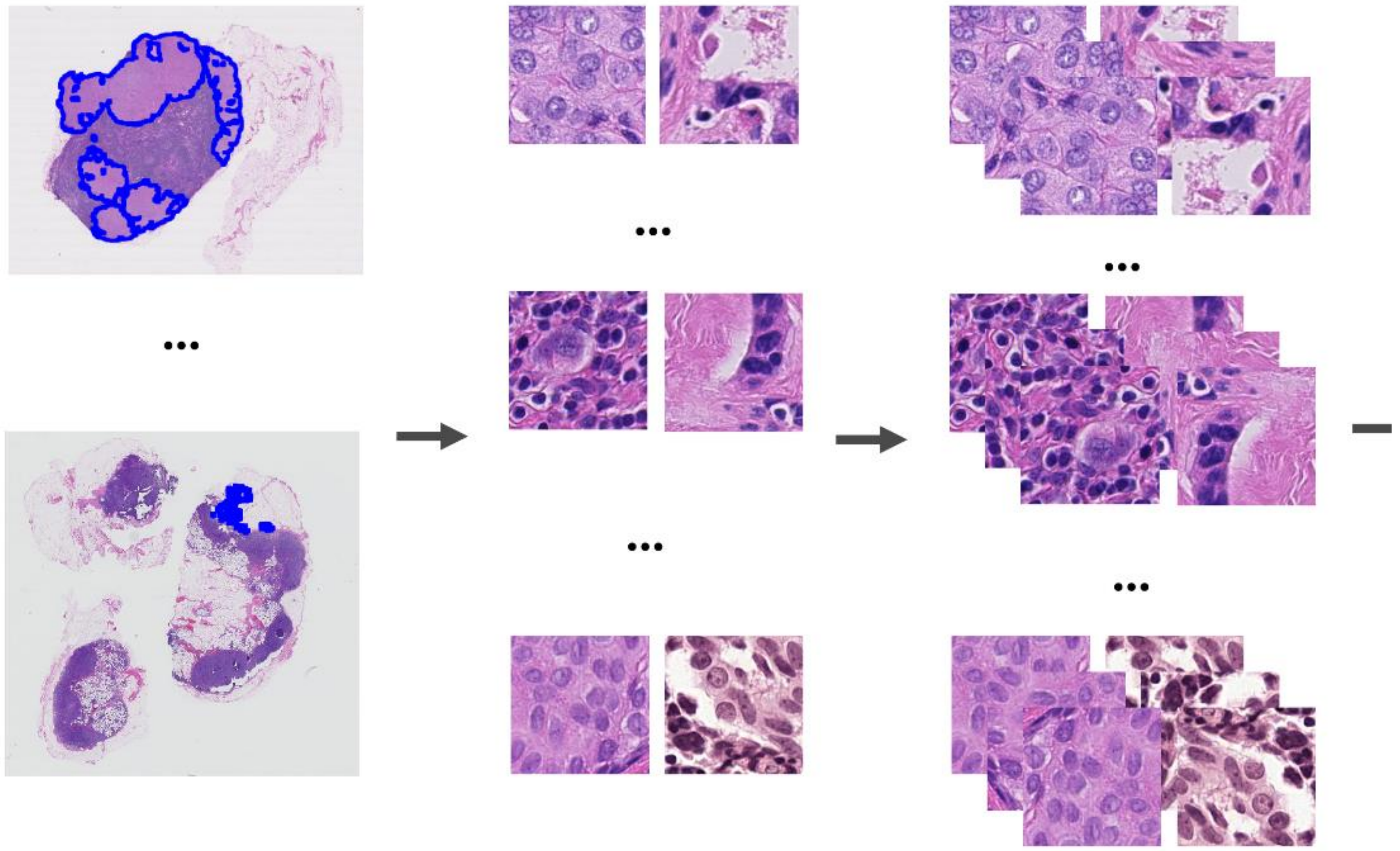
UniProt

Access original raw dataset
memory usage : less 1MB

text 108GB

HEALTHCARE - DIGITAL PATHOLOGY(임상병리)

