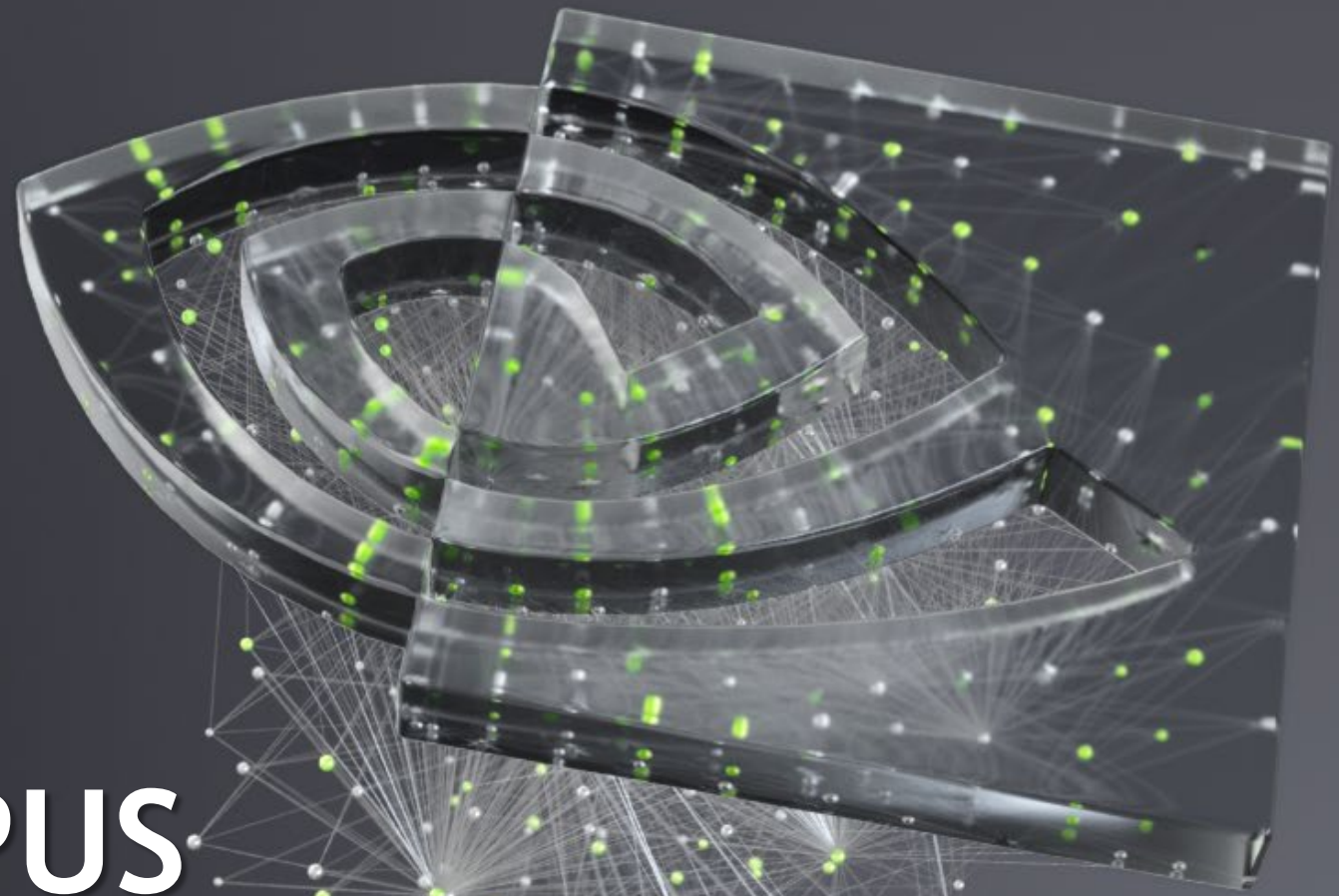


BACK TO CAMPUS TO LEARN YOUR AIs

Higher Education & Research Training

October 2021

Presenters

Cheryl Martin

Director of Global Business Development
for Higher Education & Research, NVIDIA

David Hiatt

Global Industry Business Development
for Higher Education & Research, NVIDIA

Agenda

- HER Industry Snapshot and Emerging Trends
- Key Use Cases and Examples
- Helping Customers Get Started
- Next steps
- Q&A

WHAT'S UNIQUE ABOUT HER?

- Mission
  - Workforce enablement
    - Recruit and train future generations of researchers, workers, and educators
    - Develop curriculum
  - Research
    - Conduct and publish groundbreaking research that impacts society, brings recognition and funding, attracts talent and increases university prestige
- Funding dependent and can be price sensitive
  - Large amount of research funding goes to individual PI's
  - Grant funded >> DIY'ers
  - IT can combine grants for shared "condo" model
- Often longer time between technology refresh vs. Enterprise
- Fiercely independent and competitive
  - Institutions and individual researchers
- Researchers are a highly collaborative community

CHALLENGES IN HIGHER EDUCATION

BATTLE FOR FUNDING

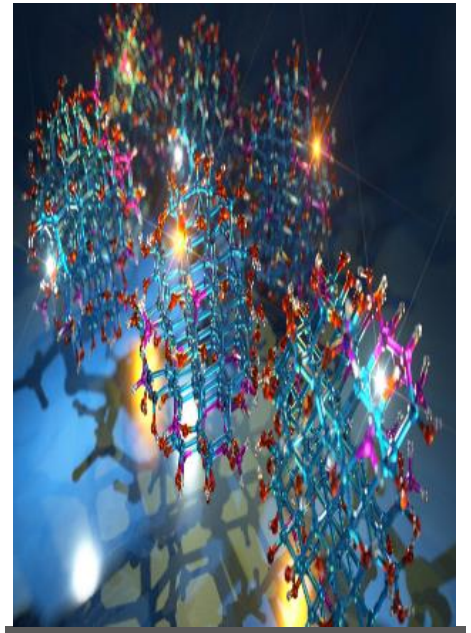
More researchers competing for level funding dollars. IT budgets not growing to match technology infrastructure demands

ATTRACTING BEST TALENT

Funds and lab equipment deciding factor for faculty & students

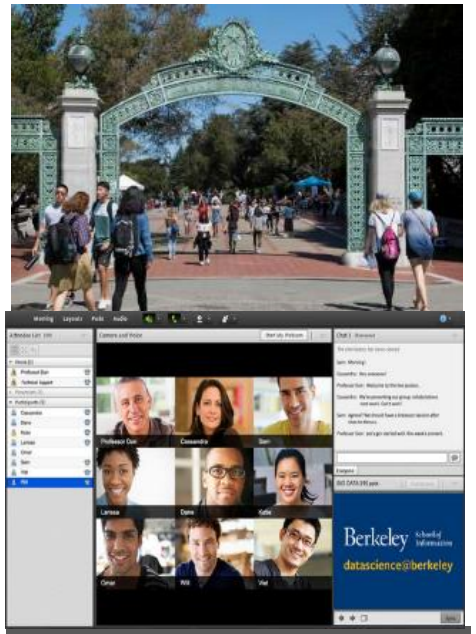
CHANGING CURRICULA

Demand for skilled data scientists & AI expertise requires students to hit the ground running after graduation



RESEARCH COMPLEXITY

Research problems, student projects more complex than ever; data sets & compute requirements growing exponentially

