2025 NCHC Open Hackathon

NCHC X OpenACC X NVIDIA

Jay Chen
NVIDIA Solution Architect | NCHC Open Hackathon Organizer
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OpenACC
More Science, Less Programming

2025 NCHC Open Hackathon

Important Dates

- ~~10 / 22 (Wed)：Day 0: Kick-off Meeting 15:00~17:00 PM (Online)~~
  - ~~5-minute presentation per team~~

- ~~10 / 29 (Wed)：Day 1: Scrum #1 Meeting 15:00~16:00 PM (Online)~~
  - ~~5-minute presentation per team~~

- ~~11 / 05 (Wed)：Day 2: Scrum #2 Meeting 15:00~16:00 PM (Online)~~
  - ~~5-minute presentation per team~~

- **11 / 12 (Wed)：Final Day 10:00~16:00 PM (In-person at NCHC)**
  - **12-minute presentation + 3-minute Q&A per team**

It is not easy

Thanks Teams and Mentors

3 Weeks

Typhoon Fung-Wong

Computing Resources

Talents & Mentors
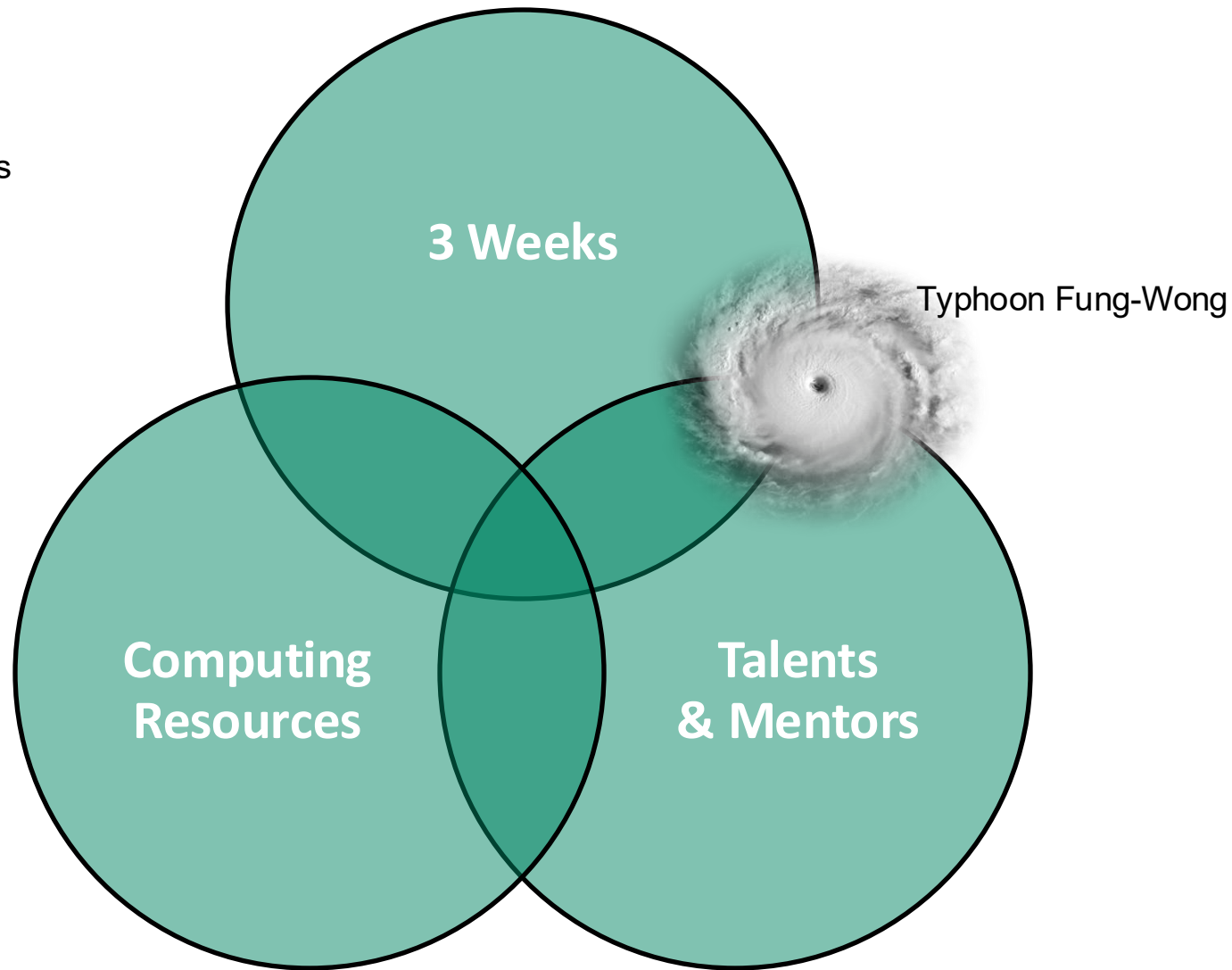
OPENACC – CELEBRATING 15 YEARS

Building Community.