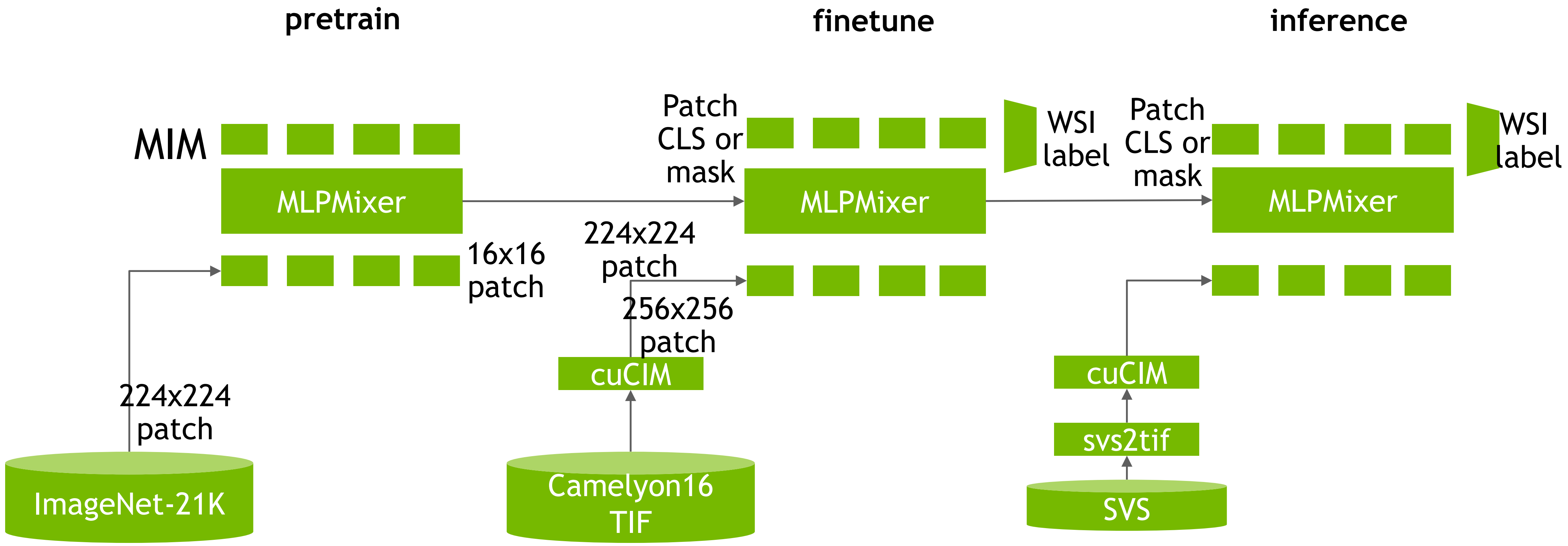
MLPMixer approach



WSI Images
~100k x 100k

Patches
224 x 224

Augmentation
224 x 224


pretrain
finetune
inference
MIM
MLPMixer
16x16
patch
224x224
patch
ImageNet-21K
Patch
CLS or
mask
MLPMixer
224x224
patch
256x256
patch
cuCIM
Camelyon16
TIF
WSI
label
Patch
CLS or
mask
MLPMixer
WSI
label
cuCIM
svs2tif
SVS

AI Graduate School

NVAITC Korea

Proposal to
류현곤 부장
hryu@nvidia.com

DLI
Bootcamp
Hackathon
Research Collaboration

NVIDIA HQ

- DevTech
- CWO
- ADLR
- DS SDK
- NEMO
- Clara SDK
- SIMNET
- cuQuantum

NVAITC WW

WW collaborators

- SG
- US
- HK
- TW
- JP
- EU

INCEPTION
PROGRAM

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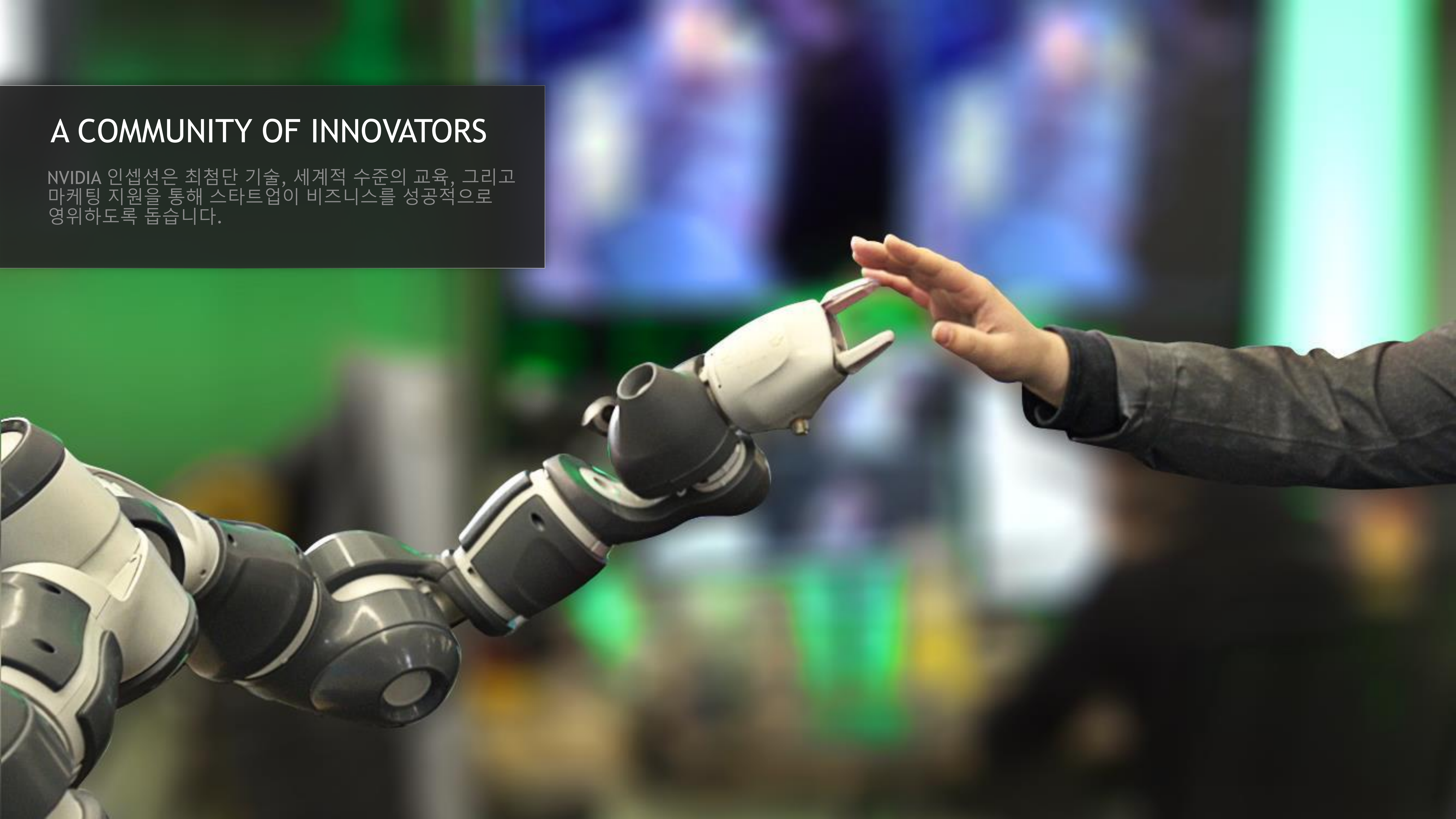
NVIDIA Developer Relations Manager 서완석상무