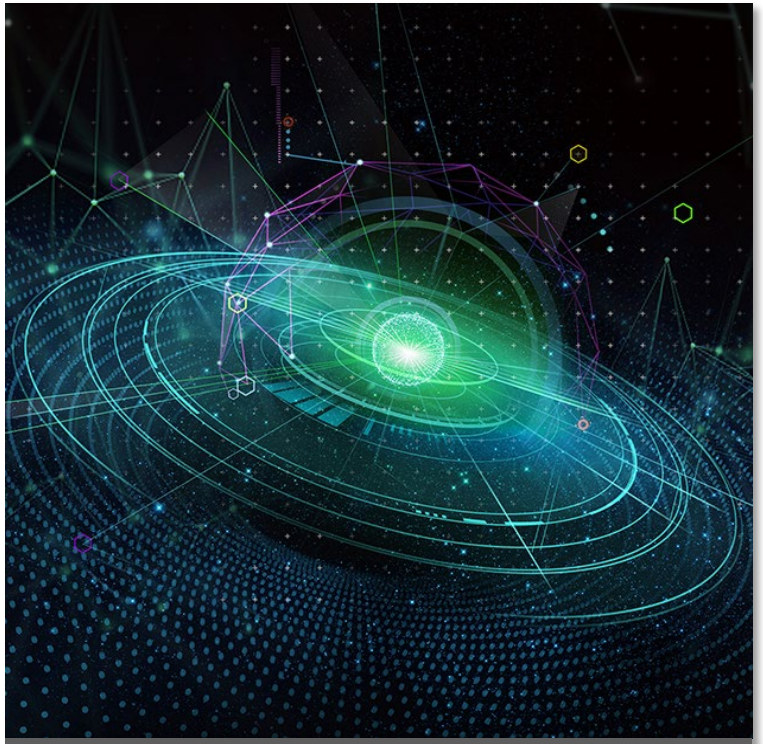


IN-PERSON & DISTANCE LEARNING

Distance learning at-scale introduces a new set of challenges for educators, researchers, students and IT-Staff

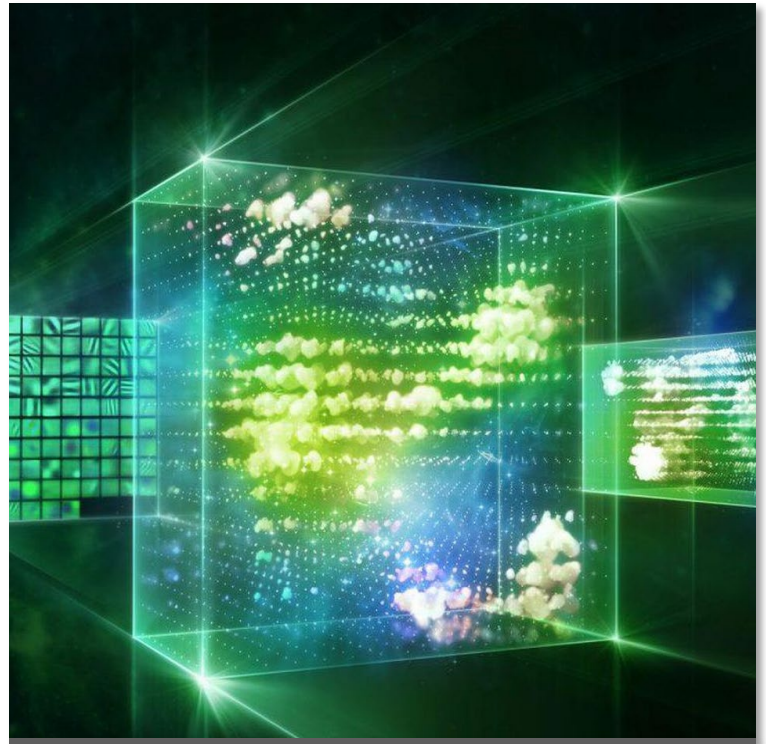
NVIDIA IN HIGHER EDUCATION & RESEARCH

DRIVING GPU ADOPTION



AI AND DATA SCIENCE JOB GROWTH
Top, new professions driving education curriculum

NATIONAL AI INITIATIVES
Many countries increasing funding for AI programs to be AI competitive



AI ACROSS THE UNIVERSITY
Almost every domain in a University has an opportunity to use AI

THE AI UNIVERSITY TRANSFORMATION

WORKFORCE READY SKILLS DEVELOPMENT

- AI and Data Science Faculty
- Workforce aligned curriculum
- Hands on learning
- Experience with Industry-grade tools, industry-grade infrastructure and real-world scale data

GROUND-BREAKING RESEARCH

- Attract new funding & joint research opportunities
- Attract top research talent
- AI compute infrastructure
- Access to expertise and support for software optimization
- Early access to AI software

COMMUNITY ENGAGEMENT

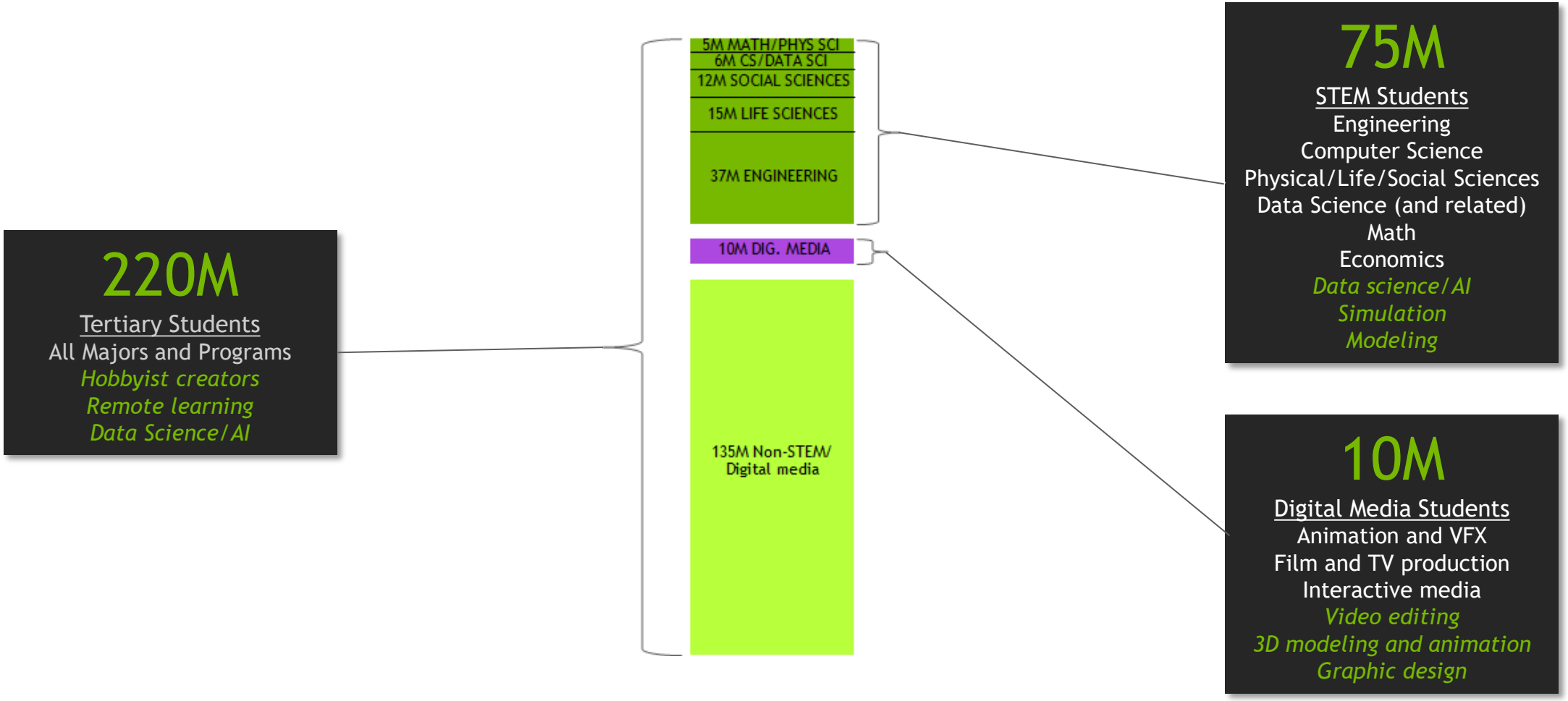
- Local economic development
- Industry Partnerships
- AI National program alignment
- Primary and Secondary education, community college and feeder school development
- AI Start-up and incubator programs

