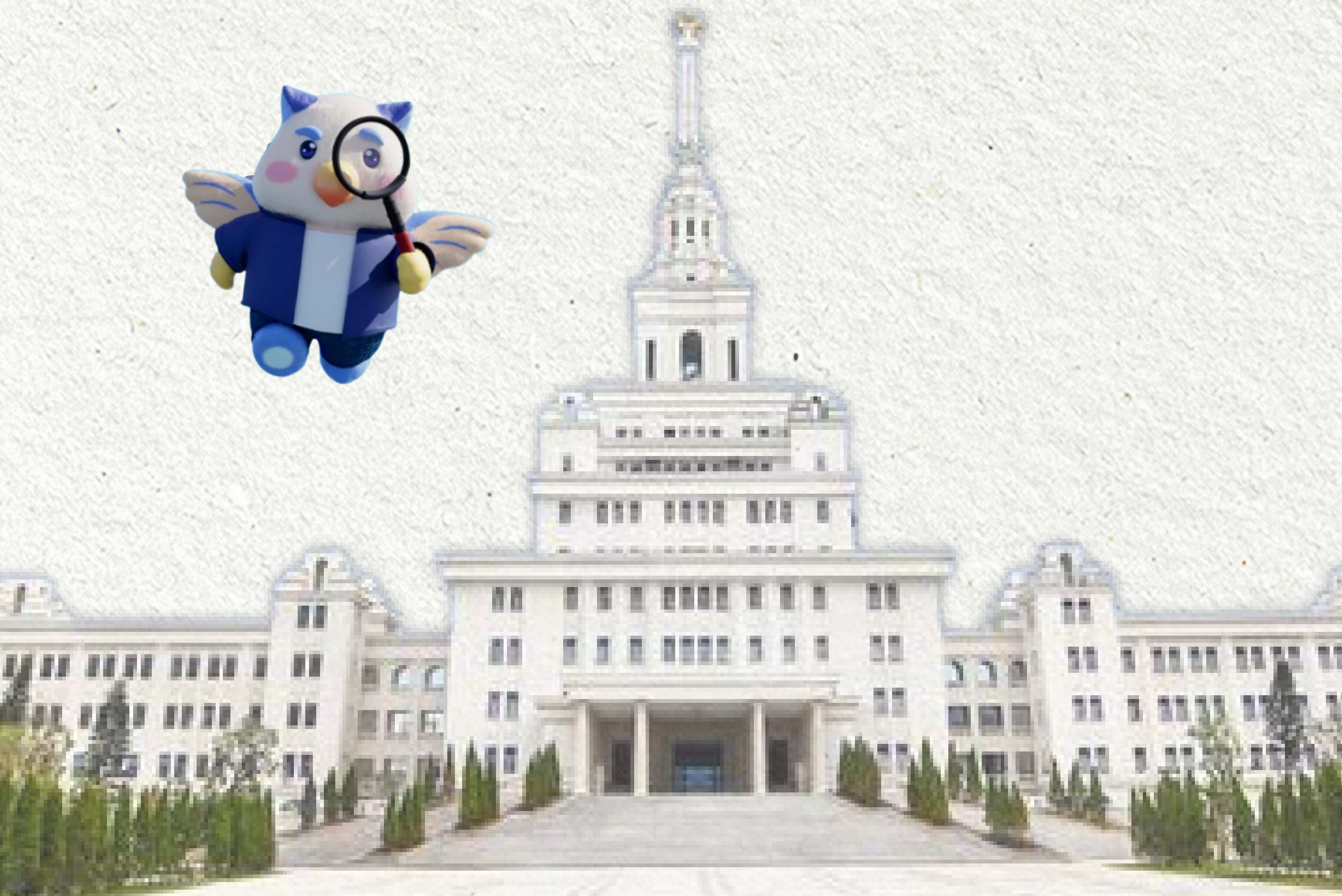# RESEARCH INTERNSHIP OPPORTUNITIES
AT VINUNIVERSITY

(Open for international students from Partner Universities)
Academic Year 2025-2026 and Summer 2026

PREPARED BY: VINUNI GLOBAL ENGAGEMENT DEPARTMENT
SEPTEMBER, 2025

Dear Distinguished Partners and Incoming Students,

Warmest greetings from VinUniversity, Vietnam!

We are delighted to extend a warm invitation to students from our esteemed partner institutions to apply for our research internship programs at VinUniversity. This is an incredible opportunity to dive into the world of academic research, work alongside top-tier faculty, and contribute to cutting-edge projects.

At VinUni, we believe in the power of research to drive innovation and solve global challenges. Our world-class faculty are at the forefront of their fields, and they are eager to mentor the next generation of scholars. As a research intern, you will have the unique opportunity to:

- Gain hands-on experience: Work directly on active research projects, learning valuable skills in data analysis, experimental design, and scientific writing.
- Collaborate with VinUni distinguished faculty: Be mentored by leading professors and work alongside talented graduate students and fellow interns.
- Contribute to impactful research: Your work can lead to co-authored publications, conference presentations, or the development of new technologies.
- Explore your academic passions: Deepen your understanding of a specific field and determine if a career in research or a graduate-level degree is the right path for you.

Scholarship Opportunity:
We are also thrilled to announce the availability of the Inbound Global Exchange Student Ambassador (I-GESA) Scholarships for international students from partner universities to participate in our research internship programs in Vietnam.
We encourage all interested students to explore the research profiles of our faculty and projects in this flipbook.

This is more than just an internship; it's a chance to become part of a vibrant intellectual community and build a foundation for a successful career in academia or industry.

We look forward to welcoming you to VinUniversity and supporting your journey of discovery.

Sincerely,

Global Engagement Department
VinUniversity

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FACTSHEET

EST 2019
as the first private not-for-profit university of Vietnam established by Vingroup, the largest conglomerate in Vietnam

1 campus
located at Vinhomes Ocean Park, Hanoi, Vietnam, 23 hectares

15,800
billion VND of investment commitment from Vingroup

1,929
students from 32 countries

17
degree programs offered from Bachelor, Master's, PhD levels

Website

4 colleges

- College of Arts and Sciences
- College of Business & Management
- College of Engineering & Computer Science
- College of Health Sciences

4 training centers

- Center for Education Management
- VinUniversity Medical Simulation Center
- Entrepreneurship Lab
- Hospitality Lab

Research centers

- Center of Environmental Intelligence
- Centre for Generative AI Research
- VinUni Center for Materials Innovation and Technology (VinCMIT)
- 3D Technology in Medicine Center
- VinUni - Illinois Smart Health Center
- Smart Green Transformation Center
- Vinmec VinUni Research Institute of Stem cell and Gene Technology
- VinUni Research Institute of Immunology
- Institute of VinUni Big Data Research
- Centre for Innovation in Health Sciences

Annual Report 2024

75+ Academic Partners

25% Cohort 1 & 2 graduates pursued their Master's or Ph.D. degree at prestigious universities

70+ Industry Partners

440+ Outbound students

50.1% Number of graduates with outbound global exchange

1,500+ Inbound Students

98% Cohort 1 students with industry orientation got a job after 6 months of graduation

► VINUNI QS RANKING AND RATINGS

QS STARS
RATED FOR EXCELLENCE

The youngest and fastest university in the world to achieve QS 5-star overall rating

★★★★★ **Arts**

★★★★★ **Program Strength**

★★★★★ **Global Engagement**

★★★★★ **Teaching**

★★★★★ **Inclusiveness**

★★★★★ **Good Governance**

★★★★★ **Social Impact**

★★★★★ **Academic Development**

★★★★★ **Employability**

FIBAA — The youngest university in Vietnam to receive FIBBA Institutional Accreditation

unesco Chair — Vietnam's first UNESCO Chair

Accreditation Council for Graduate Medical Education — Become the first Graduate Medical Education university in Vietnam to be accredited by the ACGME-I

ACEN™ Accreditation Commission for Education in Nursing — Attain Candidacy for Nursing Program in 2023