wseo@nvidia.com



A COMMUNITY OF INNOVATORS

NVIDIA 인셉션은 최첨단 기술, 세계적 수준의 교육, 그리고 마케팅 지원을 통해 스타트업이 비즈니스를 성공적으로 영위하도록 돕습니다.

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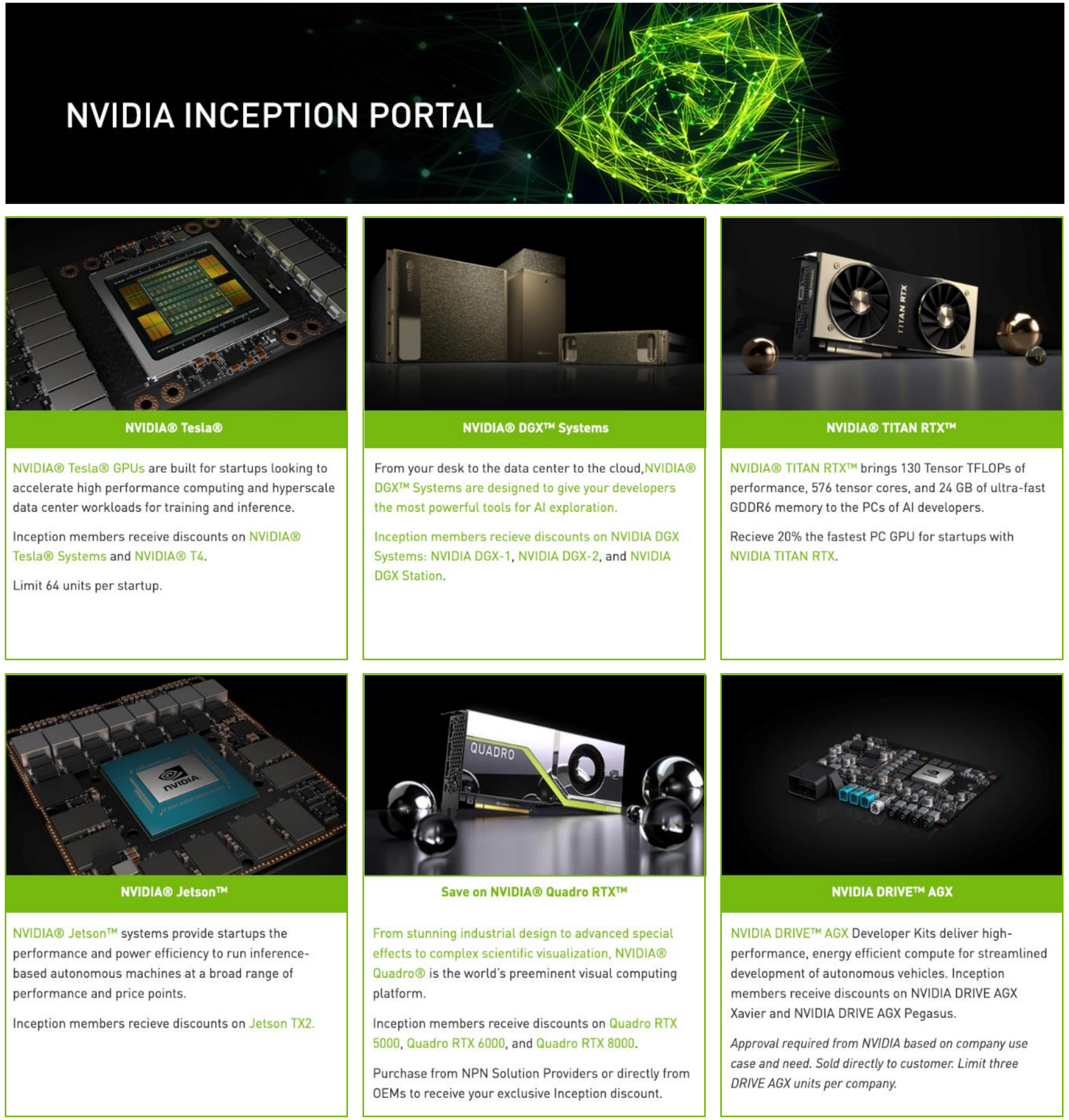
NVIDIA Inception 포털에는 기술 제품 및 서비스에 대한 최신 업데이트, 딥 러닝 인스티튜트(DLI) 크레딧을 활용하는 방법에 대한 지침, 예정된 행사 관련 정보, 마케팅 리소스, 뉴스 등이 포함되어 있습니다.

developer.nvidia.com/inception-portal



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NVIDIA® Tesla® GPUs are built for startups looking to accelerate high performance computing and hyperscale data center workloads for training and inference.