SIZING THE HIGHER EDUCATION MARKET

Pull Through for AI/Data Science Deals is up to 3x

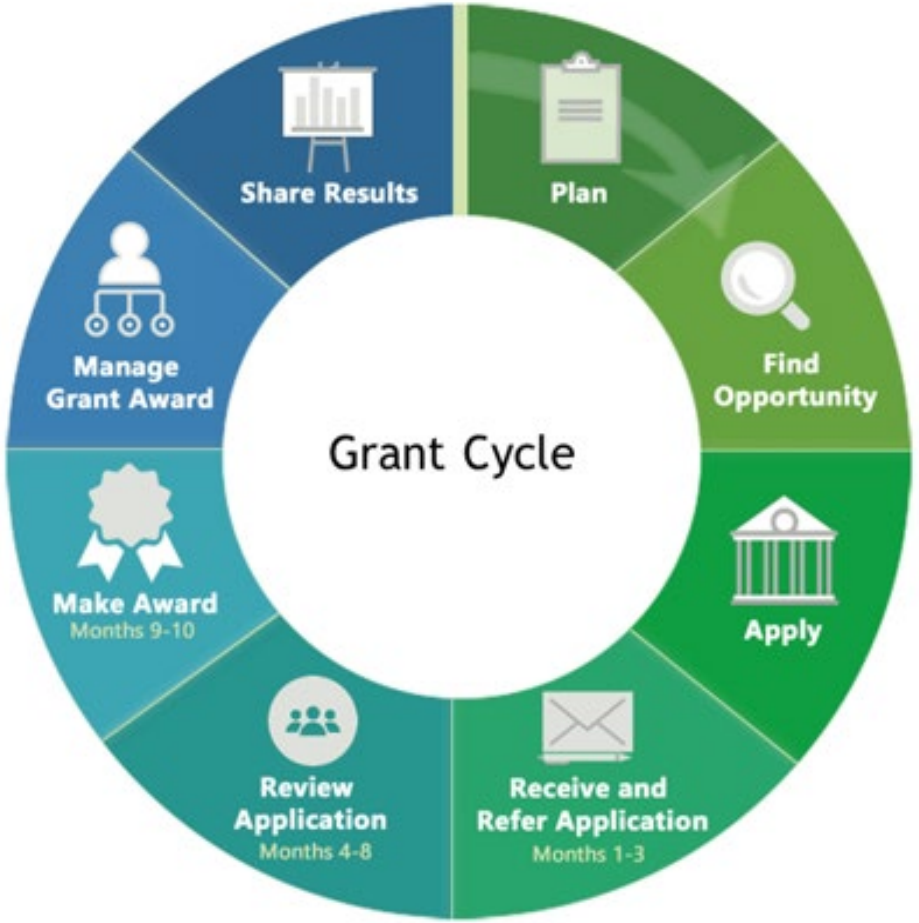
THE GLOBAL EDUCATION OPPORTUNITY

86M stem and digital media students worldwide



FUNDING PRACTICES FOR SCIENTIFIC RESEARCH

- Grant funding sources
  - Government, Institutions, Foundations, Industry, Donations
- Funding approvals take time
- Why you should care:
  - AI research is HOT
  - Insure they include compute infrastructure in their grant request
  - NVIDIA supports researchers and their grant applications (e.g. Letters of Support)
  - Supporting a researcher's efforts significantly deepens the relationship
  - Researchers collaborate >> new contacts & sales opportunities



Source: NIH

WHO BUYS NVIDIA IN HIGHER EDUCATION?

Individuals

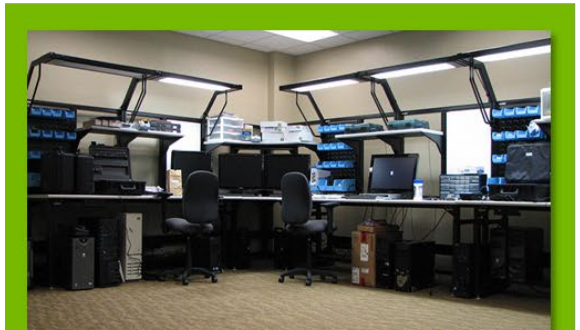
Students

Professors

Researchers

Organizations

Department/Research Lab



Central or Department IT

Research IT

AI - A NEW INSTRUMENT FOR SCIENCE

HPC

> +40 years of algorithms based on first principles theory.

> **P**roven statistical models for accurate results

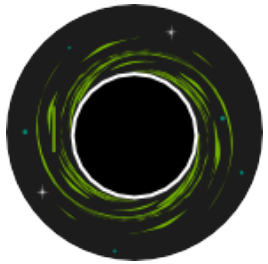
AI

> Improve predictive accuracy and faster response time.

> previously unmanageable data sets.

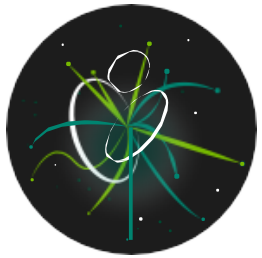
Dramatically Improves Accuracy and Time-to-Solution

Commercially viable fusion energy



Understanding cosmological dark energy and matter

Clinically viable precision medicine



Improvement and validation of the Standard Model of Physics

Climate/weather forecasts with ultra-high fidelity

USE CASES IN RESEARCH COMPUTING

Computer Vision

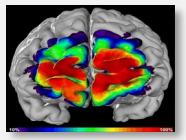
Machine Learning and AI

Deep Learning

Robotics

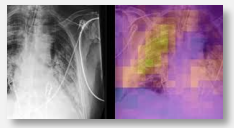
Autonomous Machines

Neuroscience

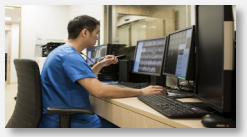


Bioinformatics & Genomics

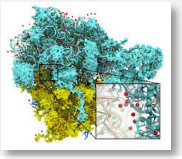
Medical Imaging



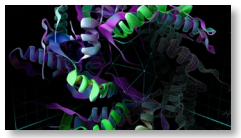
Radiology



Molecular Dynamics



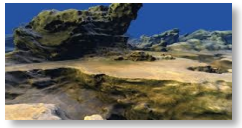
Chemistry



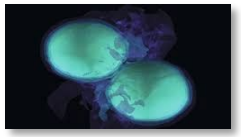
Physics

Astro Physics

Geology

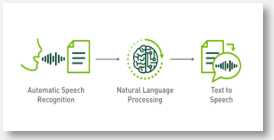


Astronomy

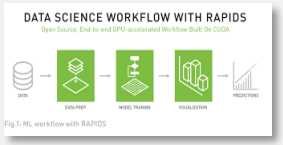


Agriculture

Linguistics



Business



NLP

Finance

HIGHLY VISIBLE OPPORTUNITIES

Categories By Higher Education and Research Domains

Engineering

Computational Fluid Dynamics
Computational Structural Mechanics
Electronic Design Automation
Materials Sciences

Computer Science

Computational Electromagnetics
Computer Graphics & Visualization
Computer Vision & Machine Vision
Robotics and Autonomous Machines
Signal Audio Processing
Video Processing
Video Analytics
Video Encoding & Transcoding

Industry

Industrial Inspection
Military Simulation
Predictive Maintenance

Sciences

Astronomy & Astrophysics
Climate, Weather & Ocean Modeling
GeoScience
Materials Science
Molecular Dynamics
Molecular Visualization & Docking
Physics
Quantum Chemistry
Scientific Visualization
Seismic Processing
Simulation Modeling & Visualization

Life Sciences / Medical

BioInformatics & Genomics
Medical Imaging
Microscopy
Molecular Dynamics
Molecular Visualization & Docking
Neuroscience
Pharmacometrics

Design

Animation and Modeling
Broadcast Graphics
Computational Photography
M&E: Color Management, Composition & Finishing, On-set, Review & Stereo
Photography & Image processing
Video Editing & Motion Graphics
Video Encoding & Transcoding
Design & Visualization
Games
Graphics Design
Architecture and Design

Data/General Technology

Data Technology & Analytics
Databases
Developer Tools & Libraries
Internet of Things
Machine Learning & AI
Numerical Analytics

TAPPING INTO HIDDEN OPPORTUNITIES

Leverage Researcher Networks

Other Colleges

Law
Journalism
Literature
Language Arts
Nursing
Library Sci.