Accreditations in progress   wfme   ABET   AACSB
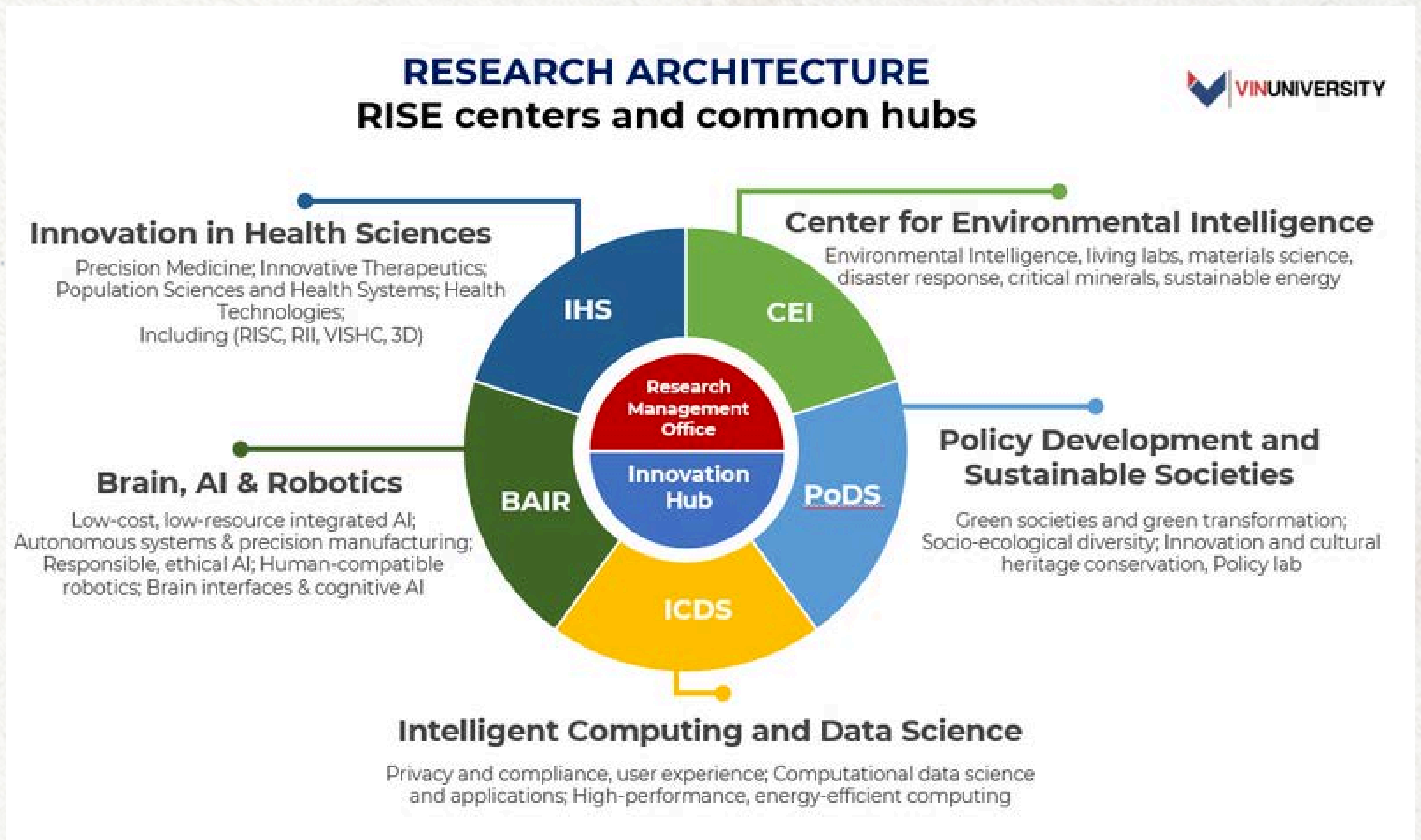
VINUNI RESEARCH FOCUS

Research Themes

1. Innovation in Health Sciences
2. Environmental Intelligence
3. Brain, AI, and Robotics
4. Intelligent Computing and Data Science
5. Policy Development and Sustainable Societies

RESEARCH ARCHITECTURE
RISE centers and common hubs

VINUNIVERSITY

Innovation in Health Sciences

Precision Medicine; Innovative Therapeutics; Population Sciences and Health Systems; Health Technologies; Including (RISC, RII, VISHC, 3D)

Center for Environmental Intelligence

Environmental Intelligence, living labs, materials science, disaster response, critical minerals, sustainable energy

Brain, AI & Robotics

Low-cost, low-resource integrated AI; Autonomous systems & precision manufacturing; Responsible, ethical AI; Human-compatible robotics; Brain interfaces & cognitive AI

Policy Development and Sustainable Societies

Green societies and green transformation; Socio-ecological diversity; Innovation and cultural heritage conservation, Policy lab

Intelligent Computing and Data Science

Privacy and compliance, user experience; Computational data science and applications; High-performance, energy-efficient computing

- IHS
- CEI
- BAIR
- Research Management Office
- Innovation Hub
- PoDS
- ICDS

SCHOLARSHIP

INBOUND GLOBAL EXCHANGE STUDENT AMBASSADOR SCHOLARSHIPS (I-GESA)

VND40 MILLION (US$~1,570)

For full-time students from partner universities participating in one research internship exchange program at VinUni under the Student Exchange Agreement

Each partner university may nominate **up to 3 students for the I-GESA Scholarships annually.**

The I-GESA is a flat rate grant used to **cover accommodation** and **personal living expenses** during the exchange period at VinUni.

REQUIREMENTS FOR SCHOLARSHIP RECIPIENTS

- ☑ **Be nominated** by the partner university
- ☑ **Meet VinUni's admission requirements** for research exchange students and **fulfill the requirements** for the research projects

READ MORE

CONTACT US 📞 +84-2471 089 779 (ext. 9006) ✉ globalexchange@vinuni.edu.vn

HOW TO APPLY

REQUIREMENTS

- Full-time university study at home institution by the time students commence the semester exchange at VinUni; a grade point average (CGPA) is not less than 2.5 accumulatively.
- English Level

IELTS: Minimum of 6.5 with no band score lower than 6.0 or

TOEFL iBT: Minimum 79 with at least 20 for writing, 18 for speaking, 15 for reading, and 15 for listening or

Pearson Test of English (Academic) – Minimum overall score of 58 with no communicative skills score less than 50 or

Cambridge English Certificate in Advanced English (CAE) – Minimum 176 with no skill below 169 in any component or

Confirmation letter of language proficiency issued by the home university.

- # Age: 18 or above
- Research experience is preferred but not mandatory.

APPLICATION REQUIREMENTS

Prepare and submit the following documents:

- **Curriculum Vitae** (CV)
- **Statement of Purpose** (300-500words): Why you want to join, your research interests, and your goals
- **Official Transcript**
- **Letter of Recommendation** (from a faculty member at your current institution or International Office) (*optional*)
- **English Language Proficiency Certificate** or **Letter of Confirmation of Language Proficiency**

APPLICATION TIMELINE

- **Application Open**: 15 Sept
- **Application Deadline**: on a rolling basis until all slots for both scholarships and research internships are filled

STEPS TO APPLY

- Choose Your Research Area
- Visit VinUni Research projects or contact faculty to explore available projects.
- Prepare Your Application Package
- Make sure all documents are in PDF format and clearly labeled.
- Submit the Application Form to Your Home University

CONTACT INFORMATION

Contact person: Ms. Quyen Thai, Global Engagement Officer

Phone: (+84) 2471089779 (Ext. 9006)

Email: globalexchange@vinuni.edu.vn

Office: Room I322, 3rd floor, Building I, VinUniversity campus, Vinhomes Ocean Park, Gia Lam, Hanoi

LIST OF RESEARCH INTERNSHIP PROJECTS

No.	Project code	Project Name	Project Supervisor
1	VINUNI01	Green Serverless Computing for Resource-Efficient AI Training	Assoc. Prof. Kok-Seng Wong
2	VINUNI02	From Trust to Threat: Assessing Privacy Risks in Modern Chatbot Interactions	Assoc. Prof. Kok-Seng Wong
3	VINUNI03	FinTech, sovereign ESG factors, and Global Financial Development	Assistant Prof. Hai Hong Trinh
4	VINUNI04	V-IndoorCARE: An advanced AI-enabled environmental simulation and HVAC control system for greener and healthier multi-user indoor facilities in Vietnam	Assistant Prof. Le Duy Dung
5	VINUNI05	ESKAPE+ Vietnam: Estimating the Health and Economic Burden of Antimicrobial Resistance (AMR) in Vietnam and Piloting Feasible	Assis. Prof. Jeff Mayne, Dr. Quan Nguyen, Prof. Andrew W. Taylor-Robinson
6	VINUNI06	NimbusClear - Thermoelectric anti-dew prototype for maximizing CPV solar energy generation	Assistant Prof. Matthew Rolley
7	VINUNI07	ResoSense — RF Resonant Wearable Glucose Sensing	Assistant Prof. Matthew Rolley
8	VINUNI08	Evaluating anti-aging efficacy of mesenchymal stem cell-derived extracellular vesicles in a murine model	PI: Prof. Nguyen Thanh Liem Co-PI: Dr. Bui Van Dat, Dr. B. Pharm
9	VINUNI09	Digital Twin Platform for Green Transportation	Assoc. Prof. Nguyen-Ngoc Doanh
10	VINUNI10	Digital Twin Platform for Smart Charging	Assoc. Prof. Nguyen-Ngoc Doanh
11	VINUNI11	Digital Twin Platform for Robot Charging	Assoc. Prof. Nguyen-Ngoc Doanh
12	VINUNI12	Flooding early warning and prediction	Assoc. Prof. Nguyen-Ngoc Doanh
13	VINUNI13	Korean FDI in Vietnam: Cases and Insights for Business, Policy, and Education	PI: Dr. Young Un Kim Co-PI: Dr. Jin Suk Park
14	VINUNI14	AI companion, customer experience management	Assistant Prof. Jenny Le

