

COMPANY PORTFOLIO

INTELLIGENCE FOR TOMORROW, TODAY



<https://www.vinai.io/>

About Us

Founded in 2019, VinAI is the world's top 20 AI R&D company with a myriad of practical research projects and products. VinAI is headquartered in Hanoi (Vietnam), with an additional location in Ho Chi Minh City. Bringing together almost 200 high-profile researchers and engineers, VinAI sets out to transform its state-of-the-art AI research into products and services that solve real-world problems.

VinAI is currently led by AI/Machine Learning and Mobility Experts from Google DeepMind, Adobe, Stanford Research Institute, Bosch, Audi, Volkswagen, Toyota, DARPA Urban Challenge, Monash University, CMU, and the University of Oxford.

Vision

 Making AI accessible to everyone

Mission

 Making AI more accessible, reliable and affordable through world-class AI research and engineering.

Core Values

1 Value Creation

The purpose, belief and motivation in creating products and choosing what fit the people & the company.

2 Innovation

The ability to create new opportunities with the strategic vision.

3 Now

What we are doing has to catch up & stay ahead, everything has to happen in the real time.

4 Agility

Our ability to adapt to change quickly & efficiently.

5 Integrity

In a personal choice associated with ethics.



OUR STORY

In 2019, I returned to Vietnam to build VinAI, to start a serious effort in AI research and development, in a place where it wasn't exactly the norm. It was an interesting challenge, but it was also a very risky move. However, I also knew that if I succeeded the impacts would be significant.

Fast forward three years, VinAI appeared in the world's top 20 AI R&D companies ranking by Thundermark Capital, standing as the only Southeast Asian player in the mix. Not so coincidentally, Vietnam, which had never appeared on the global AI research rankings before, jumped to 26th position worldwide in the same year.

This rapid ascent speaks to the incredible talent and dedication of our team and the validation for our vision "Making AI accessible to everyone". We've stayed true to this idea, pushing forward with AI research while also developing solutions that work for both local and global needs.

Our journey has been marked by a series of firsts for Vietnam, spanning the entire spectrum from fundamental research to applied engineering. We've published over hundreds of research papers, developed impactful AI solutions and built a pioneering residency program.

Underlying all of these achievements is the mindset we cultivated from the very beginning: 'yes, we can do it here'. We firmly believed, and have now proven, that innovation isn't limited by national boundaries. Instead, it flourishes when you combine global standards with local insights and talent.



Dr. Hung Bui
CEO at VinAI

Our Milestones

2019



April: VinAI Research Institute

Vingroup announced the official launch of VinAI Research Institute led by Dr. Hung Bui, a former researcher at Google DeepMind.

May: The First AI Residency Program

VinAI launched the first AI Residency Program in Vietnam to cultivate the next generation of AI leaders.



2019

2019



Jun: The First AI Day

VinAI organized the very first AI Day themed "AI Day: From Research to Application".

Aug: Focus on Product Development

VinAI transitioned from a research institute to a company with a focus on product development.



2021

2022



Jan: Debut at CES

VinAI made the first in-person debut of its Smart Mobility product suite at CES 2022.

April: Partnership with Qualcomm
 VinAI collaborated with Qualcomm to launch high-performance, low-power AI solution for smart cities.



2022

2022



Jun: Top 20 AI R&D

VinAI was recognized as one of the world's Top 20 AI R&D companies by Thundermark Capital.

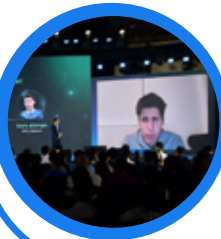
Jun: Industry 4.0 Summit

Dr. Hung Bui introduced Smart Edge (security and safety solutions for smart cities) to the Prime Minister.



2023

2023



Dec: AI Day 2023

Featured an exclusive fireside chat between Sam Altman, CEO of Open AI and Dr Hung Bui.