Ecosystem Development

Training/Education

OpenACC Specification

NCHC 超級電腦為台灣研究帶來大躍進

220*H200-NVL8 + 2*GB200-NVL72
https://blogs.nvidia.com.tw/blog/taiwan-research-supercomputer/
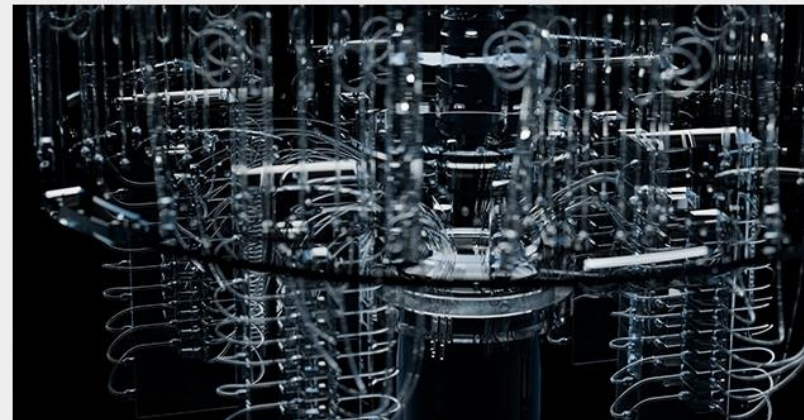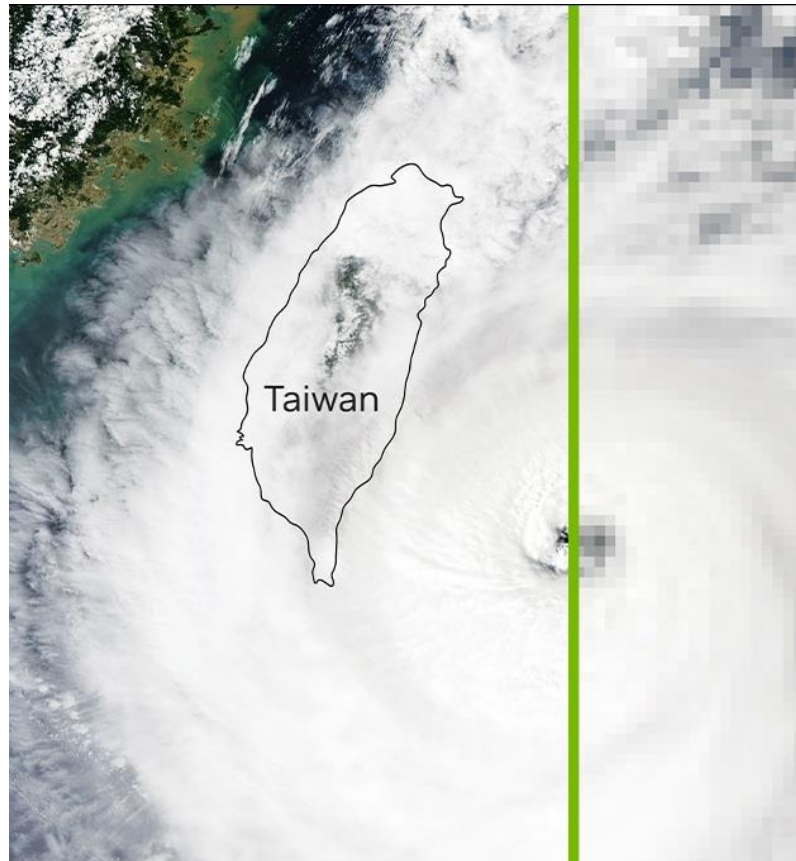
CUDA-X Accelerates Every Industry

6.5M+ Developers & 900+ SDKs/Models

cuLitho
Computational Lithography

cuDSS
CAE

cuOpt
Decision Optimization

Warp
Physical Simulation

cuDF
Data Processing

PhysicsNeMo
AI Physics
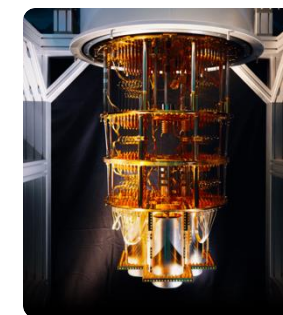
CUDA-Q
Quantum Computing
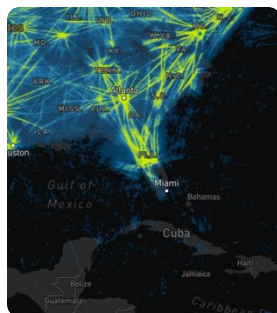
cuEquivariance
Drug & Materials Discovery