LIST OF RESEARCH INTERNSHIP PROJECTS

No.	Project code	Project Name	Project Supervisor
15	VINUNI15	Detecting Greenwashing and Greenhushing Risks with Advanced Natural Language Processing: Toward Smarter Green Finance and Strategy	Assitant Prof. Nguyen Thi Mai Lan Assoc. Prof. Mo Elhaj
16	VINUNI16	Measuring emerging technology adoption at firm level using Large Language Models	Dr. Do Bao Linh
17	VINUNI17	Enhancing Precision Digital Pathology with an AI-powered Platform Accelerated by Supercomputers	PI: Ravishankar K. Iyer (UIUC) Key member: Pham Huy Hieu,
18	VINUNI18	Developing a unified, low-cost, self-care mobile health application for common disease screening and early detection in low- and middle-income countries	Prof. Mark Hasegawa-Johnson (UIUC), Prof. Minh Do (UIUC) , Dr. Hieu Pham (VinUni)
19	VINUNI19	Evaluating the Effect of Antiviral Drugs using Polarized Light Imaging and Machine Learning Approaches: The Case of Human-induced Pluripotent Stem Cell-derived Cardiomyocytes	Asst. Prof. Hieu Pham
20	VINUNI20	Green Chemistry with AI and High-throuput robotics for Materials Discovery	Asst. Prof. Nguyen Dang Tung
21	VINUNI21	Organic semiconducting electronics in the fiber forms for high-tech textiles	Asst. Prof. Nguyen Dang Tung
22	VINUNI22	Optimizing the stability/performance metrics of crosslinked organic semiconductors with robotic assistance method for wearable electronic devices	Asst. Prof. Nguyen Dang Tung
23	VINUNI23	Water-soluble super-capacitors based on organic mixed ionic-electronic conductors	Asst. Prof. Nguyen Dang Tung
24	VINUNI24	Exploring Cost-Effective printed circuit board (PCB) Substrates for OrganicElectrochemical Transistors (OECTs) Fabrication	Asst. Prof. Nguyen Dang Tung
25	VINUNI25	Inversed design for mechanical mechanical drone.	Asst. Prof. Nguyen Dang Tung
26	VINUNI26	Fabrication and Characterization of Perovskite Light-Emitting Diodes (PeLEDs)	Asst. Prof. Le Van Quynh
27	VINUNI27	Improved Performance of Perovskite Light-Emitting Diodes by Inverse Design Approach	Asst. Prof. Le Van Quynh
28	VINUNI28	Improving NLP Applications in Low-resource Languages: One Country and One Use Case at a time	Asst. Prof. Khoa Dang Doan
29	VINUNI29	AI Case Study Lab: Capturing real-world AI journeys from Vietnam to the world	Dr. Abhishek Nayak

GREEN SERVERLESS COMPUTING FOR RESOURCE-EFFICIENT AI TRAINING

- **Project Lead:** Assoc. Prof. Kok-Seng Wong
- **Project code**: VINUNI01
- **# of positions available:** 2-3
- **Expected Timeline of the Research Internship:** Minimum 6 months commitment (can work remotely after the internship period)
- **Field/Topic/Focus/Nature of the project:** Serverless Computing; Distributed Machine Learning (Federated Learning)
- **Website:** https://www.sail-research.com/

Bio

PROJECT DESCRIPTION

With the growing demand for artificial intelligence (AI) applications, efficient and sustainable computation is needed for AI model training. Traditional server-based architectures consume high energy and resources, causing environmental concerns and costs. Serverless computing offers on-demand resources and scalability. This project explores using serverless computing for efficient AI training, aiming to reduce energy use and resource consumption.

RESEARCH REQUIREMENTS

EXPERIENCES NEEDED	- Computer Science, Data Science, and other Engineering majors with experience working on AI-related projects. - Good programming skills.
EXPECTED ROLES OF THE INTERN/RESEARCH ASSISTANT (RA)	Conduct in-dept literature review, assist in designing experiments, investigate and implement optimizations in serverless computing.
EXPECTED OUTCOMES	- A detailed summary of the project's findings, insights from experiments, technical implementations, and proposed next steps. - A working prototype that demonstrates AI model training on a serverless architecture (e.g., AWS Lambda, Google Cloud Functions).

FROM TRUST TO THREAT: ASSESSING PRIVACY RISKS IN MODERN CHATBOT INTERACTIONS

- **Project Lead:** Assoc. Prof. Kok-Seng Wong
- **Project code**: VINUNI02
- **# of positions available:** 2~3
- **Expected Timeline of the Research Internship:** Minimum 6 months commitment (can work remotely after the internship period)
- **Nature of the project:** AI-based Chatbot, Privacy-Preserving
- **Website:** https://www.farm2vets.com/en

Bio

PROJECT DESCRIPTION

This research project investigates the growing concerns around data privacy in AI-powered chatbots. As chatbots handle sensitive user information, risks such as unauthorized data collection, breaches, and misuse have raised ethical and legal questions. The study examines existing privacy vulnerabilities, evaluates compliance with regulations like GDPR, and explores technical and policy-based solutions to enhance user data protection. Students will get an opportunity to collaborate with the Farm2Vet chatbot tech team.

RESEARCH REQUIREMENTS

EXPERIENCES NEEDED	• Computer Science, Data Science, and other Engineering majors with experience working on AI-related projects. • Good programming skills.
EXPECTED ROLES OF THE INTERN/RESEARCH ASSISTANT (RA)	• Conduct high-level literature review and synthesize findings. • Review literature and assess chatbot compliance gaps (GDPR, CCPA). • Implement data protection measures (encryption, anonymization, secure storage). • Collaborate with Farm2Vet to develop and test privacy-preserving chatbot features.
EXPECTED OUTCOMES	• A detailed summary of the project's findings, insights from experiments, technical implementations, and proposed next steps. • A working prototype that demonstrates how to protect sensitive data from the AI-based chatbot.

FINTECH, SOVEREIGN ESG FACTORS, AND GLOBAL FINANCIAL DEVELOPMENT

- **Project Lead:** Assistant Professor Hai Hong Trinh
- **Project code:** VINUNI03
- **# of positions available:** 3~4 (Flexible)
- **Expected Timeline of the Research Internship:** Upon discussion with students
- **Nature of the project:** FinTech, Sovereign ESG, and Global Financial Development

Bio

PROJECT DESCRIPTION

Research projects investigate the roles of FinTech development in the green transition of global financial development. Under diverse sovereign ESG determinants, the projects empirically/theoretically examine the value of FinTech to the multidimensional development of financial markets and institutions. Research outcomes offer sound findings for the inclusive growth of the global economy.

RESEARCH REQUIREMENTS

EXPERIENCES NEEDED	Finance, Economics, and other related/close majors.
EXPECTED ROLES OF THE INTERN/RESEARCH ASSISTANT (RA)	Under supervision, students practice academic writing, applied econometrics, and machine learning with chosen programming packages. Priority goes to PhD-track students skilled in big data, finance, and international macroeconomics; others may join case-by-case with tailored work.
EXPECTED OUTCOMES	Complete findings with practical policy implications.

V-INDOORCARE

An advanced AI-enabled environmental simulation and HVAC control system for greener and healthier multi-user indoor facilities in Vietnam

- **Project Lead:** Assistant Prof. Le Duy Dung
- **Project code**: VINUNI04
- **# of positions available:** 2~3
- **Expected Timeline of the Research Internship :** 6 months (can work remotely after the internship period)
- **Nature of the project:** AI for HVAC control, green buildings, digital twin
- **Website:** https://vinif.org/en/annual/vinif-2024-da113-v-indoorcare-an-advanced-ai-enabled-environmental-simulation-and-hvac-control-system-for-greener-and-healthier-multi-user-indoor-facilities-in-vietnam/

Bio

PROJECT DESCRIPTION

Poor indoor environmental quality and high energy consumption threaten public health and sustainability in Vietnam's multi-user buildings. The V-IndoorCARE project improves indoor environments and energy efficiency by promoting greener, healthier spaces, enhancing well-being, reducing energy use, and supporting Vietnam's net-zero 2050 goal.