Dec: Nvidia Visit

Dr. Hung Bui showcased GenAI to Jensen Huang, Co-founder, President and CEO of Nvidia.



2023

2024



Jan: CES Award

MirrorSense, the world's first AI-driven automatic mirror adjustment technology received the CES Innovation Award.

March: Bloomberg Businessweek Vietnam

Dr. Hung Bui took the stage in a panel discussion titled "The Path of AI" at Bloomberg Businessweek Vietnam.



2024

Our Achievements & Awards



We are featured on

Bloomberg Deloitte. Forbes



Our Global Collaborators



Qualcomm

intel.

Google



ADVANTECH

viettel
IDC

Lenovo™

Hewlett Packard
Enterprise

ASUS®



Microsoft

VINHOMES

FPT

trustingsocial

Stanford
University



VINUNIVERSITY

FUJITSU

ELSA

VINFUTURE

NIC

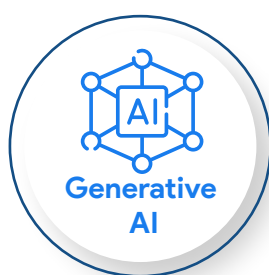
Our Pillars

▶ Conducting World-class AI Research

VinAI represents one of the highest concentrations of AI expertise in the region. Our research aims to advance fundamentals in machine learning, deep learning, and to investigate how they enable new AI methods in computer vision and natural language understanding. The goal for the research group is to conduct world-class breakthrough research in AI, demonstrated by our presence in the list of top-tier publications and patents.

▶ Creating Innovative AI-Powered Products

Our goal is not just to develop new technologies, but to deploy state-of-the-art AI that has meaningful impact on people's lives. We already have key products gaining traction in both the smart mobility and smart edge verticals. We are also moving fast to create accessible and efficient Generative AI solutions for both enterprises and SMBs.



▶ Building the Next-Generation of Thought Leaders in AI

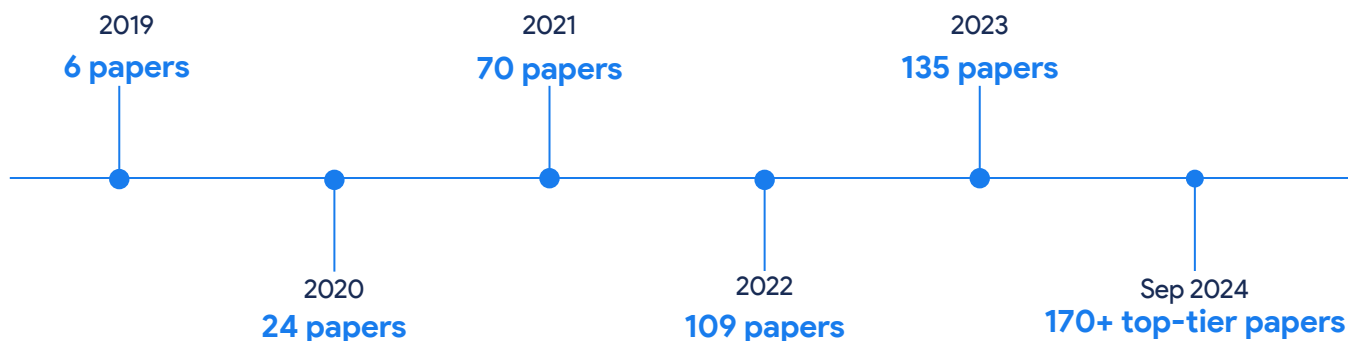
VinAI Residency Program was created to identify the top young AI talents that will be trained to become future AI experts and tech leaders in the fields. At VinAI, the residents are expected to work on real-world AI problems and applications as well as to conduct research in different techniques and methodologies.