ALCHEMI
AI Materials Science

Holoscan
Edge HPC
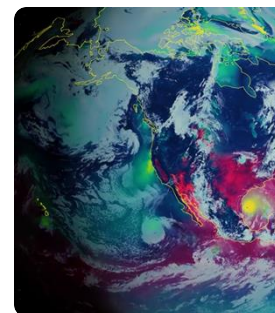
Earth-2
Weather Analytics
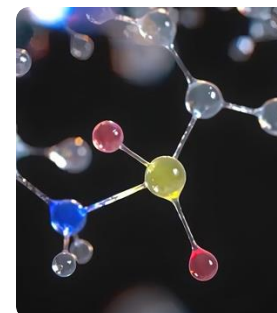
Parabricks
Gene Sequencing

cuPyNumeric
Numerical Computing

OpenACC — More Science, Less Programming

OPEN HACKATHONS

NCHC 國家實驗研究院 國家高速網路與計算中心 National Center for High-performance Computing
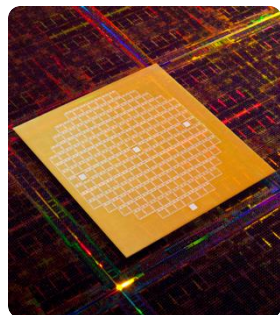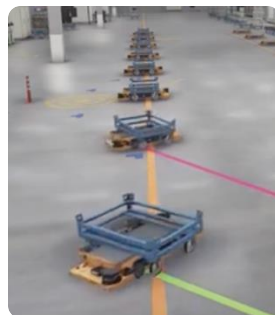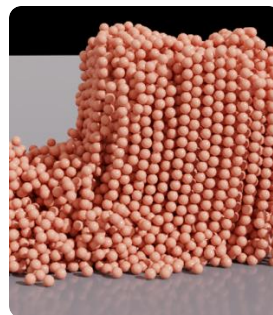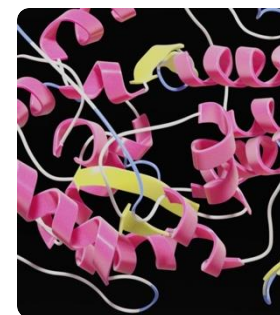
NVIDIA.

NCHC x NVIDIA Workshops/Bootcamps/Hackathons

Since 2020

Events

50+

Developers

2300+

NCHC x NVIDIA Workshops/Bootcamps/Hackathons

Since 2020

Agenda

Welcome and Event Overview		10:00~10:15	
HPC Session		**10:15-11:30**	**Speedup**
Team-02	Usagi	10:30~10:45	777.7x
Team-06	PTSG Taiwan	10:45~11:00	15.0x
Team-04	Qa-MolGen	11:00~11:15	5417.9x
Team-10	CYCU Power Lab	11:15~11:30	109.2x
Break & Group Photo		**11:30~11:45**	

Lunch Time		11:45~13:15	
AI Session		**13:15-15:00**	**Speedup**
Team-09	Paw Patrol	13:30~13:45	8.5x
Team-03	Parallel	13:45~14:00	85.0x
Team-07	AI-Taiwan VVM	14:00~14:15	12.8x
Team-08	NDVIgnition	14:15~14:30	7.2x
Team-05	NYCU_Bocchi the CUDA!	14:30~14:45	4.6x
Wrap-up		**14:45~15:00**	

Invited Opening Speaker

Bharatkumar Sharma

NVIDIA Senior Technical Program Manager

- Tech Leader with years of experience in research, technology adoption, developer community, and mentoring at Hackathons.
- Engineering background in Parallel and High Performance Computing with proven abilities to build and manage remote teams at both technical and management level.
- Development and Research experience in the field of Software Architecture, Distributed, and Parallel Computing.
- Published papers and journal articles in the field of Parallel Computing and Software Architecture.

Invited Opening Speaker

Eric Kang

NVIDIA Senior Solution Architect Manager

Eric Kang leading the Solutions Architect team in NVIDIA, working with customers and partners to deliver the world's best solutions for artificial intelligence, deep learning and machine learning, professional visualization, and high-performance computing. Specializing in NVIDIA's advanced solutions architecture planning, he has in-depth research on high-performance computing and deep learning computing architecture and participates in relevant important projects architecture planning. Prior to joining NVIDIA, he served in HP Enterprise and as solutions consultant lead for data center transformation practice. Experience including high-performance computing, advanced data center planning, private cloud and public cloud management solutions, data center management automation.