RESEARCH REQUIREMENTS

EXPERIENCES NEEDED	Computer Science, AI
EXPECTED ROLES OF THE INTERN/RESEARCH ASSISTANT (RA)	Conduct in-dept literature review, assist in designing experiments, investigate and implement optimizations in HVAC control
EXPECTED OUTCOMES	• A detailed summary of the project's findings, insights from experiments, technical implementations, and proposed next steps. • A working prototype of a digital version of an specified indoor space

ESKAPE+ VIETNAM: ESTIMATING THE HEALTH AND ECONOMIC BURDEN OF ANTIMICROBIAL RESISTANCE (AMR) IN VIETNAM AND PILOTING FEASIBLE ANTIMICROBIAL STEWARDSHIP (AMS) STRATEGIES (PHASE 1, 2)

- **Project Lead:** Assis. Prof. Jeff Mayne, Dr. Quan Nguyen, Prof. Andrew W. Taylor-Robinson
- **Project code**: VINUNI05
- **# of positions available:** 2~3
- **Expected Timeline of the Research Internship :** Minimum 6 months commitment; flexible start date (can work remotely after the internship period)
- **Nature of the project:** Antimicrobial resistance, infectious disease surveillance, hospital epidemiology, antimicrobial stewardship

Bio   Bio   Bio

PROJECT DESCRIPTION

Antimicrobial resistance (AMR) is a global health crisis, with Vietnam facing high rates from ESKAPE+ pathogens causing severe community and hospital infections. This project will analyze retrospective data on infection, antibiotic use, and resistance trends; implement a real-time Antimicrobial Stewardship Program (ASP) to optimize prescribing and reduce AMR; and monitor outcomes through surveillance and provider education.

RESEARCH REQUIREMENTS

EXPERIENCES NEEDED	Students or graduates in medicine, microbiology, public health, epidemiology, or related fields; familiarity with AMR, data analysis, or clinical research preferred.
EXPECTED ROLES OF THE INTERN/RA	Conduct literature review; assist in collection and analysis of microbiological, clinical, and prescribing data; support ASP implementation; contribute to reporting and dissemination
EXPECTED OUTCOMES	Practical experience in AMR surveillance and stewardship; High-impact research publications; skill development in data analysis and infectious disease control; policy-relevant insights for LMICs.

NimbusClear

THERMOELECTRIC ANTI-DEW PROTOTYPE FOR MAXIMIZING CPV SOLAR ENERGY GENERATION

- **Project Lead:** Assistant Prof. Matthew Rolley
- **Project code:** VINUNI06
- **Expected Timeline of the Research Internship**: Minimum 6 months commitment; flexible start date (can work remotely after the internship period)
- **# of positions available**: 2~3
- **Nature of the project**: Renewable Energy Generation Research

Bio

PROJECT DESCRIPTION

NimbusClear is a thermoelectric retrofit system that prevents dew and frost on concentrated photovoltaic (CPV) modules, where optical fogging can cause near-total shutdown of early-morning output. By maintaining the lens or glass just 2–3 °C above the dew point, it can recover up to 200 Wh/m² per event—equivalent to a 5–10 % annual yield boost in humid climates. With outputs including IP, funding leverage, and collaboration to advance Vietnam's 2050 net-zero goals, this distributed TEC solution managed by dew-point sensors and efficient current drivers delivers a step-change in CPV reliability and ROI without blocking incoming sunlight.

RESEARCH REQUIREMENTS

EXPERIENCES NEEDED	Electrical or mechanical engineering is a plus. Proactive, hands-on skills. Skills with simulation (CFD/Thermal) a bonus. Self-starter and motivated.
EXPECTED ROLES OF THE INTERN/RA	Assist in prototype design, manufacture and testing. Contribute toward longer term research objectives.
EXPECTED OUTCOMES	Hands-on engineering design and prototyping experiance. Experiance conducting research with best-practise data collection, experiance using subject matter-specific metrology and contributing to a viable final prototype.

ResoSense

RF RESONANT WEARABLE GLUCOSE SENSING

- **Project Lead:** Assistant Prof. Matthew Rolley
- **Project code:** VINUNI07
- **Expected Timeline of the Research Internship**: Minimum 6 months commitment; flexible start date (can work remotely after the internship period)
- **# of positions available**: 2~3
- **Nature of the project**: Wearable smart-devices for healthcare

Bio

PROJECT DESCRIPTION

This project advances non-invasive glucose sensing from design to hardware validation. With HFSS antenna design and MATLAB + VNA test rig complete, the focus is Step 3: experimental validation of RF split-ring resonator (SRR) antennas and flex-PCB/Rogers fabrication. Tasks include testing early sensor samples, preparing files for manufacturers, coordinating prototype builds, troubleshooting, and documenting results for team reports.

RESEARCH REQUIREMENTS

EXPERIENCES NEEDED	Electrical or mechanical engineering is a plus. Proactive, hands-on skills. Skills with simulation (RF/antennas) a bonus. Self-starter and motivated.
EXPECTED ROLES OF THE INTERN/RA	Assist in prototype deisign, manufacture and testing. Contribute toward longer term research objectives.
EXPECTED OUTCOMES	Hands-on engineering design and prototyping experiance. Experiance conducting research with best-practise data collection, experiance using subject matter-specific metrology and contributing to a viable final prototype.

EVALUATING ANTI-AGING EFFICACY OF MESENCHYMAL STEM CELL-DERIVED EXTRACELLULAR VESICLES IN A MURINE MODEL

- **Project Lead: PI:** Prof. Nguyen Thanh Liem
- **Co-PI:** Dr. Bui Van Dat, B. Pharm, PhD.
- **Project code:** VINUNI08
- **# of positions available:** 2~3
- **Expected Timeline of the Research Internship :**
  Minimum 6 months commitment;
  flexible start date (can work remotely after the internship period)
- **Nature of the project:** Biomedical engineering, stem cell-derived extracellular vesicles for anti-aging

Bio

PROJECT DESCRIPTION

This project aims to evaluate the anti-aging efficacy of extracellular vesicles derived from umbilical cord mesenchymal stem cells (UCMSC-EVs). Both fresh and lyophilized formulations will be produced and tested in vitro on senescent cell models and in vivo in aged mice. Key outcomes will include improvements in physical performance, reductions in systemic inflammation and senescence markers, and restoration of tissue structure and function in the kidney, heart, and skeletal muscle. The study is expected to provide preclinical evidence for a stable, ready-to-use UCMSC-EV therapy delivered intravenously to counteract age-related functional decline.

RESEARCH REQUIREMENTS

EXPERIENCES NEEDED	Biomedical Engineering, Medical Doctor, pharmacy, Cell experience. Have passion in researching is a plus point.
EXPECTED ROLES OF THE INTERN/RA	Conduct cell-related and pharmaceutical experiments. Conduct preclinical experiment, including in vivo and/or exvivo tissue analyses. Take part in writing paper if interesting.
EXPECTED OUTCOMES	Can handle cell-related experiments, in vivo experiments, and ex vivo experiments.

DIGITAL TWIN PLATFORM FOR GREEN TRANSPORTATION

- **Project Lead:** Assoc. Prof. Nguyen-Ngoc Doanh
- **Project code**: VINUNI09
- **# of positions available:** 2
- **Expected Timeline of the Research Internship:** Short term: 3 months | Long term: 6 months
- **Nature of the project:** Research Lab & Field trip

Bio

PROJECT DESCRIPTION

- Building virtual transportation system
- Simulating transportation scenarios
- Optimizing function and management of transportation systems
- Supporting decision - making: evaluating transportation plan; proposing transportation feasible strategies

RESEARCH REQUIREMENTS

EXPERIENCES NEEDED	Modelling and Simulation, Optimization, Data Science, Machine Learning
EXPECTED ROLES OF THE INTERN/RA	Depends on the intern's abilities and expectation
EXPECTED OUTCOMES	Experimental skills: Understand the fundamental modelling, simulation and machine learning, Necessary field trip experience, Data analysis, Scientific writing and presentation