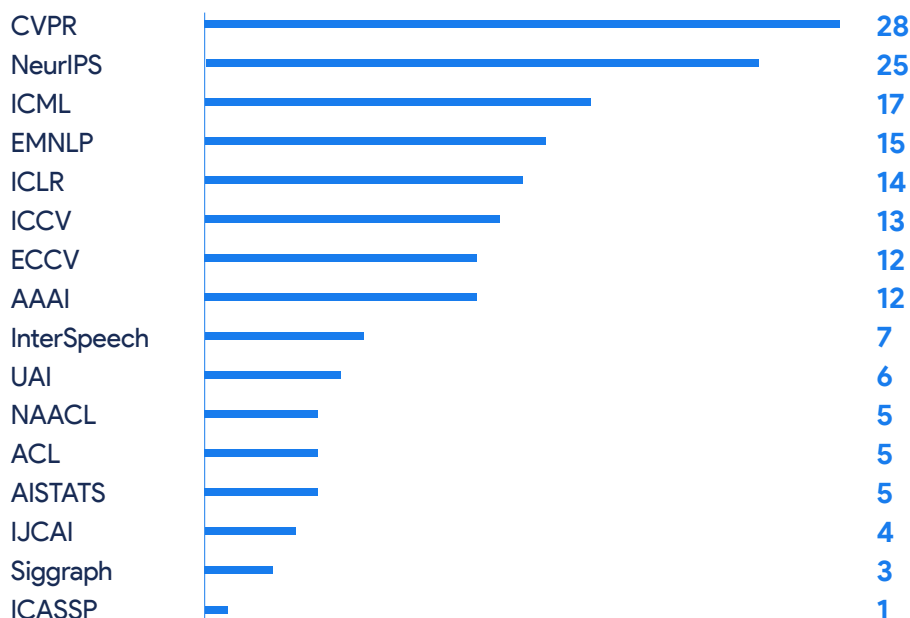
World-class AI Research

Research at VinAI is dedicated to expanding the boundaries of AI, fostering new applications, and deepening theoretical insights. While our research is often inspired by the transformative potential of practical applications, it is propelled by scientific curiosity. We tackle practical applications head-on, yet delve into core challenges, scrutinize established theories, and re-evaluate basic assumptions. This is followed by the development of algorithms to address these fundamental issues, always with an eye on cost-efficiency and the engineering hurdles of real-world deployment. Additionally, as we push forward in both science and engineering, we maintain vigilance over the risks associated with AI models, proactively investigating these risks, establishing measures to ensure the integrity of AI models, and devising strategies to combat the misuse of AI. To date, VinAI has become the world's top 20 AI R&D companies* and published more than 170 publications in only the very best AI venues, spanning across three core areas of AI: Machine Learning (ICML, NeurIPS, ICLR), Computer Vision (CVPR, ICCV, ECCV), Natural Language Processing (ACL, EMNLP, InterSpeech), representing one of the highest concentrations of AI expertise in the region.

Our Publications by Year



Our Publications at Top-tier Conferences



*Scan the QR code to access Thundermark Capital report on the global AI research companies

Research Areas

Our research division is divided into four groups: Machine Learning, Computer Vision, Natural Language Processing, and Generative AI.

▶ Machine Learning

The ML group has conducted extensive research in optimal transport theory and its applications to AI model development, as well as self-supervised learning and domain adaptation.