Humanities
Social Sci.
Business
Environ. Sci.
Oceanography
Education

Common forms of AI: NLP, ASR, classification, comp. vision, image processing, chat-bots, graphics, digital compos., pattern recog., etc.

Remote Campuses

Academic Initiatives

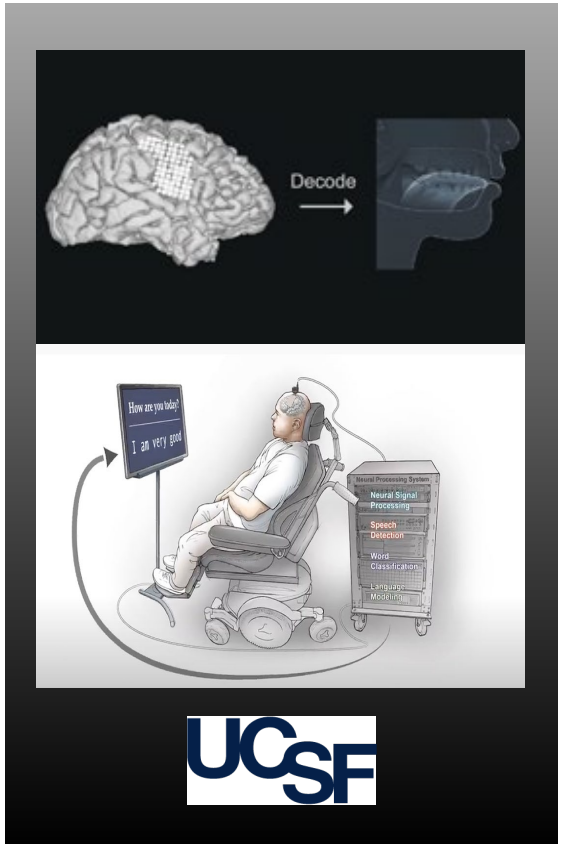
Department Labs

Collaborative Projects

Moderate ← Relative Visibility → Low

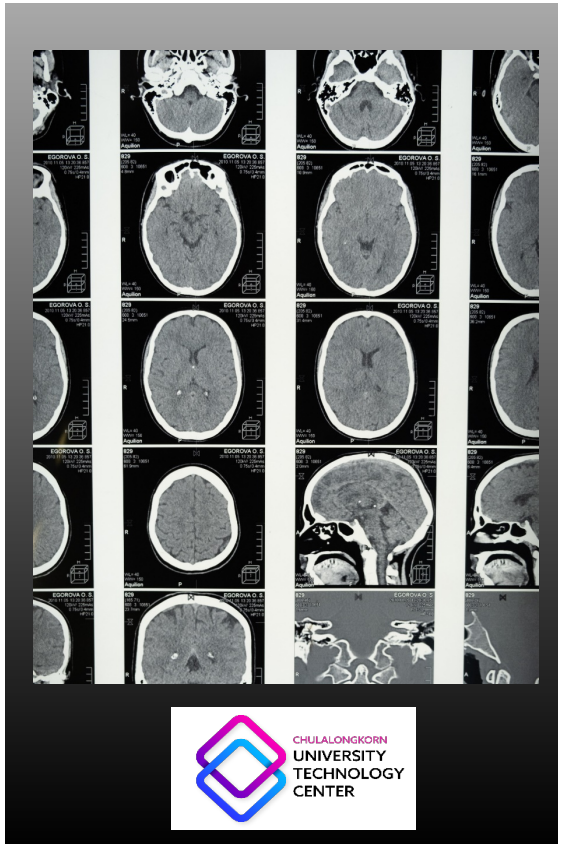
INNOVATION INSPIRED CASE STUDIES

Accelerating AI and HPC Applications in Higher Education

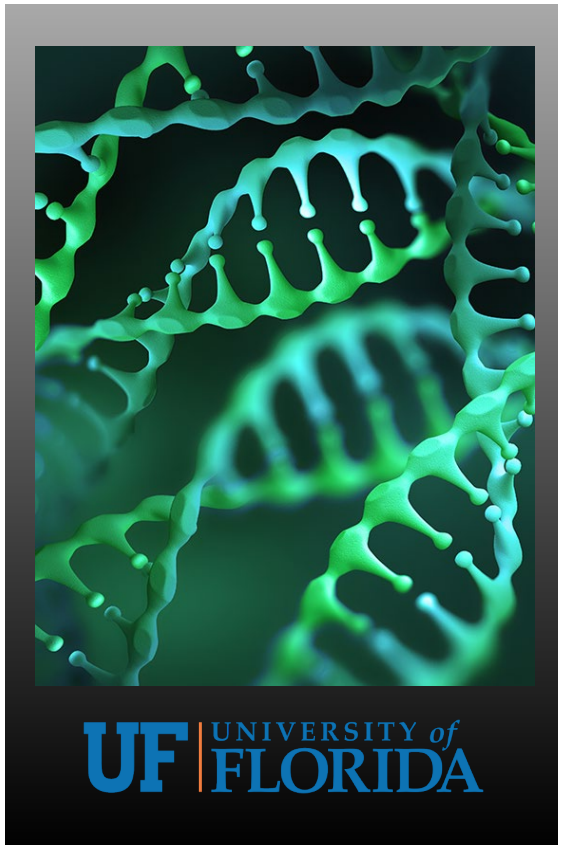


Deep learning method decodes and converts brain signals into speech, enabling victims of stroke and paralysis to communicate.

Building AI models that include computer vision which help emergency services respond rapidly to natural disasters.



AI models for detecting polyps in real-time surgical situations and cognitive impairment with state-of-the-art accuracy.



Tackling society's biggest challenges - from new ways to simulate climate change or accelerate drug discovery

NVIDIA IN HIGHER EDUCATION AND RESEARCH

PLATFORM, ECOSYSTEM AND PROGRAMS

700+Applications
1.8Million Developers

APPLICATION CONTAINERS

150+

AI MODELS

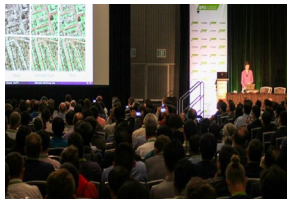
100+

HELM CHARTS

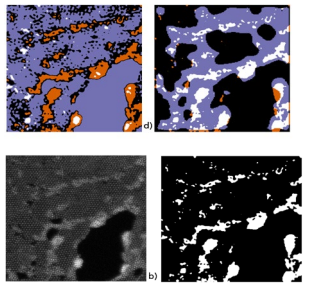
ML, Inference

TOOLKITS & SDKs

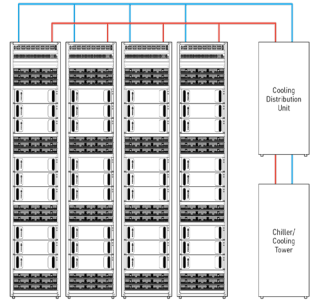
Healthcare | Smart Cities | Conversational AI | Robotics | HPC | more