DIGITAL TWIN PLATFORM FOR
SMART CHARGING

- **Project Lead:** Assoc. Prof. Nguyen-Ngoc Doanh
- **Project code**: VINUNI10
- **# of positions available:** 2
- **Expected Timeline of the Research Internship:** Short term: 3 months | Long term: 6 months
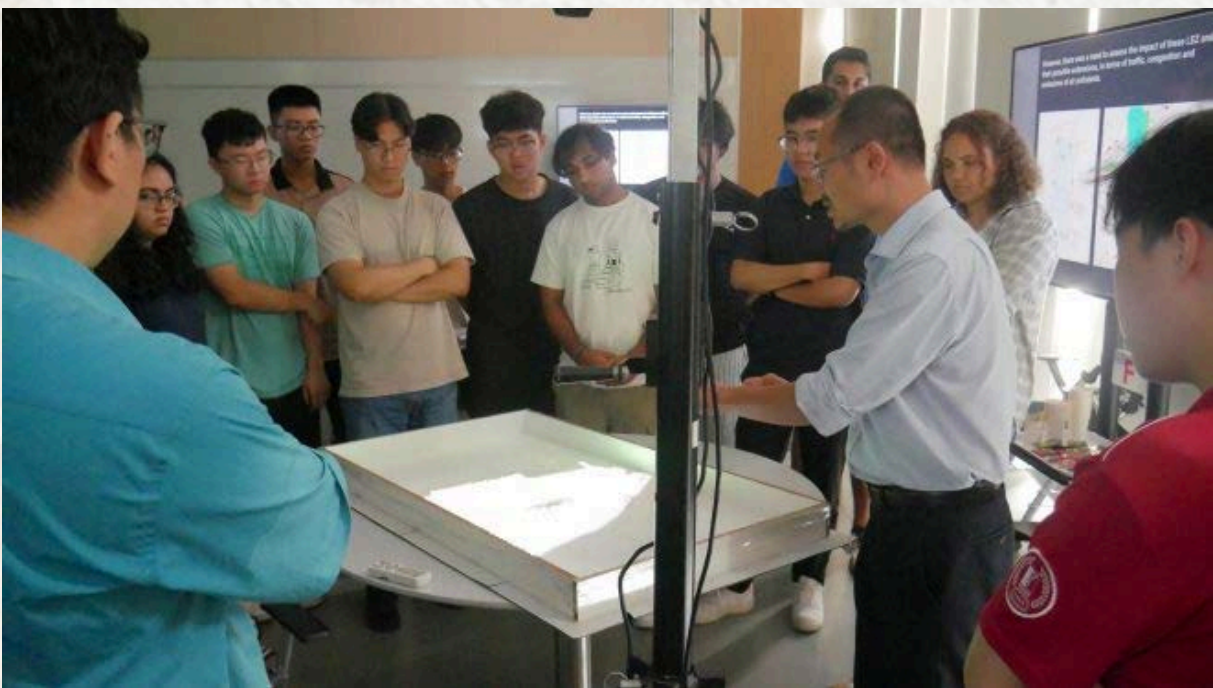- **Nature of the project:** Research Lab & Field trip

PROJECT DESCRIPTION

- Building virtual transportation system
- Simulating transportation scenarios
- Optimizing function and management of transportation systems
- Supporting decision - making: evaluating transportation plan; proposing transportation feasible strategies

RESEARCH REQUIREMENTS

EXPERIENCES NEEDED	Modelling and Simulation, Optimization, Data Science, Machine Learning
EXPECTED ROLES OF THE INTERN/RA	Depends on the intern's abilities and expectation
EXPECTED OUTCOMES	Experimental skills: Understand the fundamental modelling, simulation and machine learning, Necessary field trip experience, Data analysis, Scientific writing and presentation

DIGITAL TWIN PLATFORM FOR ROBOT CHARGING

- **Project Lead:** Assoc. Prof. Nguyen-Ngoc Doanh
- **Project code**: VINUNI11
- **# of positions available:** 2
- **Expected Timeline of the Research Internship:**
  Short term: 3 months | Long term: 6 months
- **Nature of the project:** Research Lab & Field trip

Bio

PROJECT DESCRIPTION

- Building virtual robot PATH system
- Simulating mobile robot PATH scenarios
- Optimizing function and management of robot systems
- Supporting decision -making: evaluating mobile robot plan; proposing mobile robot feasible navigations

RESEARCH REQUIREMENTS

EXPERIENCES NEEDED	Modelling and Simulation, Optimization, Data Science, Machine Learning
EXPECTED ROLES OF THE INTERN/RA	Depends on the intern's abilities and expectation
EXPECTED OUTCOMES	Experimental skills: Understand the fundamental modelling, simulation and machine learning, Necessary field trip experience, Data analysis, Scientific writing and presentation.

FLOODING EARLY WARNING AND PREDICTION

- **Project Lead:** Assoc. Prof. Nguyen-Ngoc Doanh
- **Project code:** VINUNI12
- **# of positions available:** 2
- **Expected Timeline of the Research Internship:**
  Short term: 3 months | Long term: 6 months
- **Nature of the project:** Research Lab & Field trip

Bio

PROJECT DESCRIPTION

- Building physical-based models
- Numerical simulation of flood models
- Using AI models to provide early warning and prediction of water levels and water depths
- Providing flood map and corresponding impact
- Proposing evacuation plan

RESEARCH REQUIREMENTS

EXPERIENCES NEEDED	Modelling and Simulation, Optimization, Data Science, Machine Learning
EXPECTED ROLES OF THE INTERN/RA	Depends on the intern's abilities and expectation
EXPECTED OUTCOMES	Experimental skills: Understand the fundamental modelling, simulation and machine learning, Necessary field trip experience, Data analysis, Scientific writing and presentation

KOREAN FDI IN VIETNAM: CASES AND INSIGHTS FOR BUSINESS, POLICY, AND EDUCATION

- **Project Lead: PI:** Dr. Young Un Kim**; Co-PI:** Dr. Jin Suk Park
- **Project code:** VINUNI13
- **# of positions available:** 5 (Flexible)
- **Expected Timeline of the Research Internship :** Minimum 6 months commitment (can work remotely after the internship period), flexible start date
- **Nature of the project:** Business/International Business and FDI/Archival data collection and field trips with interviews

Bio   **Bio**

PROJECT DESCRIPTION

This project aims to develop a comprehensive casebook that documents and analyzes Korean firms' foreign direct investment (FDI) in Vietnam. Since the 1990s, South Korea has become one of Vietnam's largest foreign investors, with leading corporations such as Samsung, LG, Lotte, Posco, and Hyundai playing pivotal roles in Vietnam's industrialization, supply chains, and economic transformation. The project will combine firm-specific cases, sectoral and policy analysis, and comparative and thematic chapters on institutional context, labor relations, ESG, governance, and innovation transfer.

RESEARCH REQUIREMENTS

EXPERIENCES NEEDED	• Business, finance, international business knowledge
EXPECTED ROLES OF THE INTERN/RA	• Data Collection from reports, statistics, academic sources, and news. • Summarization & Analysis through profiles, case summaries, tables, and charts. • Fieldwork & Interviews with logistics support, note-taking, and transcription.
EXPECTED OUTCOMES	• FDI Case Studies: 10–20 cases on leading Korean firms in Vietnam (e.g., Samsung, LG, Lotte, Hyundai). • Scholarly Outputs: textbook for teaching and peer-reviewed papers. • Policy Insights: evidence-based recommendations on industrial policy, governance, and FDI management. • Broader Implications: how Korea's FDI in Vietnam informs Vietnam's outward investment strategy.

AI COMPANION, CUSTOMER EXPERIENCE MANAGEMENT

- **Project Lead:** Assistant Prof. Jenny Le
- **Project code:** VINUNI14
- **# of positions available:** 2
- **Expected Timeline of the Research Internship:** Short term: 3 months | Long term: 6 months
- **Nature of the project:** Research Lab & Field trip
- **Website:** https://vinif.org/en/annual/vinif-2022-da00087-smart-cem-applying-artificial-intelligence-and-eye-tracking-in-designing-and-managing-delightful-customer-experiences-in-the-hospitality-sector/

Bio

PROJECT DESCRIPTION

This project takes a multidisciplinary approach, combining social and technical research to develop AI tailored for the hotel tourism industry. Unlike tech-only projects that often fail due to poor alignment with business operations, it brings together AI experts, customer behavior researchers, and business administrators to design practical systems. Customer research, including advanced methods like eye-tracking, will guide experiments and improve AI adoption.

RESEARCH REQUIREMENTS

EXPERIENCES NEEDED	Business, marketing or AI
EXPECTED ROLES OF THE INTERN/RA	• Assisting in literature review, data collection and analysis • Evaluating the impact of AI-based customer experiences mgt on customer behavior • Learn to design and improve AI systems in hospitality
EXPECTED OUTCOMES	Supporting team in data collection and data analysis Writing draft for literature review and methodology section Engaging in academic publications

DETECTING GREENWASHING AND GREENHUSHING RISKS WITH ADVANCED NATURAL LANGUAGE PROCESSING: TOWARD SMARTER GREEN FINANCE AND STRATEGY

- **Project Lead:** Dr. Nguyen Thi Mai Lan; Assoc. Prof. Mo Elhaj
- **Project code:** VINUNI15
- **# of positions available:** 2
- **Expected Timeline of the Research Internship:** Short term: 3 months | Long term: 6 months
- **Nature of the project:** LLM, AI, Corporate Finance, Asset Pricing, Financial Analysts

Bio   Bio

PROJECT DESCRIPTION

This project proposes to develop a dynamic and context-aware index for evaluating corporate environmental transparency, powered by advanced NLP and machine learning techniques. The index will integrate disclosures issued by firms with external sources such as news coverage and public commentary, enabling cross-source validation of sustainability claims. We will focus on both the U.S. and Vietnamese companies. In parallel, the project will examine how the index can support green financial and strategic decision-making by enhancing transparency, reducing information asymmetry, and promoting accountability in ESG reporting.

