

# PhD working

*A story of a PhD holder working in Vietnam  
Le Thai Hung*

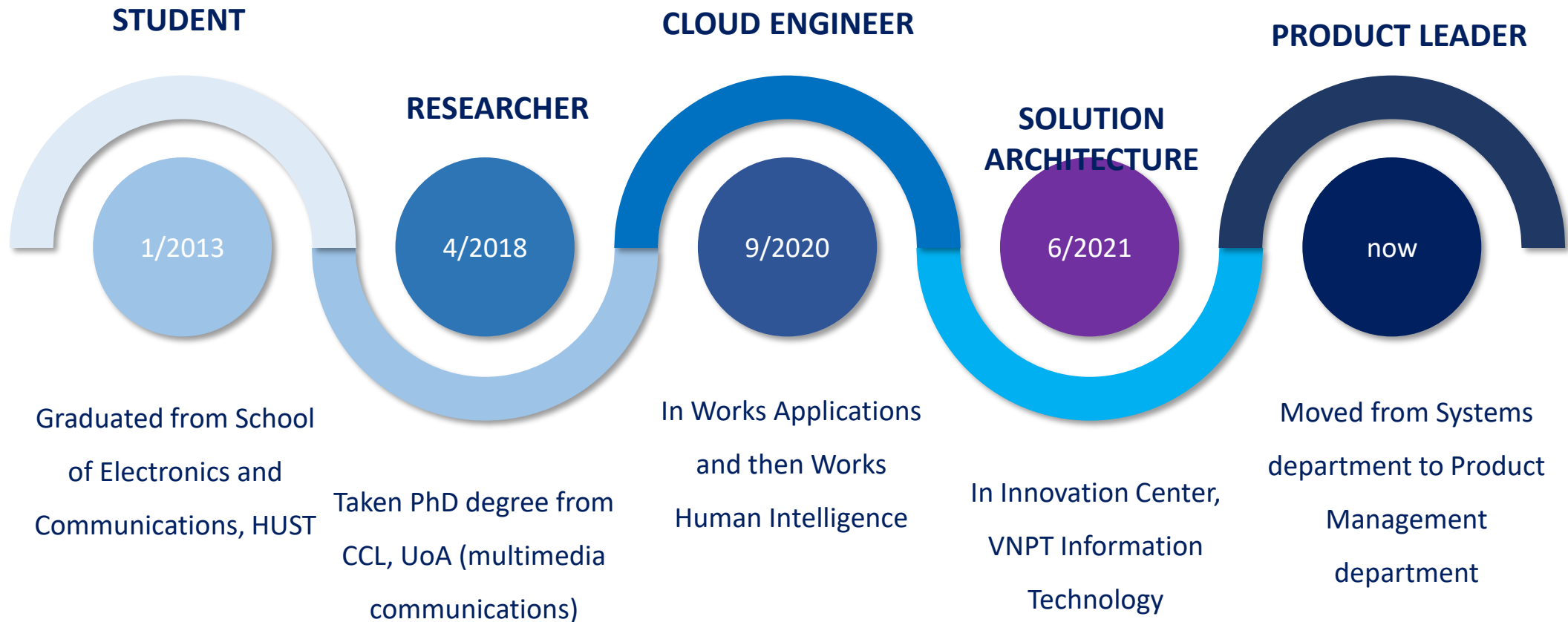
Ha Noi, Mar. 14, 2022



# AGENDA

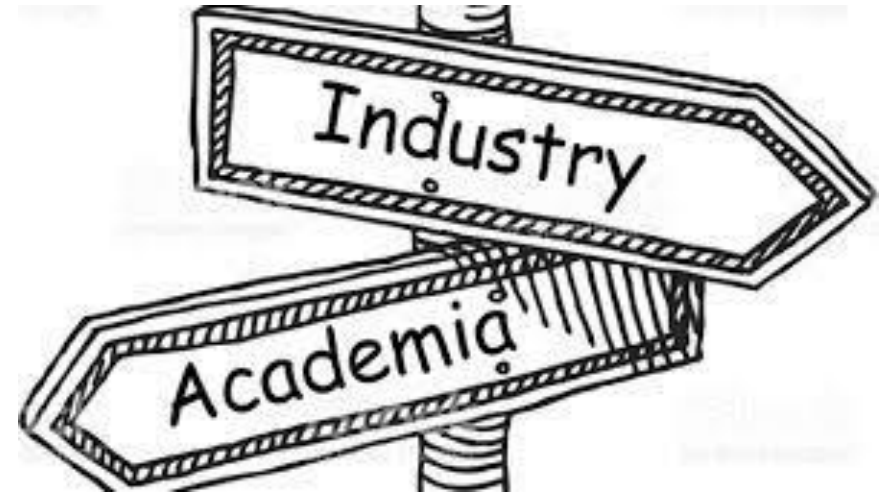
- Self-introduction
  - My story
  - Turning points in my life
- Innovation Center – a case study of researching company
  - Research
  - Products

# ABOUT ME



# TURNING POINTS IN MY LIFE (1)

1. After doing PhD,
  - Academic
  - Industry
2. Where to go?
  - Vietnam
  - Japan
  - Austria
  - Canada
3. What's kind of industry ...
  - Scientist (2/6 friends)
  - Engineer (4/6 friends)



Results: 2.5 years working  
as a Cloud engineer in  
Works Applications, Japan

## TURNING POINTS IN MY LIFE (2)

- 9/2020: I came back Vietnam
  - VNPT Information technology
- Why 9/2020?
  - Because of Covid.
  - Home alone in Japan, do everything by myself
  - 2-years experience is enough
  - Career opportunity in Vietnam:
    - VNPT established Innovation Center, aiming to innovation products/technologies
    - VNPT is a State-Owned Enterprise, which wants to change itself to service provider
    - Salary is good \$2k for professionals, considering a living expense for a couple in Hanoi around \$400

## TURNING POINTS IN MY LIFE (3)

- What the company expect from PhD holders?
  - Update tech and apply them in product
- In VNPT Innovation center
  - Lead 1 product => Product manager then Product owner
    - Develop product strategy (market survey, product price, product distribution channel)
    - Manage Projects (to delivery to all customer if there is no PM)
    - Decide technology stack (or even lead AI/engineer team)
  - Lead major project
    - E.g. Credit scoring project
- In my case, teaching and coaching
  - Lead product survey team
  - Lead business analysis team
  - Lead quality process/assurance team

## What happens if ...

- If I did research in a researching company
  - Dr. Phuc Trinh, Dr. Huyen Tran
- If I did research in a university in Japan, Korea
  - Dr. Vuong (2<sup>nd</sup> PhD graduating CCL), Dr. Thanh, Dr. Duc
- If I did research in a university in Vietnam
  - Teaching only
    - \$1k (from a PhD holder in HUST)
    - \$500 (from a PhD holder in University of Transport and Communications)
  - Teaching & Doing Researching
    - HUST: \$2k (with some research) and even more (if you are in a strong group, have projects)
  - Teaching & Developing products
    - Very common before, run private business
    - VNPT-IT hires professionals to do research and to apply tech in products