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Limit 64 units per startup.

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NVIDIA® TITAN RTX™ brings 130 Tensor TFLOPs of performance, 576 tensor cores, and 24 GB of ultra-fast GDDR6 memory to the PCs of AI developers.

Recieve 20% the fastest PC GPU for startups with NVIDIA TITAN RTX.

NVIDIA® Jetson™

NVIDIA® Jetson™ systems provide startups the performance and power efficiency to run inference-based autonomous machines at a broad range of performance and price points.

Inception members recieve discounts on Jetson TX2.

Save on NVIDIA® Quadro RTX™

From stunning industrial design to advanced special effects to complex scientific visualization, NVIDIA® Quadro® is the world's preeminent visual computing platform.

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NVIDIA DRIVE™ AGX Developer Kits deliver high-performance, energy efficient compute for streamlined development of autonomous vehicles. Inception members receive discounts on NVIDIA DRIVE AGX Xavier and NVIDIA DRIVE AGX Pegasus.

Approval required from NVIDIA based on company use case and need. Sold directly to customer. Limit three DRIVE AGX units per company.

마케팅 리소스

웹사이트 뱃지

귀사의 웹사이트에 귀사가 NVIDIA 인셉션 프로그램의 회원사임을 나타내 줍니다. 단, 사용 시 제공된 지침을 따라야 합니다.

소셜 미디어 이미지

NVIDIA가 귀사의 콘텐츠를 리포스팅 할 수 있는 기회를 갖길 원한다면 @NVIDIAAI를 태그 하십시오.

보도자료 템플릿

귀사가 NVIDIA 인셉션 프로그램 회원사로 선정됐음을 언론에 발표할 경우 포털에서 제공되는 템플릿을 활용하십시오. 단, 엔비디아는 회원사를 대신해 보도자료를 배포하지 않습니다.

NVIDIA 인셉션 포털에서 보도자료 템플릿, 웹사이트 뱃지, 소셜미디어 이미지를 확인해 보시기 바랍니다.