RESEARCH REQUIREMENTS

EXPERIENCES NEEDED	LLM, AI, Corporate Finance, Quantitative Analysis, Econometrics
EXPECTED ROLES OF THE INTERN/RA	Assisting in LLM model building and validation, building econometric model to examine the effectiveness of indices, assisting in literature review and academic writing.
EXPECTED OUTCOMES	Preliminary results of the econometric models, Summary of literature, Manuscript (optional)

MEASURING EMERGING TECHNOLOGY ADOPTION AT FIRM LEVEL USING LARGE LANGUAGE MODELS

- **Project Lead:** Dr. Do Bao Linh
- **Project code:** VINUNI16
- **# of positions available:** 2
- **Expected Timeline of the Research Internship:**
  Short term: 3 months | Long term: 6 months
- **Nature of the project:** LLM, AI, Firm Valuation, Asset Pricing

Bio

PROJECT DESCRIPTION

This project introduces an Emerging Technology Index (ETI) to measure firm and industry adoption of advanced technologies. Using Large Language Models (LLMs) applied to company reports and news, the ETI offers a more accurate and nuanced assessment than traditional proxies. It is designed to guide firms in resource allocation, assist investors in decision-making, and inform policymakers and society about both opportunities and risks—ranging from sustainability challenges to cybersecurity threats—in an increasingly digital economy.

RESEARCH REQUIREMENTS

EXPERIENCES NEEDED	LLM, AI, Corporate Finance, Econometrics
EXPECTED ROLES OF THE INTERN/RA	Assisting in model building and validation, building econometric model to examine the effectiveness of indices
EXPECTED OUTCOMES	Preliminary results of the econometric models

ENHANCING PRECISION DIGITAL PATHOLOGY WITH AN AI-POWERED PLATFORM ACCELERATED BY SUPERCOMPUTERS

- **Project Lead:** PI: Ravishankar K. Iyer (UIUC); Key member: Pham Huy Hieu
- **Project code:** VINUNI17
- **# of positions available:** 2
- **Expected Timeline of the Research Internship:**
  Short term: 3 months | Long term: 6 months
- **Nature of the project:** AI for Healthcare, Digital Pathology, Supercomputing, Bioinformatics, Cancer Research, Medical Imaging, Soft Robotics Surgery
- **Website:** https://smarthealth.vinuni.edu.vn/project/enhancing-precision-digital-pathology-with-an-ai-powered-platform-accelerated-by-supercomputers/

Bio   **Bio**

PROJECT DESCRIPTION

Development of a supercomputer-accelerated AI platform to analyze digital pathology images and multi-omics data for cancer (osteosarcoma, squamous cell carcinoma, adenocarcinoma, colorectal). The platform integrates Vietnamese patient data with NIH's TCGA dataset to create foundational AI cancer models.

RESEARCH REQUIREMENTS

EXPERIENCES NEEDED	- Background in AI/ML, bioinformatics, computer vision, probabilistic models, medical imaging, biomedicine, healthcare informatics. Experience with Python/ML frameworks or medical data a plus.
EXPECTED ROLES OF THE INTERN/RA	- Assist in data curation (Vietnamese patient data, multi-omics, pathology images). - Implement AI/ML models (weakly supervised learning, graph models, multimodal analysis). - Support validation with clinicians and pathologists."
EXPECTED OUTCOMES	- Foundational AI models for cancer diagnosis (osteosarcoma, squamous cell carcinoma, colorectal, cervical, breast, lung, liver, GI tract). - Open Vietnamese Cancer Atlas. - Technology transfer: patents, licensing, subscription services. - Training: 5 PhDs, 3 Masters, 10+ undergrad interns. - HIPAA-compliant secure health enclave deployment."

DEVELOPING A UNIFIED, LOW-COST, SELF-CARE MOBILE HEALTH APPLICATION FOR COMMON DISEASE SCREENING AND EARLY DETECTION IN LOW- AND MIDDLE-INCOME COUNTRIES

- **Project Lead:** Prof. Mark Hasegawa-Johnson (UIUC), Prof. Minh Do (UIUC) , Dr. Hieu Pham (VinUni)
- **Project code:** VINUNI18
- **# of positions available:** 2
- **Expected Timeline of the Research Internship:**
  Short term: 3 months | Long term: 6 months
- **Nature of the project:** Digital Health, Artificial Intelligence, Mobile Health, Preventive Medicine, Low-resource Healthcare
- **Website:** https://smarthealth.vinuni.edu.vn/project/developing-a-unified-low-cost-self-care-mobile-health-application-for-common-disease-screening-and-early-detection-in-low-and-middle-income-countries/

Bio   Bio   Bio

PROJECT DESCRIPTION

This project aims to develop an AI-powered, low-cost, multimodal mobile health application that can screen for and detect common non-communicable diseases (CVDs, chronic respiratory diseases, Parkinson's, and Alzheimer's). Data will be collected from smartphones and wearable devices (heart rate, blood pressure, SpO_2, audio, motion, facial data) and processed with machine/deep learning models. Clinical evaluation will be conducted in Vietnam and the tool will be applicable to LMICs.

RESEARCH REQUIREMENTS

EXPERIENCES NEEDED	Background in Computer Science, Data Science, Machine Learning, Biomedical Engineering, Signal Processing, Speech/Audio Analysis, or related fields. Experience with Python, ML frameworks (TensorFlow/PyTorch), and/or healthcare data preferred.
EXPECTED ROLES OF THE INTERN/RA	• Support data collection and annotation • Develop and implement ML models • Conduct literature reviews • Assist in clinical validation studies • Prepare reports and publications
EXPECTED OUTCOMES	• AI-based mobile health app for NCD early detection • Multimodal medical dataset (first of its kind in Vietnam) • Open-source tools for data collection and analysis • Publications, conference presentations • Potential technology transfer for healthcare impact in LMICs

EVALUATING THE EFFECT OF ANTIVIRAL DRUGS USING POLARIZED LIGHT IMAGING AND MACHINE LEARNING APPROACHES: THE CASE OF HUMAN-INDUCED PLURIPOTENT STEM CELL-DERIVED CARDIOMYOCYTES

- **Project Lead:** Dr. Hieu Pham
- **Project code:** VINUNI19
- **# of positions available:** 2
- **Expected Timeline of the Research Internship:**
  Short term: 3 months | Long term: 6 months
- **Nature of the project:** Biophotonics · Optical Imaging · Machine Learning · Drug Evaluation · Personalized Medicine
- **Website:**
  https://smarthealth.vinuni.edu.vn/project/evaluating-the-effect-of-antiviral-drugs-using-polarized-light-imaging-and-machine-learning-approaches-the-case-of-human-induced-pluripotent-stem-cell-derived-cardiomyocytes/

Bio

PROJECT DESCRIPTION

This project develops a non-invasive, label-free imaging method combined with machine learning to evaluate the effects of antiviral drugs (starting with Molnupiravir for SARS-CoV-2) on cardiomyocytes derived from human-induced pluripotent stem cells. It aims to replace fluorescence-based assays with polarized light imaging and AI analysis to assess drug safety, cytotoxicity, and treatment effectiveness at the cellular level.

RESEARCH REQUIREMENTS

EXPERIENCES NEEDED	Background in Biomedical Engineering, Biophotonics, Physics, Electrical Engineering, Computer Science, or related fields. Experience with optical imaging, cell biology, or ML/AI preferred.
EXPECTED ROLES OF THE INTERN/RA	• Support imaging experiments and data acquisition • Develop and test ML/AI models for image analysis • Perform literature reviews and data annotation • Contribute to data preprocessing, segmentation, and feature extraction • Assist in publications and conference presentations"
EXPECTED OUTCOMES	• Standardized protocol for label-free antiviral drug evaluation • Polarized light microscopy datasets of cardiomyocytes • ML/AI models for cytotoxicity and drug-effect analysis • Publications and open-source software tools • Training of VinUni students at UIUC on advanced optical imaging