## II. VNPT Innovation Center – a case study of AI researching company



Gần **10**  
quỹ đầu tư  
mạo hiểm về TTNT

Gần **65** startup TTNT

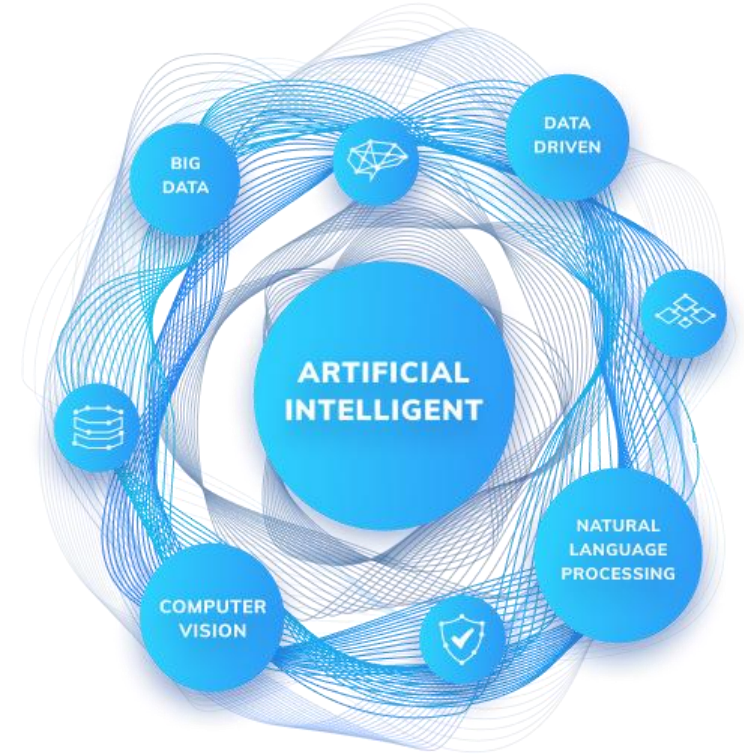
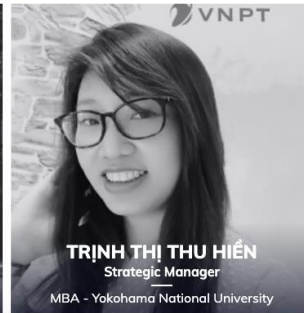
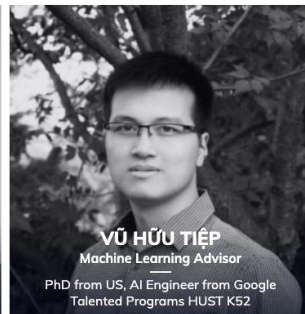
Companies  
focus on AI



# THE PURSUIT OF INNOVATION



# FOUNDING IN 2019, WE FOCUS ON NEW TECHNOLOGY



120+ members

- 50+: AI Engineer vs Researcher
- 10+: Software Engineer AI
- 15+: Backend Engineer
- 10+: UI/UX Engineer
- 20+: BA, Tester, PM, QA, PO
- 15+: Labeling