Deep Learning Institute

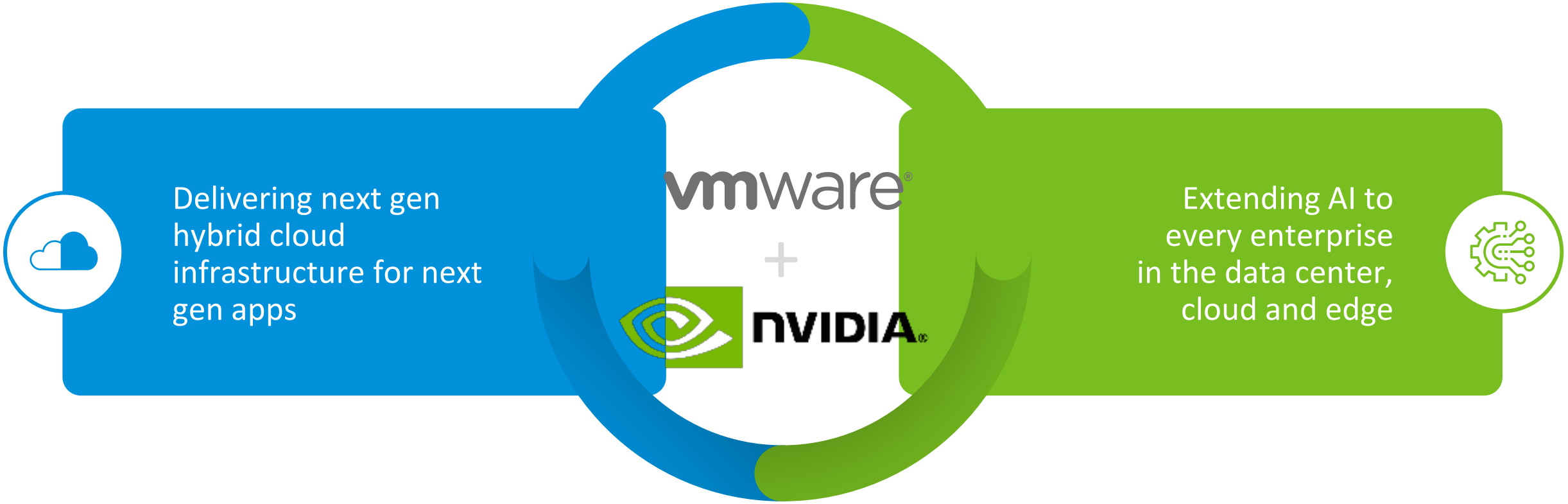


Research Promotion



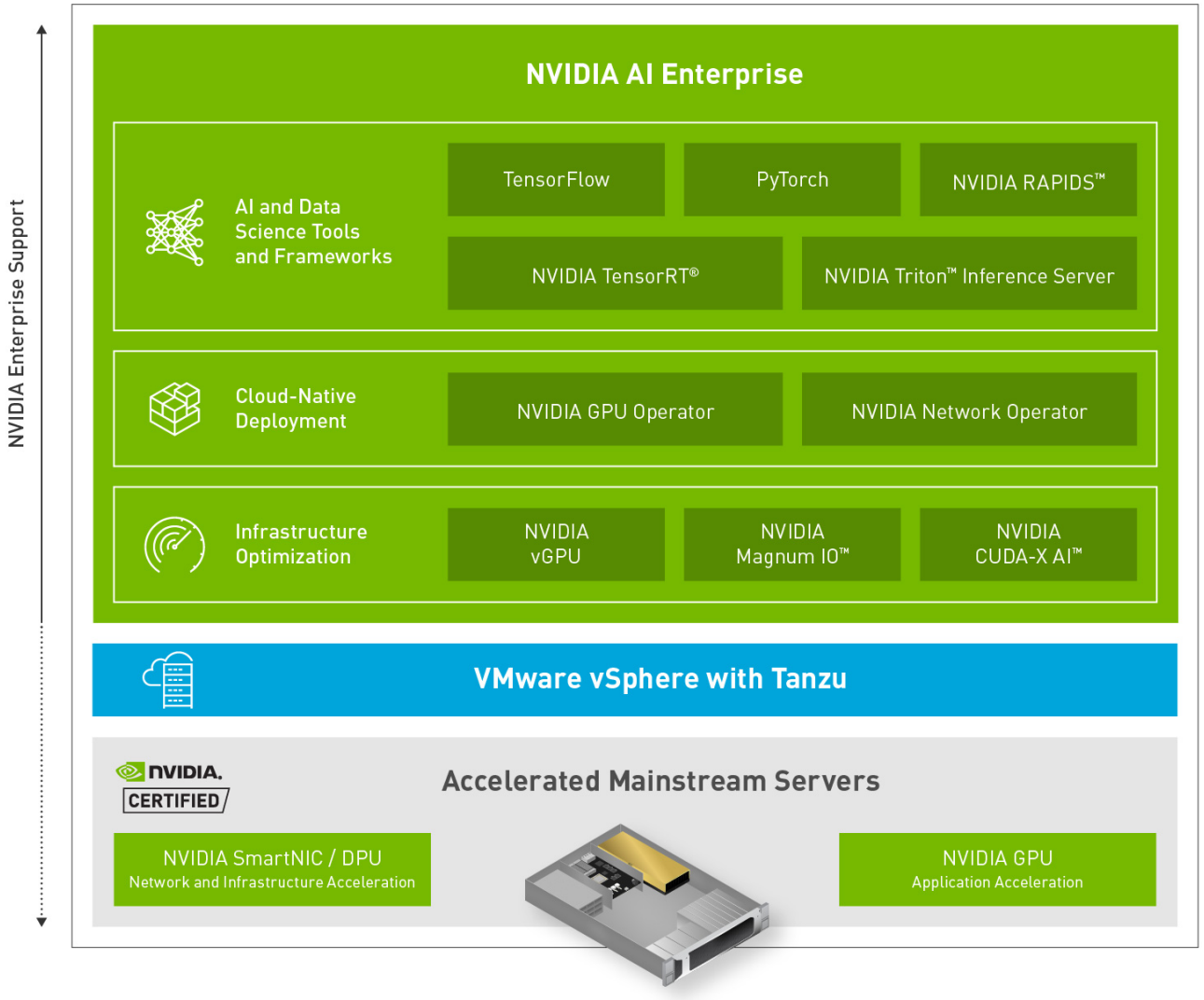
Best Practices

Workshops/DLI/Hackathons


Delivering next gen hybrid cloud infrastructure for next gen apps
vmware
+
NVIDIA
Extending AI to every enterprise in the data center, cloud and edge