Green Chemistry with AI and High-througput robotics for Materials Discovery

- **Project Lead:** Asst. Prof. Nguyen Dang Tung
- Project code: VINUNI20
- **# of positions available:** 2
- **Expected Timeline of the Research Internship:**
  Short term: 3 months | Long term: 6 months
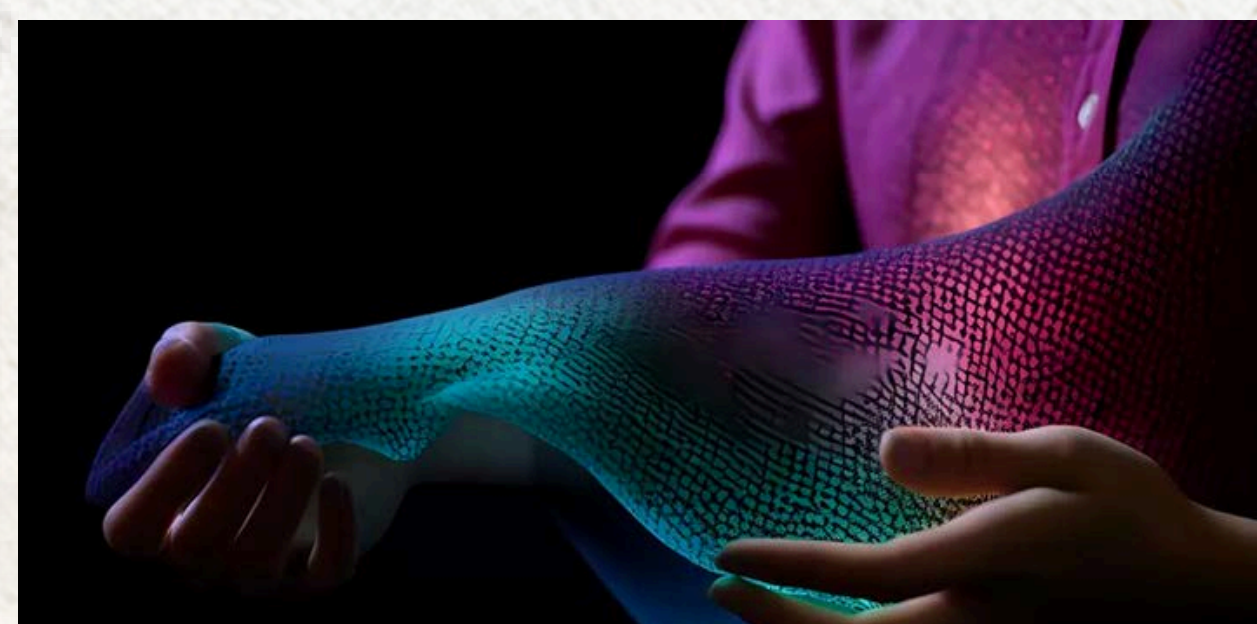- **Nature of the project:** Laboratory Investigation
- **Website:** https://www.intorlab.com.vn/

Bio

PROJECT DESCRIPTION

Recent environmental challenges have heightened interest in Green Chemistry, which designs products and processes that minimize harmful substances. Traditional discovery of new syntheses is time-consuming and expertise-dependent. We propose a multi-agent approach using robotic automation and AI to accelerate material synthesis. A Large Language Models platform will extract and structure literature data into datasets of experimental conditions and reaction parameters, guiding the choice of optimized conditions. A pipetting robot will then generate multiple reaction mixtures in parallel, while characterization techniques (optical microscopy, XRD, FTIR) analyze the resulting crystals. Finally, AI-based classification methods will compare experimental data (e.g., XRD curves) with databases to confirm the desired products.

RESEARCH REQUIREMENTS

EXPERIENCES NEEDED	Materials Science, Electrical Engineering, Mechanical Engineering
EXPECTED ROLES OF THE INTERN/RA	Depends on the intern's abilities and expectations
EXPECTED OUTCOMES	• Understand the fundamental properties of organic semiconductors and semiconducting polymers in energy storage and electronics • Master the basic and necessary lab experimental skills such as thin-film fabrication, absorption, electronic characterization • Scientific writing and presentation skills • Data analysis skills

Organic semiconducting electronics in the fiber forms for high-tech textiles

- **Project Lead:** Asst. Prof. Nguyen Dang Tung
- **Project code:** VINUNI21
- **# of positions available:** 2
- **Expected Timeline of the Research Internship:**
  Short term: 3 months | Long term: 6 months
- **Nature of the project:** Laboratory Investigation
- **Website:** https://www.intorlab.com.vn/

Bio

PROJECT DESCRIPTION

Fibers and textiles, though essential, remain low-tech and environmentally harmful, with reliance on conventional materials and cheap labor posing economic and ecological risks. A shift toward a high-tech textile industry producing higher-quality, functional, and durable materials is critical. Multimaterial fiber fabrication via thermal drawing offers a pathway to advanced functionalities, yet polymer semiconductors have been overlooked due to incompatibility with annealing. This proposal develops an integrated process combining 3D multimaterial printing (for preform creation), thermal drawing (for fiber formation), and solution-based electrochemical processing (for polymer semiconductor integration). The resulting functional fiber substrates could enable applications such as organic solar cells, advancing sustainable and innovative textiles.

RESEARCH REQUIREMENTS

EXPERIENCES NEEDED	Materials Science, Electrical Engineering, Mechanical Engineering
EXPECTED ROLES OF THE INTERN/RA	Depends on the intern's abilities and expectations
EXPECTED OUTCOMES	- Understand the fundamental properties of organic semiconductors and semiconducting polymers in energy storage and electronics - Master the basic and necessary lab experimental skills such as thin-film fabrication, absorption, electronic characterization - Scientific writing and presentation skills - Data analysis skills

Optimizing the stability/performance metrics of crosslinked organic semiconductors with robotic assistance method for wearable electronic devices

- **Project Lead:** Asst. Prof. Nguyen Dang Tung
- **Project code:** VINUNI22
- **# of positions available:** 2
- **Expected Timeline of the Research Internship:**
  Short term: 3 months | Long term: 6 months
- **Nature of the project:** Laboratory Investigation
- **Website:** https://www.intorlab.com.vn/

Bio

PROJECT DESCRIPTION

Wearable electronic devices are rapidly expanding in healthcare, fitness, and consumer electronics, driving demand for flexible, durable, and high-performance materials. Organic mixed ionic-electronic conductors (OMIECs), particularly PEDOT:PSS, are widely used for flexible, stretchable electrodes, but suffer from poor stability and performance in aqueous environments. This proposal aims to optimize crosslinking and processing of PEDOT: PSS using robotic automation, enabling precise control of crosslinker concentrations to enhance electrical properties and durability. The optimized materials will then be applied to the fabrication of organic electrochemical transistors (OECTs), where solution stability critically influences device performance.

RESEARCH REQUIREMENTS

EXPERIENCES NEEDED	Materials Science, Electrical Engineering, Mechanical Engineering
EXPECTED ROLES OF THE INTERN/RA	Depends on the intern's abilities and expectations
EXPECTED OUTCOMES	- Understand the fundamental properties of organic semiconductors and semiconducting polymers in energy storage and electronics - Master the basic and necessary lab experimental skills such as thin-film fabrication, absorption, electronic characterization - Scientific writing and presentation skills - Data analysis skills

Water-soluble super-capacitors based on organic mixed ionic-electronic conductors

- **Project Lead:** Asst. Prof. Nguyen Dang Tung
- **Project code:** VINUNI23
- **# of positions available:** 2
- **Expected Timeline of the Research Internship:**
  Short term: 3 months | Long term: 6 months
- **Nature of the project:** Laboratory Investigation
- **Website:** https://www.intorlab.com.vn/

Bio

PROJECT DESCRIPTION

Climate change is an urgent global challenge. Developing environmentally friendly products and reducing carbon emissions from fossil fuels are essential to mitigate the severe societal and economic consequences. One promising solution is the development of water-soluble super-capacitors. These devices, based on organic mixed ionic-electronic conductors (OMIECs), offer several advantages. Their fabrication requires minimal annealing, reducing energy consumption and environmental impact. Organic materials can be synthesized in large quantities, making them suitable for mass production. Flexibility, tunability, and biocompatibility provide unique advantages over traditional inorganic materials. Water-based processing eliminates the need for harmful solvents and reduces the risk of chemical leaks, minimizing energy and environmental costs.

RESEARCH REQUIREMENTS

EXPERIENCES NEEDED	Materials Science, Electrical Engineering, Mechanical Engineering
EXPECTED ROLES OF THE INTERN/RA	Depends on the intern's abilities and expectations
EXPECTED OUTCOMES	• Understand the fundamental properties of organic semiconductors and semiconducting polymers in energy storage and electronics • Master the basic and necessary lab experimental skills such as thin-film fabrication, absorption, electronic characterization • Scientific writing and presentation skills • Data analysis skills

Exploring Cost-Effective printed circuit board (PCB) Substrates for OrganicElectrochemical Transistors (OECTs) Fabrication

Bio

- **Project Lead:** Asst. Prof. Nguyen Dang Tung
- **Project code:** VINUNI24
- **# of positions available:** 2
- **Expected Timeline of the Research Internship:**
  Short term: 3 months | Long term: 6 months
- **Nature of the project:** Laboratory Investigation
- **Website:** https://www.intorlab.com.vn/

PROJECT DESCRIPTION

Organic Electrochemical Transistors (OECTs) are attractive for bioelectronics due to their low cost, lightweight, and biocompatibility, but conventional fabrication on silicon substrates is prohibitively expensive for prototyping. This project proposes using FR4 Printed Circuit Board (PCB) substrates - a low-cost (~$2 each), durable, and thermally stable alternative widely used in electronics. To enhance performance, we apply surface treatments to improve hydrophobicity and optimize interdigitated contact dimensions (finger width, spacing, length) for efficient charge transport. OECTs fabricated on FR4 PCBs use PEDOT:PSS as the active channel material, chosen for its strong electrical and electrochemical properties. This approach reduces costs without sacrificing performance, offering an accessible platform to advance OECT-based biomedical devices.