# AI Capability Ladder

## ARTIFICIAL SUPERINTELLIGENCE

Surpasses human intelligence in practically every field

- Bionics
- Nano bots
- Self improvement

## ARTIFICIAL GENERAL INTELLIGENCE

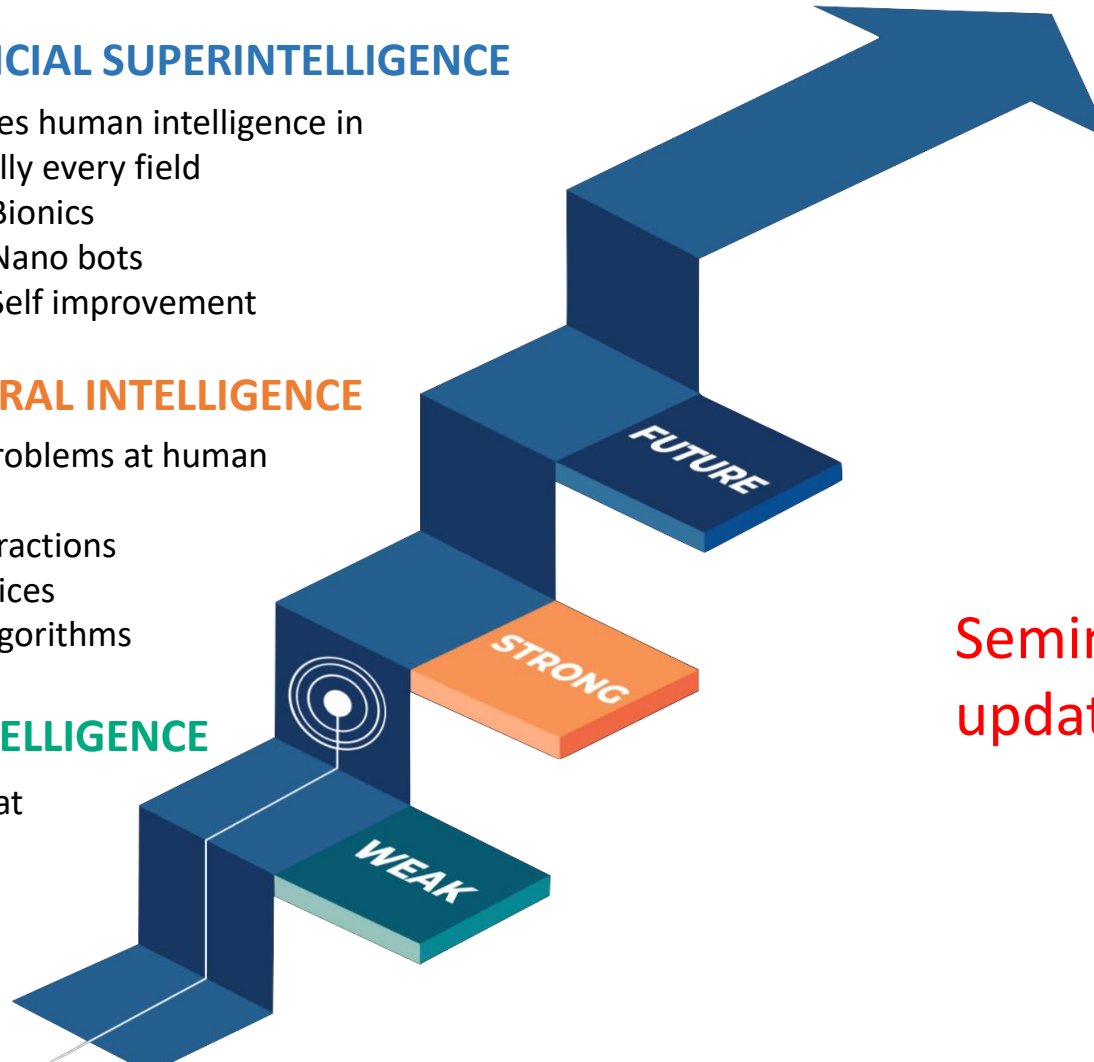
Solves new or novel problems at human or super-human levels

- Integrated interactions
- Embedded devices
- Self-learning algorithms

## ARTIFICIAL NARROW INTELLIGENCE

Solves a narrow set of problems at human or super-human levels

- Self-driving cars
- Digital assistants
- Medical diagnostics



Seminar very month to update research/paper

# HARDWARE INVESTMENT



45 cards  
V100 to  
train data



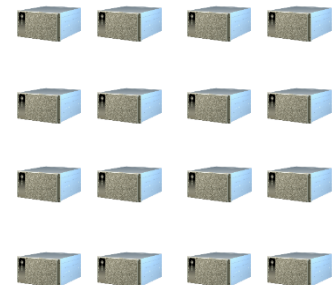
4 nodes  
DGX-1  
V100



4 nodes  
DGX A100



16 nodes  
DGX A100



# Hệ sinh thái VNPT AI

[www.icenter.ai](http://www.icenter.ai)