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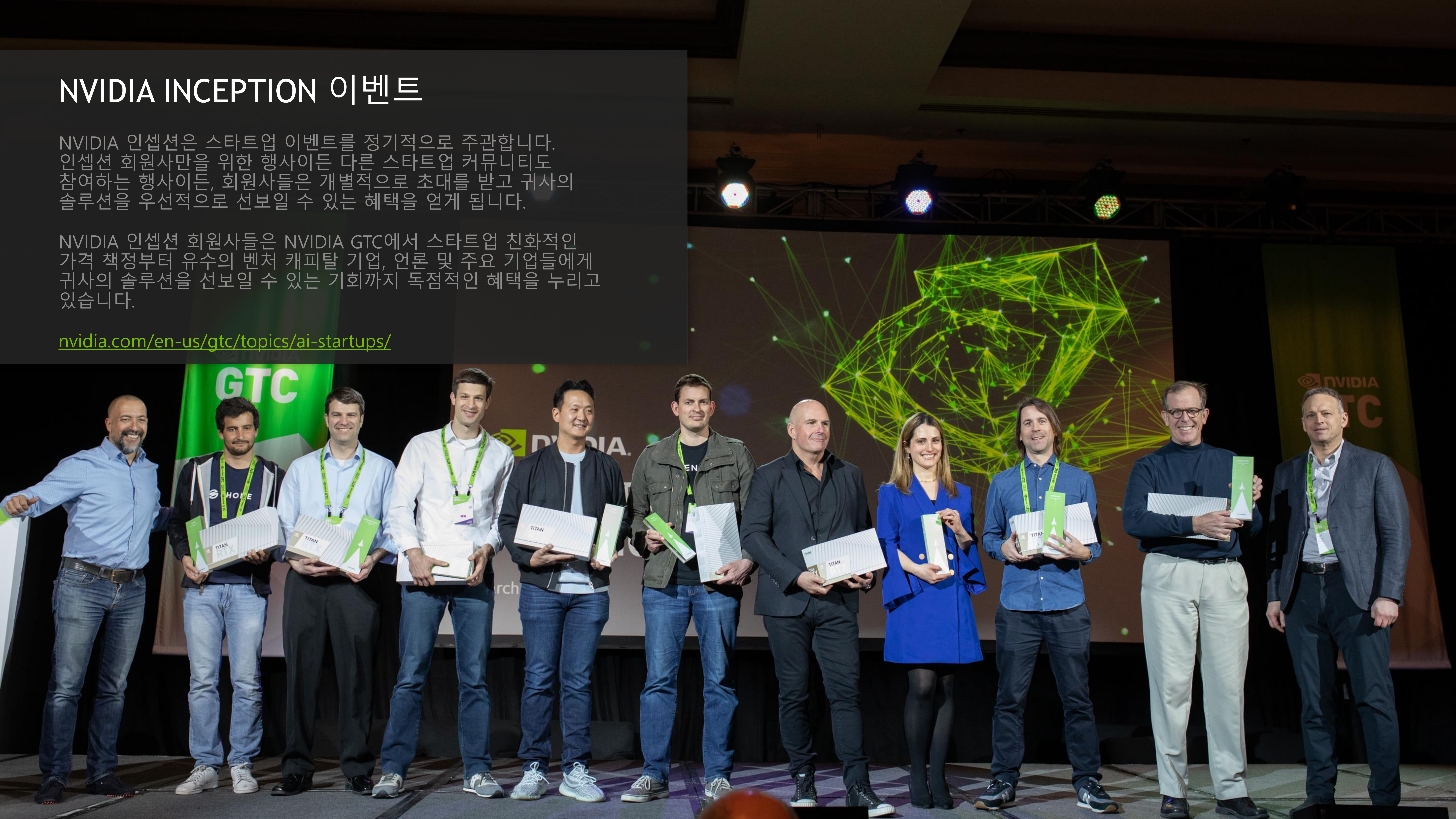
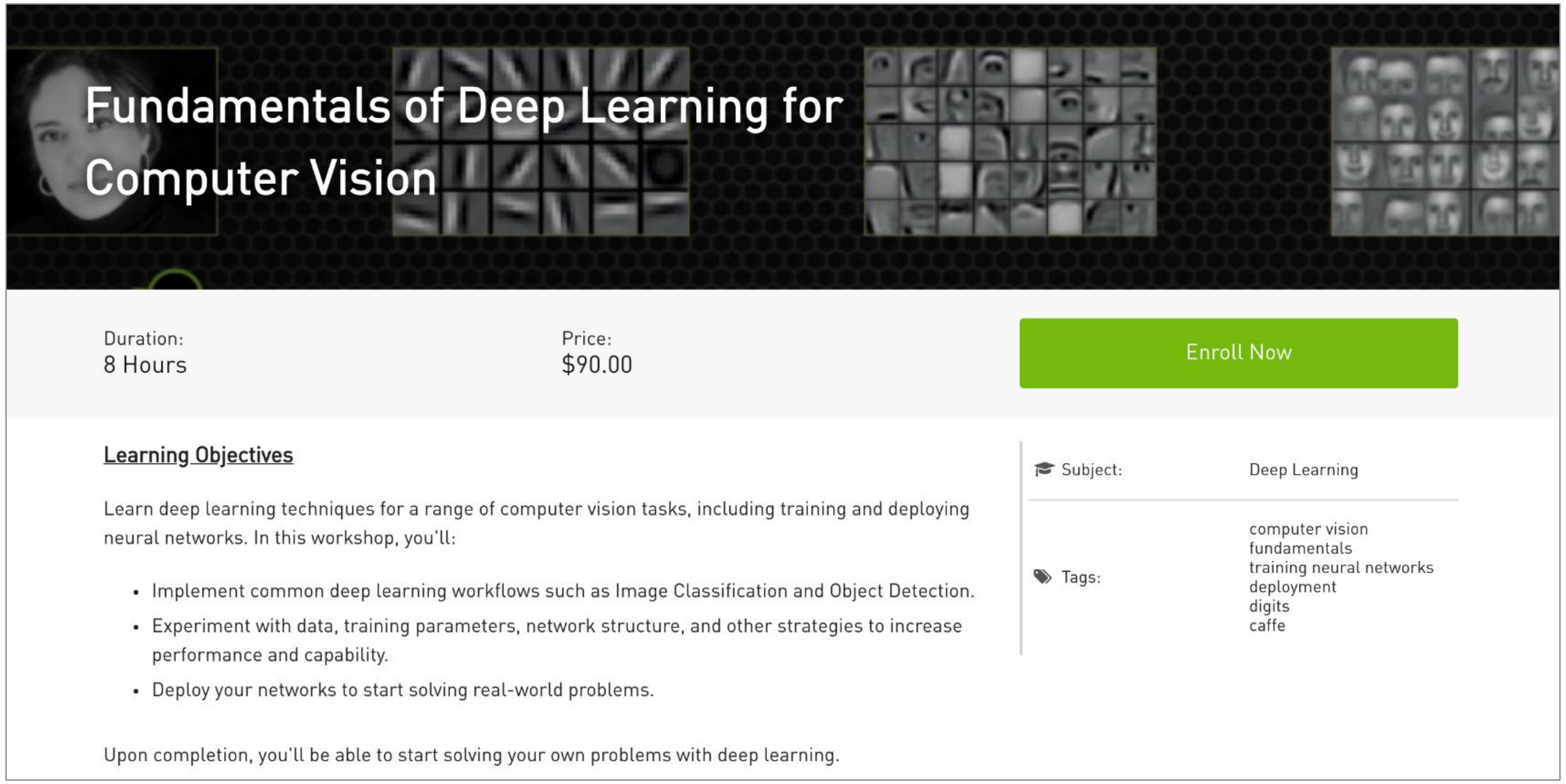
nvidia.com/en-us/gtc/topics/ai-startups/



교육



Fundamentals of Deep Learning for Computer Vision

Duration:
8 Hours

Price:
$90.00

Learning Objectives

Learn deep learning techniques for a range of computer vision tasks, including training and deploying neural networks. In this workshop, you'll:

- Implement common deep learning workflows such as Image Classification and Object Detection.
- Experiment with data, training parameters, network structure, and other strategies to increase performance and capability.
- Deploy your networks to start solving real-world problems.