THE AI-READY DATA CENTER

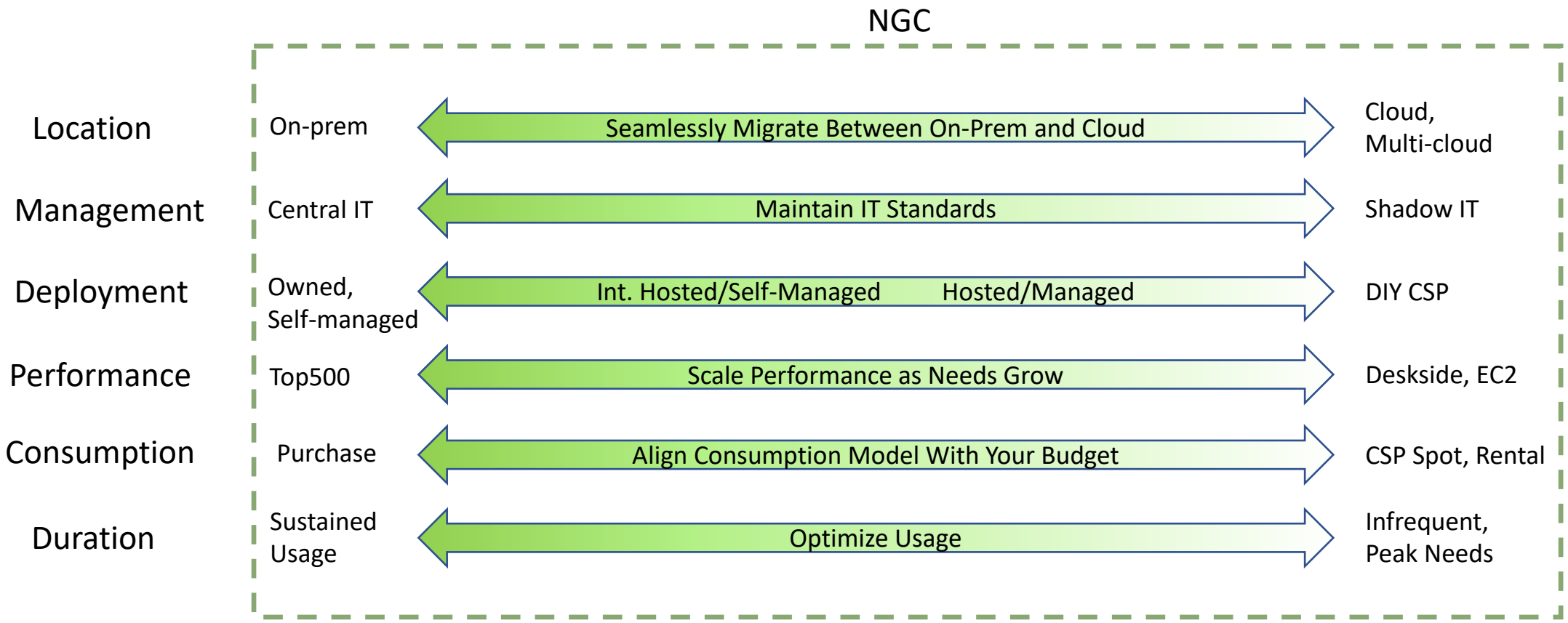
Full stack architecture combining NVIDIA AI Enterprise + NVIDIA Certified



- Optimized for Performance
- Democratized AI across Campus
- NVIDIA Enterprise Support
- Ease of Deployment

NVIDIA - CHOOSE YOUR EXPERIENCE

Same Application: Anywhere, Anytime, Any Duration, Any Performance

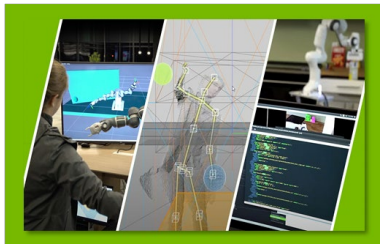


WHO BUYS NVIDIA IN HIGHER EDUCATION

Individuals

Students

Researchers



Professors

Organizations

Department/Research Lab

Central or Department IT

Research IT

What partners can do:

- Complete HER Training
- ID target universities
- Engage with NVIDIA PBM

What Nvidia can do:

- Assist with strategy and plan
- Provide tailored training
- Create tools and training
- Support programs for researchers

SUMMARY

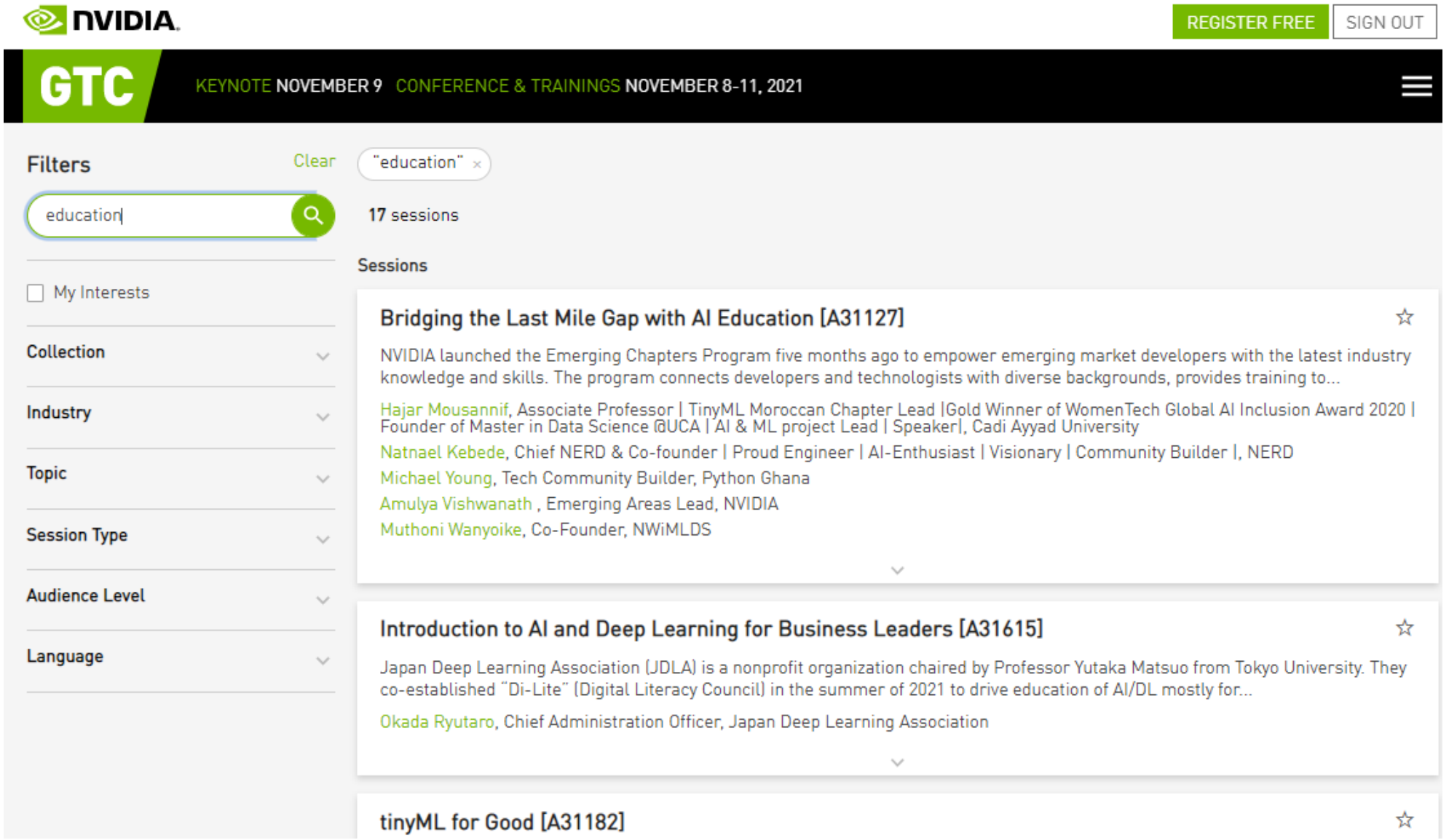
- Trends: Talent pool gap, national initiatives, distance learning
- Higher Education and Research is vastly different than traditional enterprise
  - Price sensitive, grant funded, larger scale, broader scope, and a different mission
- Existing versus emerging opportunities outside of STEM
  - Organizational and individual buyers
  - AI and traditional HPC convergence leads to new use cases - UCSF
- NVIDIA provides comprehensive support for research and general IT
  - Platform, ecosystem, and programs
  - You choose your experience


LEARN MORE

FREE Registration!
https://www.nvidia.com/gtc/

NVIDIA GTC

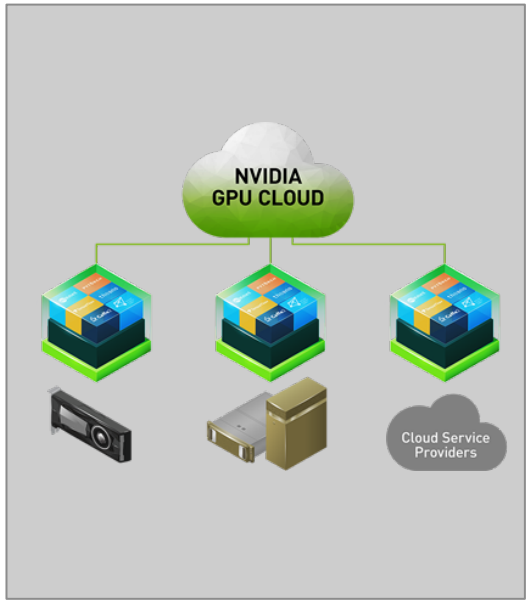
Sign up today!!!