iVision



iListen



iBot



iTalk



iFace



iOCR



iSocial



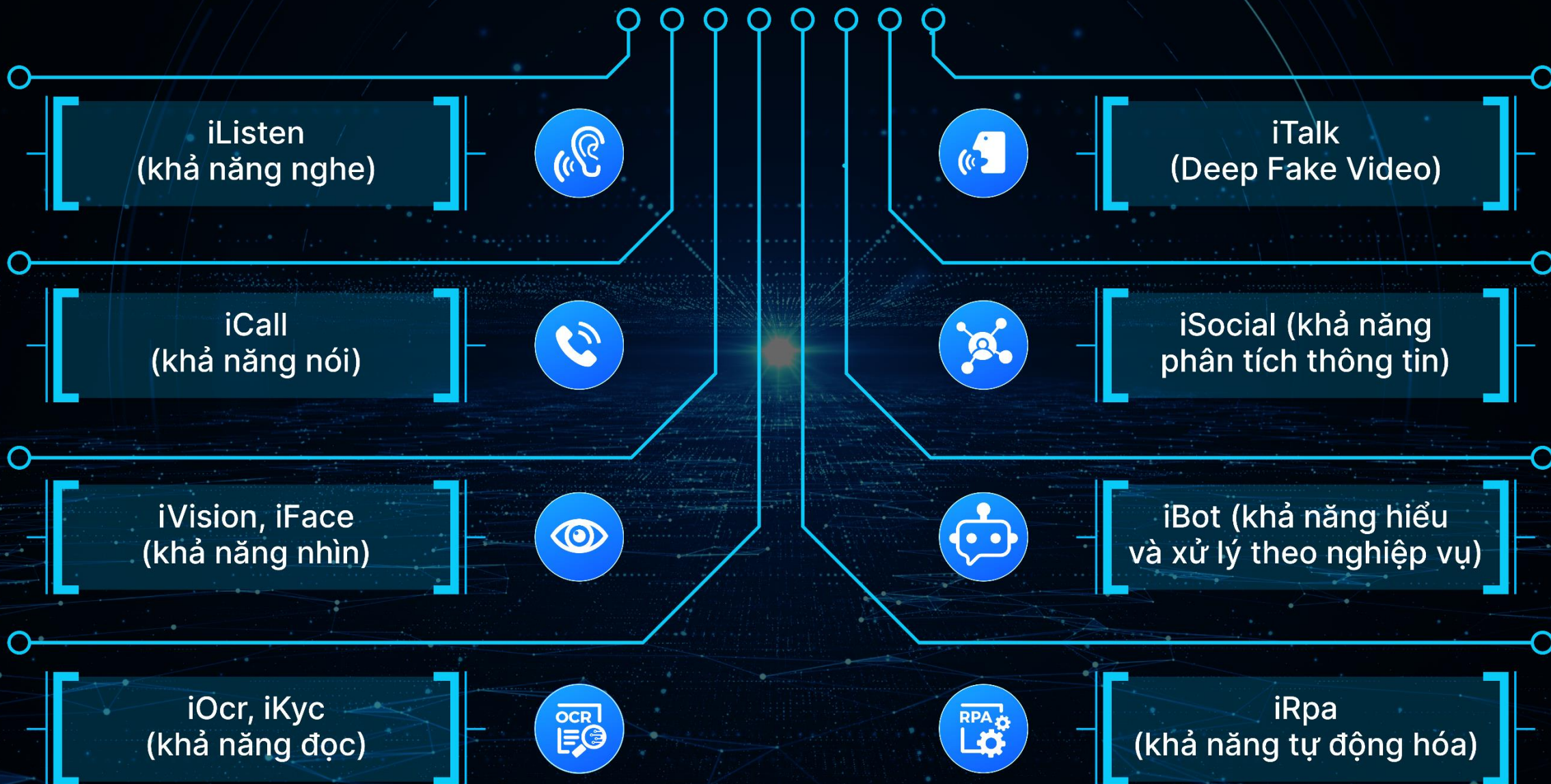
iCall

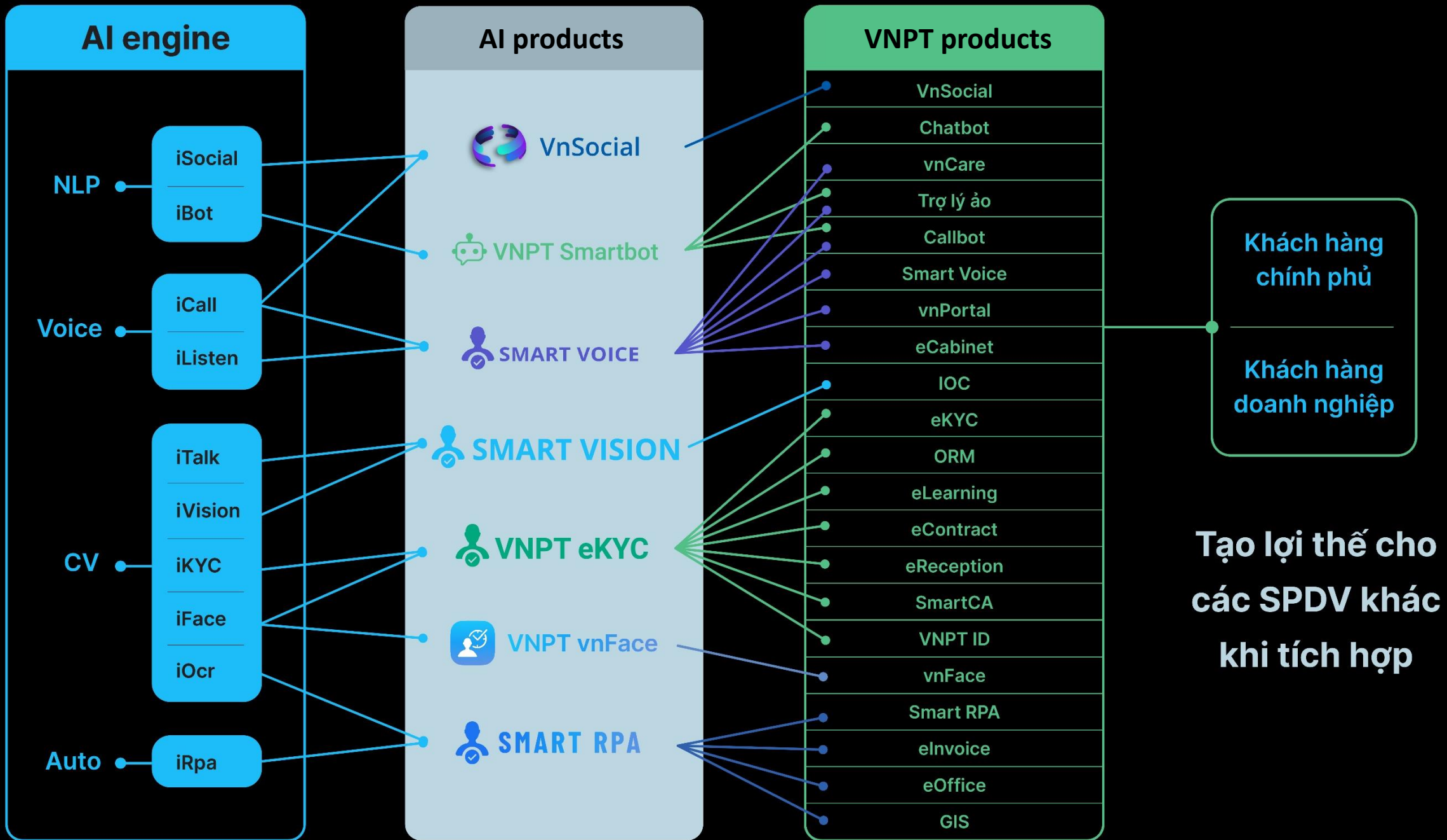


iRPA



# Bộ AI engine **100+** models chia thành 8 nhánh







## VNPT Product



Các nhà phát triển ứng dụng  
trong và ngoài VNPT



IDEA  
PROMOTION

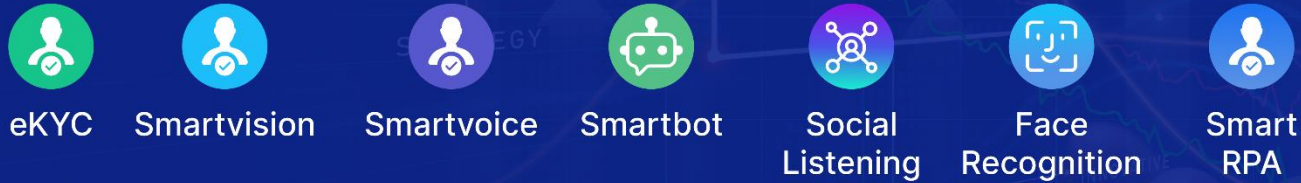


API Gateway / SDK

Monitoring

Nền tảng

Logging



Billing

Kubernetes

Công nghệ

Caching



Database

Minio

Dữ liệu  
Vinaphone

Dữ liệu  
Y tế

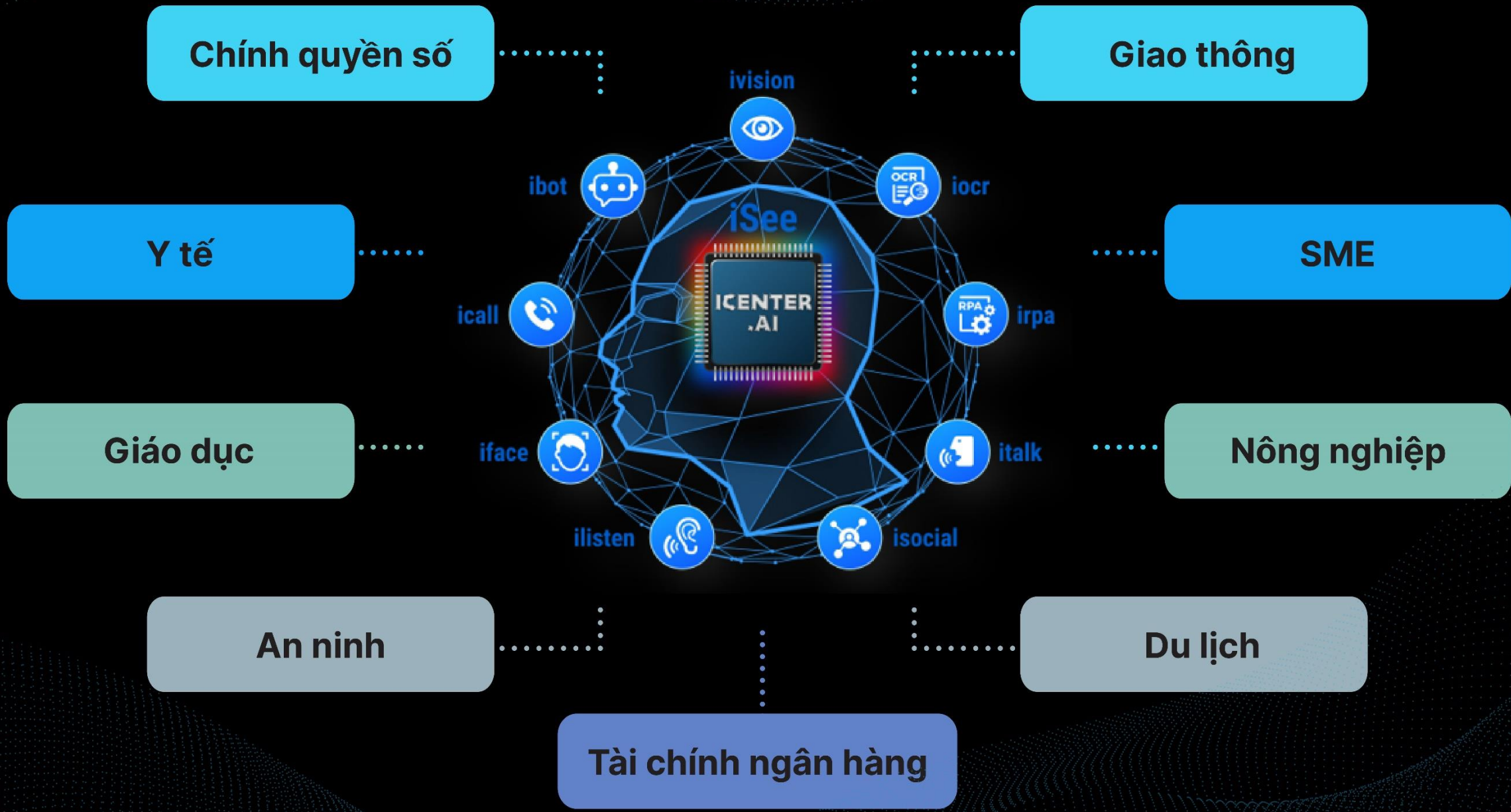
Dữ liệu  
Giáo dục

Dữ liệu  
Các lĩnh vực



Hướng tới  
Digital Service  
Provider





# VNPT MODEL QUALITY is No. 1 in Vietnam market

Group	Technology	Product	Comment
<i>Computer Vision</i>	OCR Liveness card Liveness face Face compare	VNPT eKYC VNPT SmartVision VNPT SmartRPA vnFace	VNPT is no. 1 <b><i>Độ chính xác 99% bộ dữ liệu test 10.000 ảnh</i></b>