Upon completion, you'll be able to start solving your own problems with deep learning.

Subject:	Deep Learning
Tags:	computer vision fundamentals training neural networks deployment digits caffe

인셉션 포털에서 NVIDIA 딥 러닝 인스티튜트(DLI) 무료 수강 크레딧 200개를 받으실 수 있습니다. 온라인으로 이용할 수 있는 20개 이상의 자기주도형 학습 과정을 통해, 귀사는 개발자를 대상으로 기초과정부터 산업별 딥 러닝 기술에 이르는 모든 것을 교육시킬 수 있습니다.

developer.nvidia.com/inception-benefits

nUp Program

글로벌 AI 스타트업
액셀러레이팅 프로그램

Ministry of SMEs and Startups

NVIDIA

KISED

KOREA UNIVERSITY
SEJONG CAMPUS

NVIDIA

엔업프로그램 2021 참가 기업

LionRocket
trimm
SAIGE RESEARCH
TEN
XAYIN7
BLUE QUOTIENT Good idea,a good answer

BlueStella
VUERON
Creative Content
DoubleMe Holographic Reality Experiences
MEDIPRESSO
Clari π Inc. AI MEDICAL IMAGING SOLUTIONS

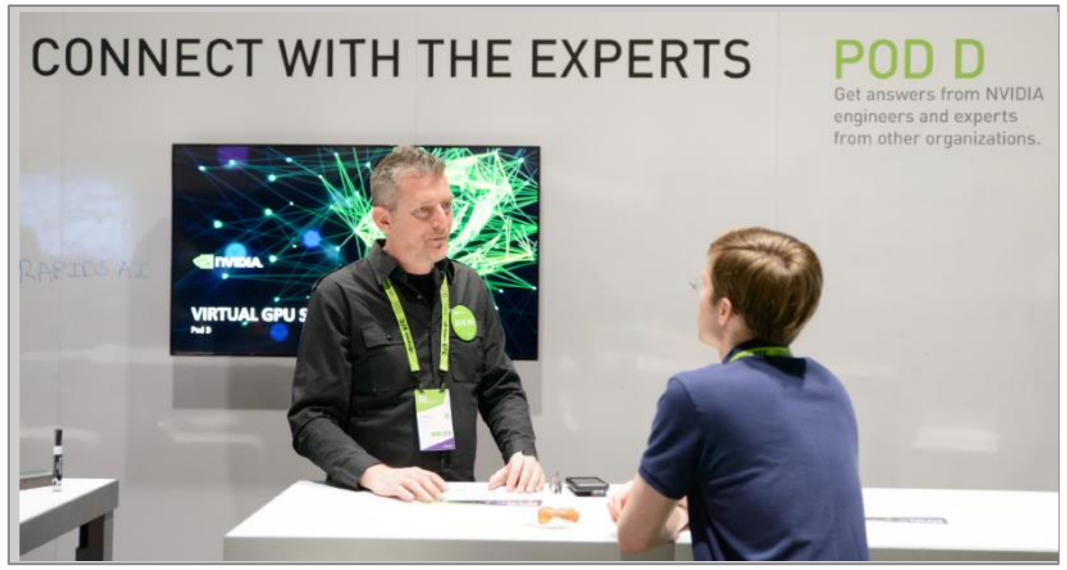
avokado lab
klleon
PHOTO GRAM Co., Ltd.
ONEIROS LABORATORY
TauData
ALETHIO

LIVEWALK
TFORUS TECHNOLOGY FOR US
RAZEN
MORAI
MORPHING I
SUPERBLY

SPINaWEB
3billion
EverEx
G1P
FASHION CREW
한국공간데이터 Korea Space Data

엔업 프로그램 2021 지원 현황

교육 프로그램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NVIDIA
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기술 프로그램

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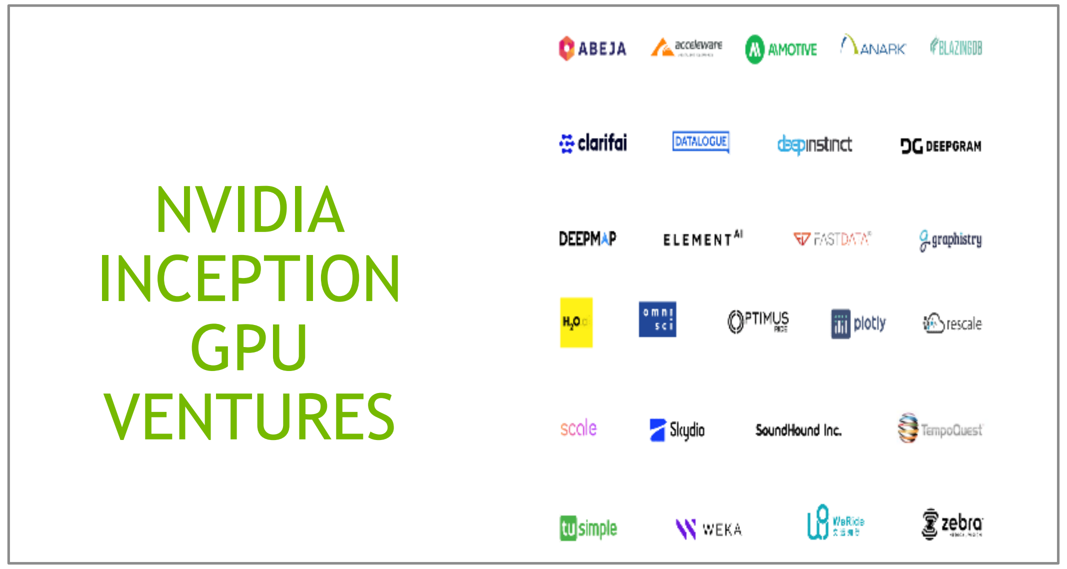
nvidia.com/en-us/gtc/topics/ai-startups/