NVIDIA PARTNER PROGRAM

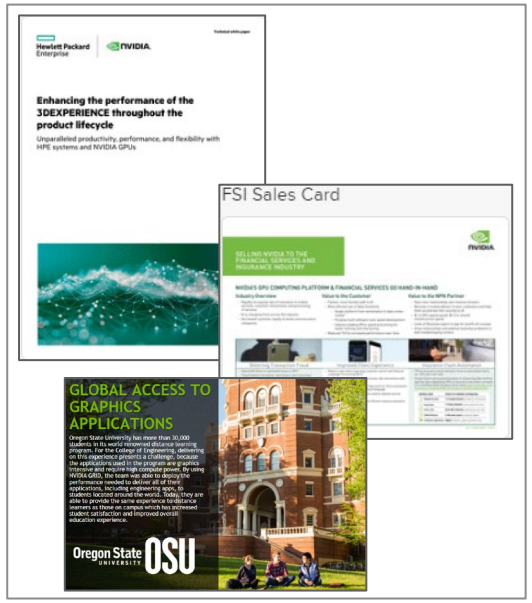
Sales and Technical Enablement

NVIDIA Deep Learning Institute
www.nvidia.com/en-us/deep-learning-ai/education



NGC
www.nvidia.com/en-us/gpu-cloud

Sales, Product and Technical
E-Learning

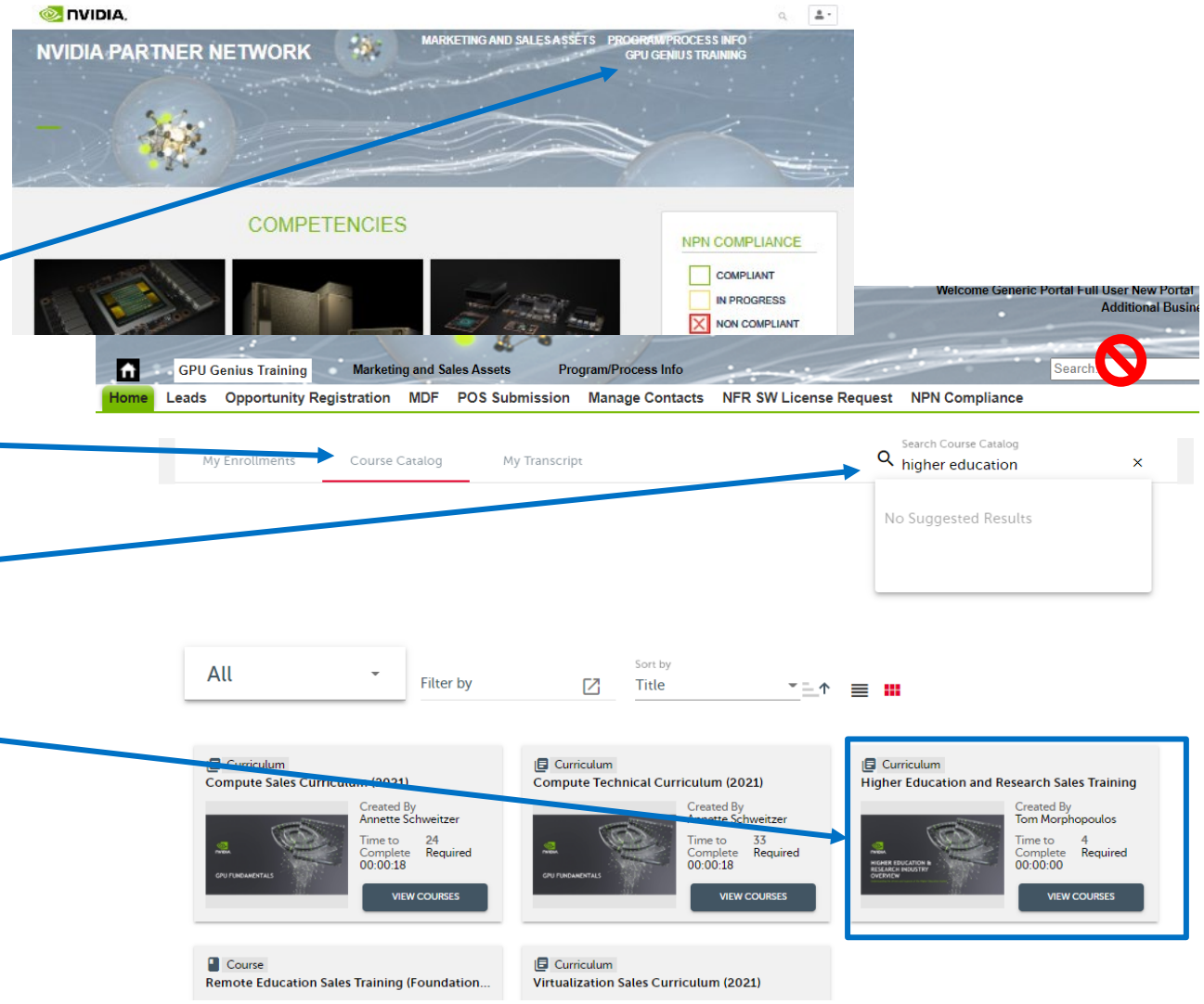


Field Resources @ NPN Portal
Uses-cases, whitepapers, presentations,

FINDING HIGHER EDUCATION TRAINING ON THE NPN PARTNER PORTAL

Finding training on the NPN Partner Portal:

1. Log into the NPN Partner Portal www.nvidia.com/npnportal
2. Click “GPU Genius Training” (upper right on homepage)
3. Click “Course Catalog” (default “My Enrollments”)
4. Search Course Catalog for “higher education”
5. Click on desired curriculum from displayed results