<i>Voice</i>	Speech-to-text Text-to-speech Voice verification	VNPT SmartVoice	VNPT, Viettel, FPT are comparable <b><i>word error rate = 2.7% with Vietnamese</i></b>
<i>Natural Language Processing</i>	NLP	VNPT Smartbot	VNPT và FPT is no. 1, theirs product quality are better that of Viettel

[last updated: 2021-12-16]

Accuracy

Resources

Status

FRVT Participation Statistics

FRVT 1:1 Performance Summary

Prior Editions of Report

Overview

Goals

How to Participate

Contact Information

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Related NIST Projects

[FRVT Ongoing](#)

[FRVT 1:N Identification](#)

[FRVT Demographic Effects](#)

[FRVT MORPH](#)

[FRVT Quality Assessment](#)

[FRVT Face Mask Effects](#)

[FRVT Paperless Travel](#)

## Verification Performance

The table shows the top performing 1:1 algorithms measured on false non-match rate (FNMR) across several different datasets. FNMR is the proportion of mated comparisons below a threshold set to achieve the false match rate (FMR) specified. FMR is the proportion of impostor comparisons at or above that threshold. The algorithms are ordered initially in terms of rank on the VISABORDER dataset, calculated using FNMR @ FMR =  $10^{-6}$ . The rows for a given column may be sorted by clicking on its header. Hovering over the algorithm will show you the corresponding company name. In addition, searching can be done using regular expressions and company names are searchable.

Show  entries

Search:

FALSE NON-MATCH RATE (FNMR)

Algorithm	Submission Date	Constrained, Cooperative				Unconstrained, Non-Coop		
		FMR	= 0.000001	= 0.00001	= 0.00001	= 0.000001	= 0.000001	= 0.00001
		<a href="#">VISA Photos</a>	<a href="#">MUGSHOT Photos</a>	<a href="#">MUGSHOT Photos 12+YRS</a>	<a href="#">VISABORDER Photos</a>	<a href="#">BORDER Photos</a>	<a href="#">WILD Photos</a>	<a href="#">KIOSK Photos</a>
<a href="#">vnpt-003</a>	2021-12-01	0.0138 <sup>(179)</sup>	0.004 <sup>(85)</sup>	0.0058 <sup>(91)</sup>	0.0087 <sup>(105)</sup>	0.0161 <sup>(105)</sup>	0.0315 <sup>(94)</sup>	0.0901 <sup>(46)</sup>