판로 개척


NVIDIA
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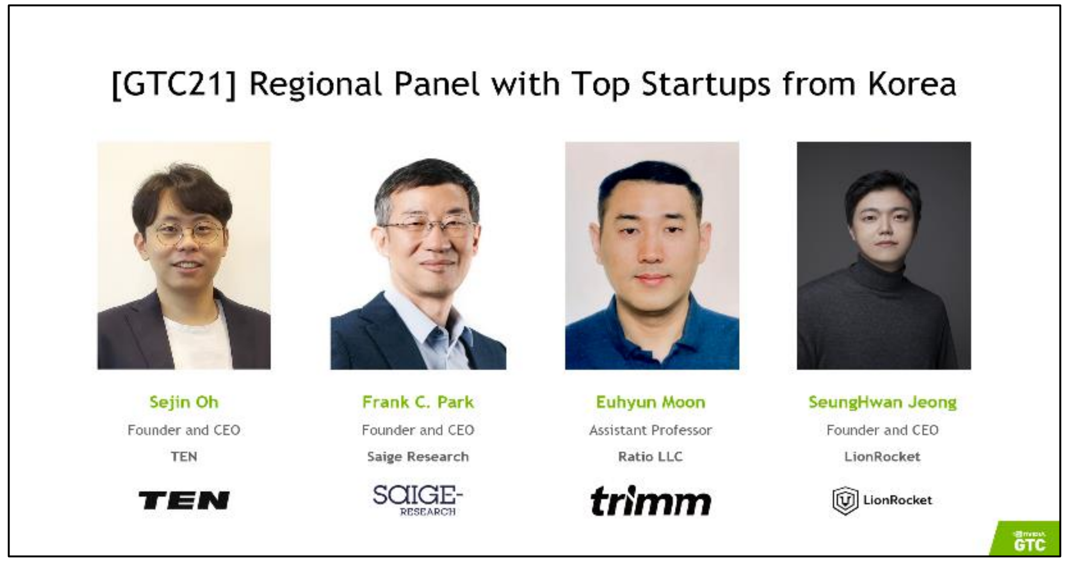
accelevare
AIMOTIVE
ANARK
BLAZINGDB
clarifai
DATALOGUE
deepinstinct
DEEPGRAM
DEEPMAP
ELEMENT AI
FASTDATA
graphistry
H2O
OMNI SCI
OPTIMUS
plotly
rescale
scale
Skydio
SoundHound Inc.
TempoQuest
tusimple
WEKA
zebra