HACKATHON EVOLUTION

Residual of chance

problems and solutions

| Mon | Tue | Wed | Thurs | Fri |

Peak of youthful ignorance | Pit of Despair | Slope of hope | Plateau of Enlightenment

OpenACC More Science. Less Programming

OPEN HACKATHONS

NCHC 國家高速網路與計算中心 National Center for High-performance Computing

NVIDIA.

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Nov 16-21 SuperComputing 2025
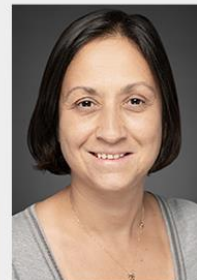
Ian Buck (NVIDIA) will lead a discussion with global leaders:
- Ceren Susut (U.S. Department of Energy (DOE)),
- Dan Stanzione (Texas Advanced Computing Center (TACC)),
- Thomas Lippert (Jülich Supercomputing Centre (JSC)),
- and Satoshi Matsuoka (RIKEN).

Gain insights into how AI is revolutionizing drug discovery, astrophysics, materials science, and more.

Thank You

50+ contributors in this hackathon

2	Usagi	Lead	Hsin-Lu (葉欣綠) Yeh
		Member	Jui-En Li
		Member	Hsuan-Chi Liu
		Member	Tso-Fei Yen
		Member	Chia-Yi Chin
		Member	Jui-Chien Tsou
		Member	Wei-Chin Wang
		Member	Kuan-Hsun Tu
		Member	Fan-Shi Liu
		Mentor	Reese Wang
		Mentor	Johnson Sun
3	Parallel	Lead	KUAN-LIN (김채원) CHEN
		Member	SYUAN-HAO LI
		Member	CHIA-YU YANG
		Member	PIN-HSUAN HO
		Member	SHANG-CHE HSIEH
		Mentor	Ken Liao
4	Qa-MolGen	Lead	Yu cheng (蕭宇承) Xiao
		Member	Yu-Ze Chen
		Member	Shu-Chi Wu
		Member	Ka-Lok Ng
		Member	Astuti Aninda
		Member	Tsu-Ling Kuo
		Mentor	Pika Wang
5	NYCU_Bocchi the CUDA!	Lead	Chu-Siang Tseng
		Member	Cheng-Zong Li
		Member	Kai-Jie Lin
		Member	Hsien-Cheng Huang
		Mentor	Shijie Wang
		Mentor	Virginia Chen

6	PTSG Taiwan	Lead	Ming-Chieh (林銘杰) Lin
		Member	Cheng-Cheng Yeh
		Member	Feng-Hua Chang
		Mentor	Leo Chen
		Mentor	Yang-Hsien (+Chao-Shun) (+Richard) Lin (+ Zhan) (+ Huang)
7	AI-Taiwan VVM	Lead	YI CHANG (陳逸昌) CHEN
		Member	Chun-Kai Hsu
		Member	Min-Ken Hsieh
		Mentor	Cliff Chiu
		Mentor	Iven Fu
8	NDVIgnition	Lead	HAN YIN CHANG
		Member	Ge-Han Wu
		Member	Ping Chen Hsieh
		Member	Chen-Yuan Chung
		Member	Pin-Cheng Chan
		Mentor	Rick Wu
9	Paw Patrol	Lead	Chen-Hao (黃晨皓) Huang
		Member	Calvin Ku
		Member	Zih-Syuan Jhan
		Member	TsungHsun Tsai
		Member	Pu Ching
		Member	ShangChing Liu
		Mentor	Johnson Sun
10	CYCU Power Lab	Lead	Christian Lian Paulo Perez Rioflorido
		Member	Hoang Phuong Van
		Member	孟澤 李
		Mentor	Pika Wang

	Infra Management	Johnson Sun
	Event Host	Jay Chen
	Account Manager	Vincent Chiu
	SA Manager	Eddie Huang
	SA Manager	Eric Kang
	DevTech Manger	Ryan Jeng
Staff	Hackathon Team Manager	Bharat Kumar
	Hackathon Team	Apoorva Laharia
	Hackathon Team	Yash Gupta
	Marketing	Jinny Lin
	NCHC host	Zhoujin Wu
	LLM Mentors	宜庭 蔡
	LLM Mentors	祐萱 林

Thank You

Feedback Survey: https://forms.office.com/r/aB2aXG0Wc8

- A100/H100 Cluster will be reset by today, please backup your data!
- Welcome any feedback by scanning the QR code.

NCHC Open Hackathon 2025 - Feedback Survey