<a href="#">vinai-000</a>	2020-09-24	0.0124 <sup>(168)</sup>	0.0045 <sup>(103)</sup>	0.0072 <sup>(117)</sup>	0.0089 <sup>(111)</sup>	0.1814 <sup>(259)</sup>	0.0302 <sup>(28)</sup>	-
<a href="#">viettelhightech-000</a>	2021-08-04	0.0166 <sup>(205)</sup>	0.011 <sup>(224)</sup>	0.0198 <sup>(238)</sup>	0.0167 <sup>(205)</sup>	0.0249 <sup>(159)</sup>	0.0482 <sup>(227)</sup>	0.1229 <sup>(81)</sup>
<a href="#">vts-000</a>	2020-11-04	0.0174 <sup>(211)</sup>	0.008 <sup>(181)</sup>	0.0129 <sup>(189)</sup>	0.025 <sup>(249)</sup>	0.045 <sup>(210)</sup>	0.063 <sup>(255)</sup>	-

**Top 1 Vietnam in FRVT 1:1**

(National Institute of Standards and Technology - Face Recognition Vendor Test)



# AI Product

[www.icenter.ai](http://www.icenter.ai)



**VNPT**  
Smart Vision



**VNPT**  
SmartBot



**VNPT**  
Smart RPA



**VNPT**  
eKYC



**VNPT**  
Smart Voice



**vnFace**



**VnSocial**



Thank you!