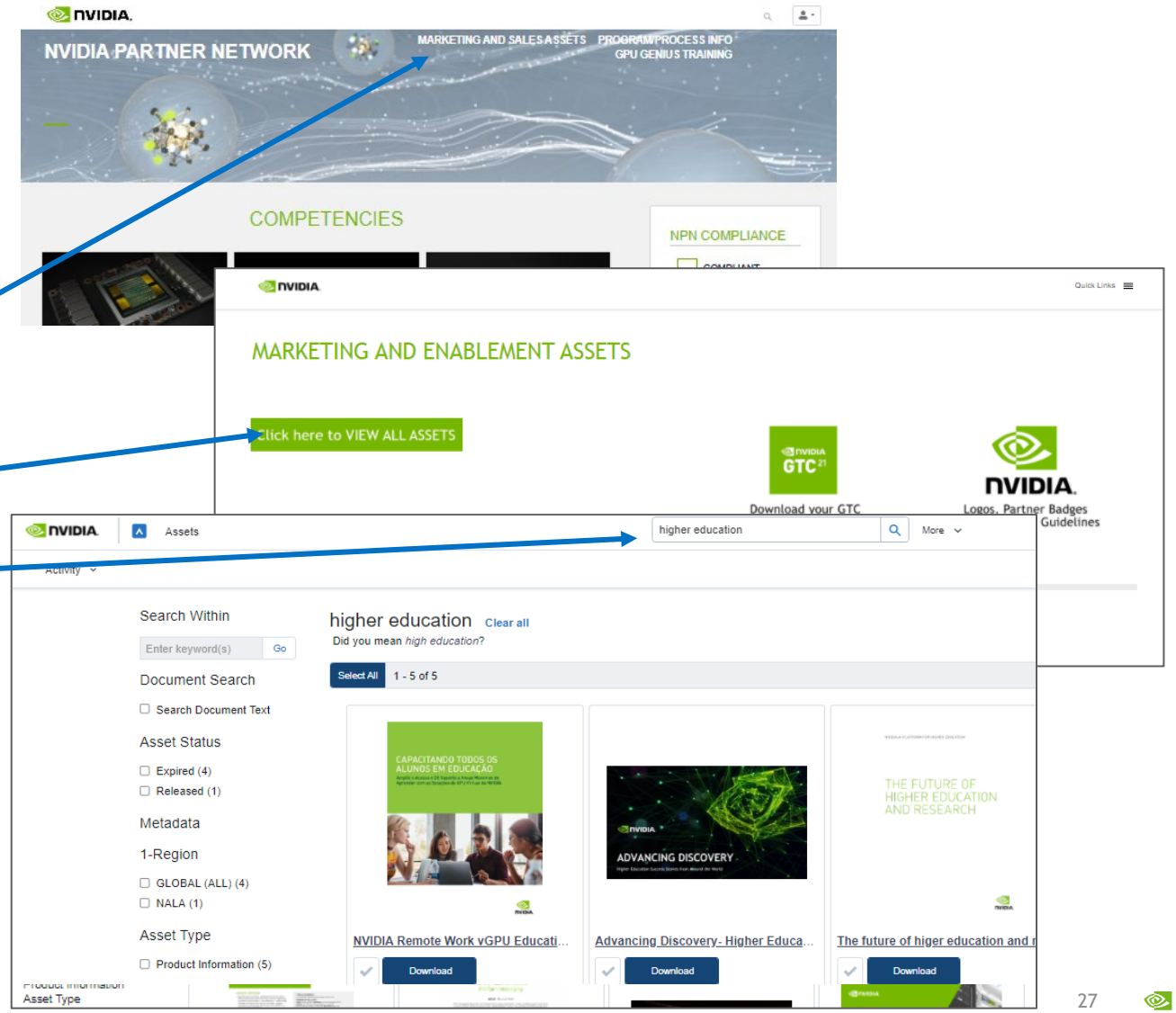
Sales focused curriculum with 4 short courses:

1. Higher Education and Research Overview – 18 min
2. Opportunities in Higher Ed. & Research – 22 min
3. Hidden Opportunities in Higher Ed. & Research – 14 min
4. Sales Guidance for Higher Ed. & Research – 18 min

FINDING HIGHER EDUCATION CONTENT ON THE NPN PARTNER PORTAL

Finding content on the NPN Partner Portal:

1. Log into the NPN Partner Portal
   www.nvidia.com/npnportal
2. Click “Marketing and Sales Assets” (upper right on homepage)
3. Click here to view all assets
4. Search by keyword or search by Industry
   - Customer Decks
   - Sales Accelerators
   - Sales Guidance
   - Success Stories
   - More…



CALL TO ACTION

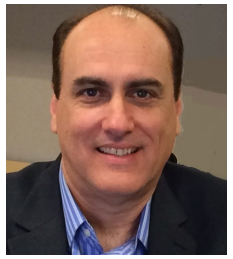
Next steps

1. Learn more:

- NPN Partner Portal for HER solutions briefs, customer success stories, and more

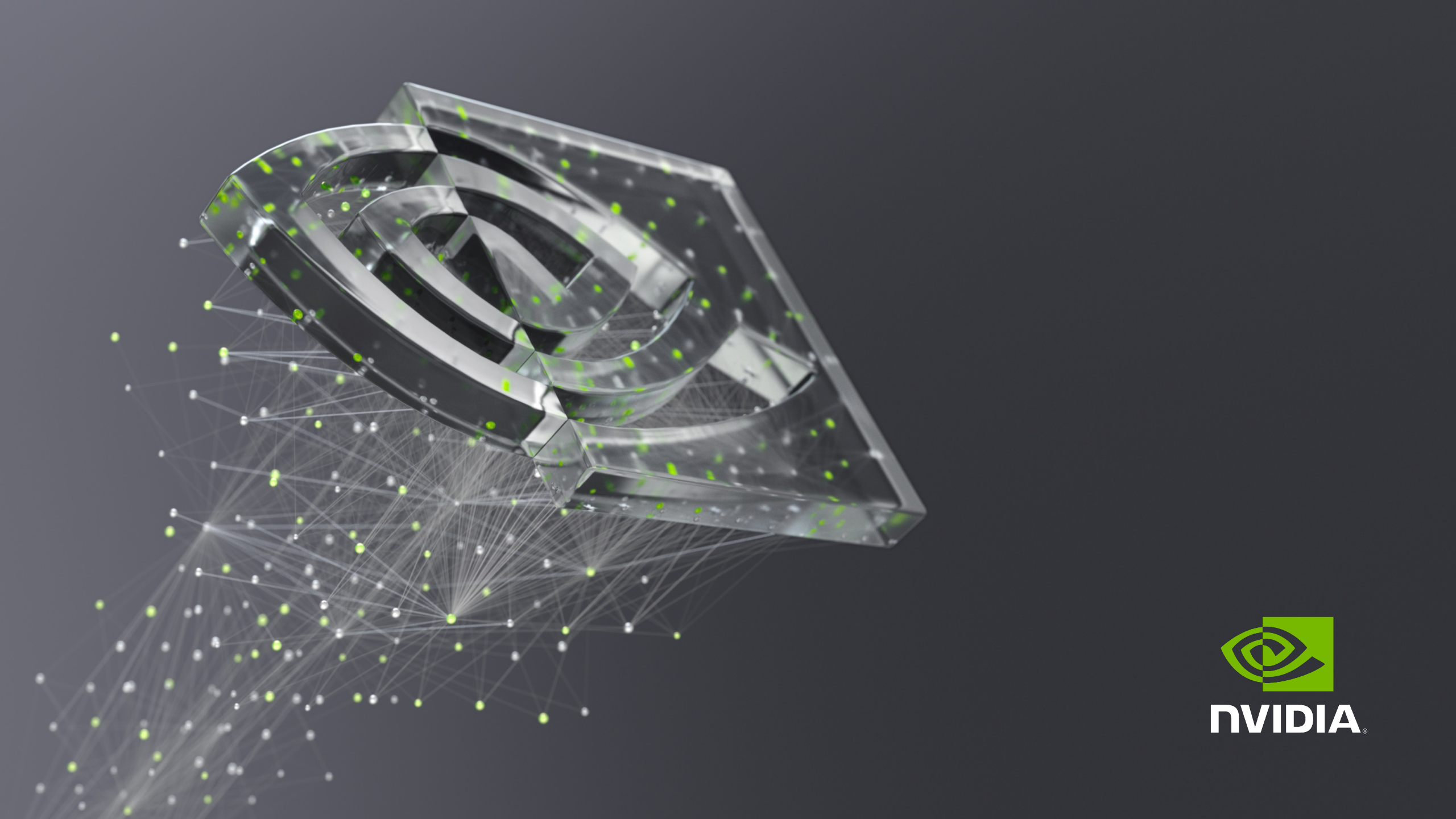
2. Get Answers from your NVIDIA contact:

Cheryl Martin
Director HER Industry Business Development
chmartin@nvidia.com



Dave Hiatt
HER Industry Business Development
dhiatt@nvidia.com

3. Talk to your customers using the Customer Questionnaire document in the “Attachments” tab on your left.


NVIDIA