투자 유치



[GTC21] Regional Panel with Top Startups from Korea

Sejin Oh
Founder and CEO
TEN

Frank C. Park
Founder and CEO
Saige Research

Euhyun Moon
Assistant Professor
Ratio LLC

SeungHwan Jeong
Founder and CEO
LionRocket

TEN
SAIGE RESEARCH
trimm
LionRocket
NVIDIA GTC

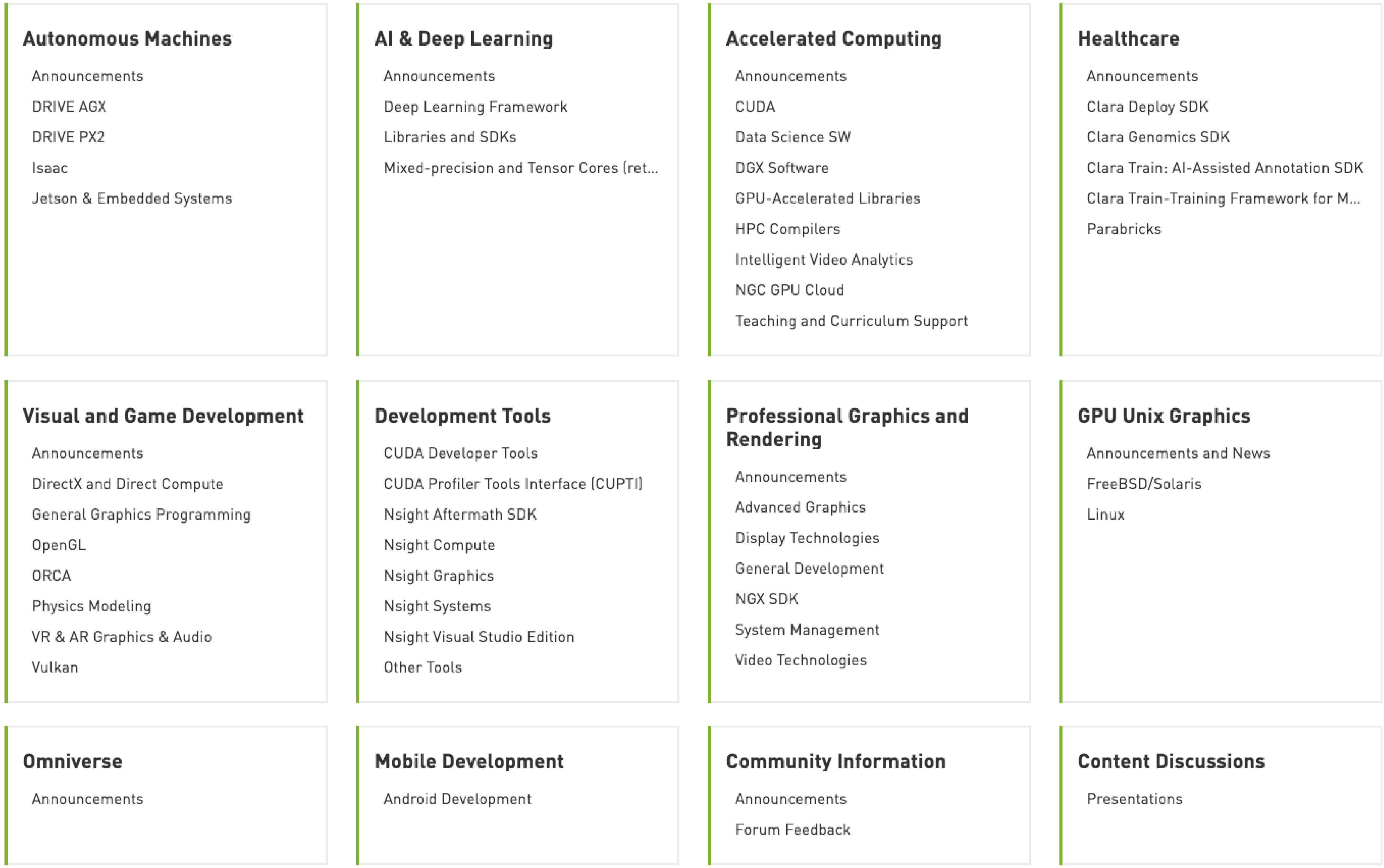
마케팅 / 네트워킹

기타 분야

NVIDIA 개발자 프로그램

NVIDIA 개발자 프로그램을 통해 귀사의 엔지니어들은 최신 엔비디아 SDK는 물론, 여러 NVIDIA 포럼에서 논의된 기술적인 질문에 대한 답변에 액세스 할 수 있으며, 개발자를 위한 다양한 이벤트에 초대받을 수 있습니다.

developer.nvidia.com



Autonomous Machines
- Announcements
- DRIVE AGX
- DRIVE PX2
- Isaac
- Jetson & Embedded Systems

AI & Deep Learning
- Announcements
- Deep Learning Framework
- Libraries and SDKs
- Mixed-precision and Tensor Cores (ret...

Accelerated Computing
- Announcements
- CUDA
- Data Science SW
- DGX Software
- GPU-Accelerated Libraries
- HPC Compilers
- Intelligent Video Analytics
- NGC GPU Cloud
- Teaching and Curriculum Support

Healthcare
- Announcements
- Clara Deploy SDK
- Clara Genomics SDK
- Clara Train: AI-Assisted Annotation SDK
- Clara Train-Training Framework for M...
- Parabricks

Visual and Game Development
- Announcements
- DirectX and Direct Compute
- General Graphics Programming
- OpenGL
- ORCA
- Physics Modeling
- VR & AR Graphics & Audio
- Vulkan

Development Tools
- CUDA Developer Tools
- CUDA Profiler Tools Interface (CUPTI)
- Nsight Aftermath SDK
- Nsight Compute
- Nsight Graphics
- Nsight Systems
- Nsight Visual Studio Edition
- Other Tools

Professional Graphics and Rendering
- Announcements
- Advanced Graphics
- Display Technologies
- General Development
- NGX SDK
- System Management
- Video Technologies

GPU Unix Graphics
- Announcements and News
- FreeBSD/Solaris
- Linux

Omniverse
- Announcements

Mobile Development
- Android Development

Community Information
- Announcements
- Forum Feedback

Content Discussions
- Presentations

NVIDIA 인셉션 클라우드 파트너

ORACLE for Startups

- 최대 3개월 동안 매월 1만 5천달러 상당의 클라우드 크레딧 제공(최대 4만 5천달러)
- 2년간 클라우드 크레딧 가격 70% 할인
- 오라클 클라우드에 곧 탑재 될 NVIDIA A100 Tensor Core GPU에 대한 액세스 제공

Microsoft for Startups

- 애저(Azure) 클라우드에서 NVIDIA GPU 기반 무료 크레딧 최대 12만 달러 지원

aws activate

- 2년간 유효한 2만 5천 달러 상당의 AWS 프로모션 크레딧 또는 1년간 유효한 1만 달러 상당의 AWS 프로모션 크레딧
- 1년 간의 AWS 비즈니스 지원 (최대 1만 달러)

비즈니스 성장에 따른 프로그램 혜택

모든 스타트업은 커뮤니티 회원으로 엔비디아 인셉션에 참여합니다.

시간이 지남에 따라 성숙한 기업은 보다 다양한 마케팅 지원과 전담 매니저가 따르는 프리미어 지위로 격상될 수 있습니다.

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INCEPTION PROGRAM

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