RESEARCH REQUIREMENTS

EXPERIENCES NEEDED	Materials Science, Electrical Engineering, Mechanical Engineering
EXPECTED ROLES OF THE INTERN/RA	Depends on the intern's abilities and expectations
EXPECTED OUTCOMES	• Understand the fundamental properties of organic semiconductors and semiconducting polymers in energy storage and electronics • Master the basic and necessary lab experimental skills such as thin-film fabrication, absorption, electronic characterization • Scientific writing and presentation skills • Data analysis skills

Inversed design for mechanical mechanical drone

- **Project Lead:** Asst. Prof. Nguyen Dang Tung
- **Project code:** VINUNI25
- **# of positions available:** 2
- **Expected Timeline of the Research Internship:**
  Short term: 3 months | Long term: 6 months
- **Nature of the project:** Laboratory Investigation
- **Website:** https://www.intorlab.com.vn/

Bio

PROJECT DESCRIPTION

This study applies AI-driven inverse design to optimize mechanical drone structures for improved stability, payload efficiency, energy use, and maneuverability. Unlike traditional forward design, which tests predefined structures, inverse design begins with performance objectives and uses computational algorithms to generate optimal configurations. By combining parametric modeling, multi-objective optimization, and physics-based simulations, the approach produces efficient, unconventional geometries with enhanced aerodynamics, reduced material use, and adaptability. This methodology shortens the design cycle and enables innovative drone architectures by prioritizing performance over conventional forms.

RESEARCH REQUIREMENTS

EXPERIENCES NEEDED	Materials Science, Electrical Engineering, Mechanical Engineering
EXPECTED ROLES OF THE INTERN/RA	Depends on the intern's abilities and expectations
EXPECTED OUTCOMES	• Understand the fundamental properties of organic semiconductors and semiconducting polymers in energy storage and electronics • Master the basic and necessary lab experimental skills such as thin-film fabrication, absorption, electronic characterization • Scientific writing and presentation skills • Data analysis skills

Fabrication and Characterization of Perovskite Light-Emitting Diodes (PeLEDs)

- **Project Lead:** Asst. Prof. Le Van Quynh
- **Project code:** VINUNI26
- **# of positions available:** 2
- **Expected Timeline of the Research Internship:**
  Short term: 3 months | Long term: 6 months
- **Nature of the project:** Materials Science, Optoelectronics, Nanotechnology, Energy Devices

Bio

PROJECT DESCRIPTION

This project focuses on the development of next-generation optoelectronic devices based on metal halide perovskites. Students will learn to fabricate thin-film perovskite light-emitting diodes and perform optical, electrical, and structural characterization. The ultimate goal is to improve device efficiency, stability, and scalability for display and lighting applications.

RESEARCH REQUIREMENTS

EXPERIENCES NEEDED	Background in Materials Science, Electrical Engineering, Chemistry, Physics, or Nanotechnology. Hands-on lab experience (thin-film deposition, device fabrication, or spectroscopy) preferred.
EXPECTED ROLES OF THE INTERN/RA	- Assist in perovskite thin-film preparation and device fabrication - Conduct optical/electrical testing and data analysis - Support materials characterization (XRD, SEM, PL, EL) - Maintain lab notebooks and safety procedures
EXPECTED OUTCOMES	- Working prototypes of PeLEDs - Improved understanding of perovskite material/device properties - Data for publication in peer-reviewed journals - Training in cleanroom/device fabrication techniques

Improved Performance of Perovskite Light-Emitting Diodes by Inverse Design Approach

- **Project Lead:** Asst. Prof. Le Van Quynh
- **Project code:** VINUNI27
- **# of positions available:** 2
- **Expected Timeline of the Research Internship:**
  Short term: 3 months | Long term: 6 months
- **Nature of the project:** Materials Science · Optoelectronics · Machine Learning · Inverse Design · Nanotechnology

Bio

PROJECT DESCRIPTION

This project aims to enhance the efficiency and stability of perovskite light-emitting diodes (PeLEDs) by employing an inverse design strategy that integrates physics-based simulations with machine learning optimization. Instead of traditional trial-and-error device fabrication, this approach uses computational modeling and AI-driven search to identify optimal material compositions, device architectures, and fabrication parameters. The methodology is expected to accelerate discovery and significantly boost PeLED performance for next-generation optoelectronic applications.

RESEARCH REQUIREMENTS

EXPERIENCES NEEDED	Background in Physics, Materials Science, Electrical Engineering, Computer Science, or related fields. Experience in numerical simulations, computational modeling (COMSOL, Lumerical, etc.), or machine learning (Python, TensorFlow/PyTorch) preferred.
EXPECTED ROLES OF THE INTERN/RA	- Support computational simulations of device structures - Develop and train ML models for inverse design - Collaborate with experimental team on device fabrication/validation - Perform data analysis, visualization, and documentation - Contribute to publications and reports
EXPECTED OUTCOMES	- Optimized PeLED device designs with improved efficiency and stability - Framework for AI-driven inverse design in optoelectronics - Experimental validation of predicted device structures - Publications in high-impact journals - Foundation for future AI-guided materials/device research

Improving NLP Applications in Low-resource Languages: One Country and One Use Case At A Time

- **Project Lead:** Asst. Prof. Khoa Dang Doan
- **Project code:** VINUNI28
- **# of positions available:** 2
- **Expected Timeline of the Research Internship:**
  Minimum 6 months commitment (can work remotely after the internship period)
- **Nature of the project:** LLM Evaluation and Cultural Understanding

Bio

PROJECT DESCRIPTION

Natural Language Processing (NLP) has achieved remarkable progress in high-resource languages such as English, Chinese, and French, with some applications approaching human-level performance. In contrast, research and industry applications in low-resource languages—including Vietnamese, Malaysian, and Indonesian languages—lag significantly behind. A central reason is the scarcity of high-quality resources, particularly benchmarks that capture dialectal variation, cultural context, and community-specific usages, which are essential for developing systems that reflect local ways of speaking and thinking. Recent advances in Large Language Models (LLMs) have further widened this gap: while they excel in high-resource settings, they often fail to understand local cultural knowledge or pragmatic nuances in low-resource languages. Addressing this imbalance requires (1) a systematic evaluation and mechanistic understanding of existing tools, and (2) approaches that not only improve transfer-learning techniques but also integrate cultural and linguistic diversity at the core of LLM training and evaluation, both of which are the core objectives of this project.

RESEARCH REQUIREMENTS

EXPERIENCES NEEDED	Background in NLP and Machine Learning, and/or Linguistic
EXPECTED ROLES OF THE INTERN/RA	• Create framework for LLM Evaluation • Develop mechanistic techniques to understand LLM Cultural Bias • Develop low-resource LLM Training approaches • Collaborate with various members in the lab, researchers in Vietnam, Malaysia, US, etc...
EXPECTED OUTCOMES	• Benchmark datasets • Published code and tools • Research manuscript

AI Case Study Lab: Capturing real-world AI journeys from Vietnam to the world

- **Project Lead:** Dr. Abhishek Nayak
- **Project code:** VINUNI29
- **# of positions available:** 2
- **Expected Timeline of the Research Internship:** 3 months or 6 months (can work remotely after the internship period), one meeting per week commitment.
- **Nature of the project:** AI, Data analytics, Business Optimization, Decision Making, Technology adoption

Bio

PROJECT DESCRIPTION

This research initiative aims to bridge academia, industry, and global knowledge platforms by documenting how Vietnamese and multinational companies operating in Vietnam are applying AI and data analytics in practice. Research Assistants (RAs) will collaborate with local firms, conduct interviews with leaders and practitioners, and analyze organizational challenges, implementation processes, and outcomes. The output will be world-class case studies suitable for publication in international platforms such as MIT Sloan, Ivey Publishing, Emerald, and Harvard Inspiring Minds.

In addition, RAs will gain global exposure through opportunities to co-author cases for world-class publishers; practical learning from first-hand insights into how businesses implement AI and data analytics; career advantages by building a unique profile that combines research, writing, and industry engagement; and valuable networking with executives, startups, and multinational companies in Vietnam.

RESEARCH REQUIREMENTS

EXPERIENCES NEEDED	- Strong English writing and communication skills - Research and interviewing ability - Familiarity with AI/data analytics concepts (not necessarily coding, but ability to understand applications) - Interest in cross-cultural and business research - Teamwork, curiosity, and analytical thinking
EXPECTED ROLES OF THE INTERN/RA	- Research & Analysis: Conduct secondary research on AI adoption in industries - Field Work: Assist in interviews and surveys with local and foreign companies - Case Writing: Help structure narratives, analyze findings, and draft case manuscripts - Collaboration: Work with faculty mentors and industry partners - Editing & Publishing: Prepare cases in required formats/styles for submission to publishers
EXPECTED OUTCOMES	- 3–5 high-quality case studies on AI and data analytics in Vietnam - A research database of interviews, insights, and local examples - Presentations and workshops with partner companies

JOIN VINUNIVERSITY FOR INTERNATIONAL EXPERIENCE EXPOSURE!

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