▶ Computer Vision

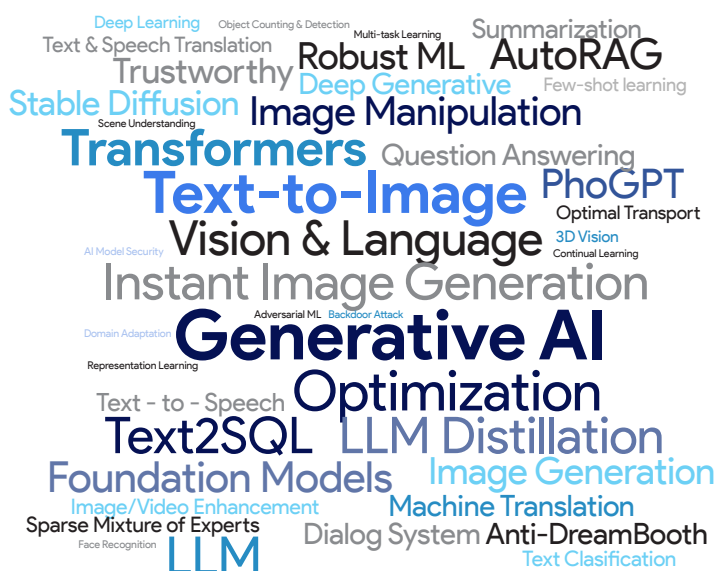
The CV group has focused on image manipulation and generation tasks such as text-to-image generation, style transfer, and image deblurring, and has also developed strategies for preventing unauthorized manipulation of personal photos. Their effort extends to analysis tasks like semantic segmentation, object counting, and 3D vision, and they have devised strategies for combating backdoor attacks.

▶ Natural Language Processing

The NLP group is at the forefront of developing models for low-resource languages and specific domains. Researchers from these groups collaborate closely on multidisciplinary projects and contribute to the development of applications and products.

▶ Generative AI

In the field of Generative AI, we have been pioneers, working on it even before the advent and popularity of tools like ChatGPT. Our current focus includes developing and releasing foundation models for the Vietnamese language, reducing the latency of text-to-image generation models, optimizing the inference throughput of LLMs, all while ensuring the reliability, trustworthiness of AI-generated content.



Generative AI

Our approach to Generative AI (GenAI) and Large Language Models (LLMs) is driven by our vision to make AI accessible to everyone. From optimized AI models to exceptional engineering, we have been moving aggressively to make GenAI faster, greener, and more efficient for people, businesses everywhere while addressing regional languages and needs.

▶ Foundation Models

Democratizing foundational models shows our dedication to the AI community.

SwiftBrush	PhoWhisper	PhoGPT
<p>SwiftBrush v2 (Instant Image Generation) sets a new standard in AI image generation. Unlike other models, it creates high-quality images (low FID) in a single step, surpassing both Generative Adversarial Network (GAN) and multi-step Stable Diffusion approaches.</p>	<p>Available in 5 versions: base, tiny, small, medium, large. Its robustness is achieved through fine-tuning the multilingual Whisper on an 844-hour dataset that encompasses diverse Vietnamese accents.</p>	<p>A new LLM developed for the Vietnamese nuances. PhoGPT is highly competitive compared to the closed-source GPT-4 model.</p>



Images generated by SwiftBrush

▶ Products and Frameworks

Customizing and enhancing the efficiency of Generative AI models for enterprises and developers



PRAISE

- Deliver efficient and secure generative AI solutions tailored for your business needs.
- Equipped with capabilities for tabular Question and Answer and text-to-SQL queries.
- Provide comprehensive multilingual support, including low-resource languages.



Generative Finetuning

- Automatic service for Generative AI developers to build domain-specific foundation model.
- Include capabilities for fine-tuning end-to-end genAI applications, such as Retrieval-Augmented Generation (RAG) applications

Next Level of Safety and Comfort

With our next-gen mobility solution that combines in-car monitoring and surrounding sensory systems, we are transforming the automotive industry by making driving a safer and more comfortable experience.





InteriorSense

This high-performance, ready-to-use in-cabin solution analyzes behavior patterns and provides real-time alerts, aiding drivers on the road.



Our multi-camera system eliminates all blind spots and offers a complete 360-degree view around the vehicle in real-time.

SurroundSense

-  Driver & Occupants Monitoring Systems (DOMS)
-  AR HUD (Augmented Reality Head-Up-Display)
-  MirrorSense - Automatic Mirror Adjustment
-  DrunkSense - Passive Drunk Detection System

-  Advanced Surround View Monitoring System & Jelly View
-  Touch2Park - Level 2 Smart Parking
-  Memorized Parking Assist - Level 3 Smart Parking
-  Narrow Street Assistance

OUR HIGHLIGHTS

- 50K+** Ship-to-market cars
- 700K+** Vehicles set for shipment
- 08** Different car models

REGULATIONS COMPLIANCE

- InteriorSense** GSR phase 1 - 2021/1341 DDAW
- SurroundSense** NHTSA FMVSS 111 & UN ECE R158

WHY US?

ACCURACY: Our AI model ranked 6th in NIST 2020. Independent benchmark by an EU Tier 1 supplier confirms our solution equals the performance of the world's top 2 DMS suppliers.

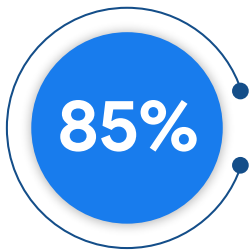
INNOVATION: World's first features developed at lightning speed.

COMPATIBILITY: Portable with different platforms & systems, adaptable to vehicles of all price ranges. Featuring multiple camera placement options (Steering Column, Instrument Cluster, Center Stack, Rear View Mirror).

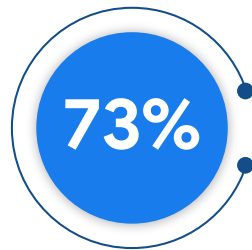
World's First Features

▶ DrunkSense: The First Passive Drunk Detection System without a Breathalyzer

- Using a **multi-sensor approach** that combines input from the DMS camera, such as tracking eye movement and blinking, with vehicle information like braking and acceleration control.
- **No user interaction needed.** Ability to detect 'drunk driving even when their BAC is below the legal limit.
- Ability to **distinguish between impaired drivers and intoxicated passengers.** Our advanced algorithms also filter out drowsiness and distractions, minimizing false alarms.

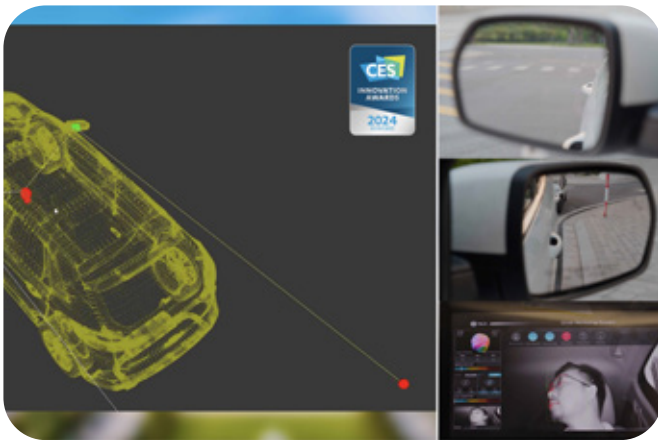


sensitivity in drunk driver detection, 8% higher than industry standards



of life-saving warnings before accidents occur, 20% higher than the SOTA approach

▶ MirrorSense: The World's First AI-driven Automatic Mirror Adjustment Technology



- Received the **CES 2024 Innovation Award.**
- Precisely detects the car driver's head position and eye gaze direction with a 10mm accuracy, then **automatically adjusts the position of all corresponding mirrors.**
- Can be easily expanded to enhance safety applications while driving, such as augmented reality heads-up displays and auto-adjust seat settings, providing an intelligent, convenient, and safe driving experience on every journey.

▶ JellyView: A 3D Transparent Mode for a Whole Car-body Transparency

- Providing a clear view beneath their vehicle. The view is constructed using images from sensors and cameras, enabling JellyView to be **seamlessly integrated into existing vehicles without additional hardware.**
- Unlike typical SVM providers using front or rear cameras for undercarriage visuals, JellyView synthesizes data from all cameras to ensure coverage at every steering angle.
- Offering **diverse viewing modes**, including front/rear and surround/top view.



Real-time Guard that Makes Any Cameras Smarter

Our AI system surpasses traditional video monitoring by analyzing activity as it happens. Advanced features such as facial recognition, body language analysis, and real-time notification work together, allowing for immediate detection of suspicious behavior and unauthorized access. Thanks to SmartStream (High Throughout Video Analytics SDK) and AI Optimization, Smart Edge can support large-scale systems with thousands of camera streams while remaining remarkably cost-effective compared to other solutions.



▶ Features

Safety

- Face Anti Spoofing
- Blacklist/Whitelist
- Intruder Detection
- Harassment Detection
- Kidnapping Detection
- Loitering Detection
- Crowd Estimation
- Person and Vehicle Attribute Recognition
- Person Re-identification

Compliance

- Parking Violation Detection
- Face Mask Policy Violation Detection
- Line Crossing Detection
- Unauthorized Object Detection in Hallways
- Unauthorized Object Detection in Elevators
- Pet Detection

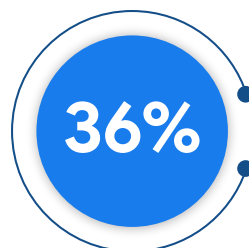
Convenience & Well-being

- Licensing Plate Recognition
- Fall/Unconsciousness Detection
- Identification
- People Counting

▶ Why Us



AI features Smart Edge deployed for customers



saving in CapEx



Building the Next Generation of Thought Leaders in AI

Launched in the summer of 2019, **the AI Residency Program** was established to identify and nurture exceptional AI talent in Vietnam. Our goal is to empower these young minds to become future thought leaders in the field. Through our rigorous two-year program, residents gain invaluable hands-on experience working alongside world-class AI researchers. This immersive experience equips them with the skills and knowledge necessary to make significant contributions to the field of AI.

The AI residents will tackle real-world AI challenges and explore cutting-edge techniques and methodologies. They are guided through the research process and taught how to effectively consult materials, conduct thorough research, and adhere to international standards.

Some PhD Programs Where Our AI Residents Go



110+ residents recruited, representing the top 1% of AI talents in Vietnam

80+ accepted papers with our residents as first authors

40+ GenAI & AI optimization applied projects completed

80% pursuing PhD post-residency with full scholarships (35% went to the Top 20 CS programs)

30+ top-tier host universities in 09 countries

*as of Q3 2024



AiDay

AI DAY - Over the last few years, we have established Vietnam's position on the global map of the AI research community with this event. AI Day brings together leading researchers, policymakers, and practitioners from the United States, Europe, Australia, and more, to exchange on how AI is transforming our societies, economies, and environment.

2023

EMPOWER AI: REALITY REIMAGINED

AI Day 2023 was the pinnacle of excellence in AI, where the brightest minds, including OpenAI CEO Sam Altman, gathered to share their visionary insights on how AI can reimagine the reality.



2022

EMPOWER THE FUTURE

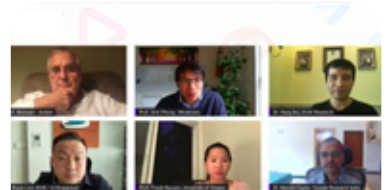
AI Day 2022 attracted over 3,000 global researchers, policymakers, and practitioners to exchange on how AI is transforming our societies, economies, and environment.



2021

EMPOWER INNOVATIONS

AI Day 2021 was held virtually and featured a remarkable lineup of distinguished speakers, especially Prof. Michael I. Jordan, one of the most influential computer scientists.



2020

RISING TO THE CHALLENGES

AI Day 2020 covered a diverse range of topics, including the vision and strategy for AI development, with a focus on the challenges and opportunities for developing countries.



2019

FROM RESEARCH TO APPLICATIONS

Our first AI day drew an impressive 1,200 attendees eager to explore cutting-edge research and real-world applications in the field of AI.





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