

# Hoang-Phuc Nguyen

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## RESEARCH EXPERIENCE

- **Software Engineering Laboratory – SELab HCMUS** Aug. 2024 – Present
- *Research Student – Supervised by Assoc. Prof Minh-Triet Tran on Computer Vision*
  - Study and participate in many projects focusing on Deep Learning and Computer Vision.
  - Collaborated with a multidisciplinary team to develop innovative solutions for real-world challenges.
  - Conducted experiments, analyzed results, and improved skills in AI model training and optimization.
  - Participated in lab seminars and presentations to share findings and learn from peers' research.
  - Member of Organizing Committee of the "Intelligent 3D Room Design" track of SHREC 2025.

## SELECTED PUBLICATIONS

- **Hoang-Phuc Nguyen**, Phuong-Linh Huynh-Ha, Minh-Triet Tran. **Generalizability Evaluation and Anchor-Guided Approach for Category-Agnostic Pose Estimation**. SOICT 2025, Springer CCIS.
- **Hoang-Phuc Nguyen**, Quoc-Trung Nguyen, Minh-Triet Tran. **Mouse Paw Inflammation Evaluation with Segment Anything and Lightness Classification**. SOICT 2024, Springer CCIS, 10.1007/978-981-96-4288-5\_36.
- Taher YACOUB, Nika Zarubina, Camille Depenveiller, **Hoang-Phuc Nguyen**, Vinh-Toan Vong, Minh-Triet Tran, Yuki Kagaya, Tsukasa Nakamura, Daisuke Kihara, Florent Langenfeld, Matthieu Montes. **SHREC 2024: Non-rigid complementary shapes retrieval in protein-protein interactions**. 3DOR 2024, The Eurographics Association, 10.2312/3dor.20241173.
- Duc-Nhuan Le, **Hoang-Phuc Nguyen**, Vinh-Toan Vong, Nguyen-Khoa Luong, Trong-Le Do. **HP×PKD: Progressive Training Pipeline with Knowledge Distillation for Lightweight Backbones in Pedestrian Detection**. MAPR 2024, IEEE, 10.1109/MAPR63514.2024.10660994.
- Duc-Nhuan Le, **Hoang-Phuc Nguyen**, Thanh-Duy Lam, Minh-Nhut Dang, and Minh-Hoang Le. **CESE: A Clip-based Event Search Engine for AI Challenge HCMC 2024**. SOICT 2024, Springer CCIS, 10.1007/978-981-96-4291-5\_21.

## EDUCATION

- **University of Science, VNU-HCM (HCMUS), Ho Chi Minh City, Vietnam** Sep. 2022 – Present
  - *Advanced Program in Computer Science; GPA: 9.56/10.0 – 3.97/4.00*
    - Honors: Dean's List of the academic year 2022-2023 (**Top 5 GPA**) and year 2023-2024 (**Top 5 GPA**), **Top 1** and **Top 2** GPA of class 22APCS academic year 2022-2023 and 2023-2024.
    - Review coursework: Linear Algebra, Statistics, Data Structures, Discrete Structures, Logical Structures, Calculus, Computer Systems, Database, Scientific Method, Technical Writing, OOP, General Physics, Computer Hardware, Mobile Application Development, Number Theory, Software Engineering, Information Retrieval, Natural Language Processing, Algorithms and Complexity, Artificial Intelligence, Machine Learning, Computer Security.
- **Le Quy Don High School for the Gifted, Quang Tri Province, Vietnam** Sep. 2019 - Jun. 2022
  - *Major in Information Technology*

## SELECTED PROJECTS

- **Vietnamese Food Recognizer** Aug. 2023 – Sep. 2023
  - *AI Application Developer*
    - Created Vietnamese Culinary Explorer, an Android app to promote Vietnamese cuisine, assist tourists in finding restaurants, recognizing dishes, and learning about their cultural significance, enhancing their travel experience.
    - Built a Restaurant Recommender using Java and XML. Integrated Google Maps API, food recognition with a MobileNet model, added ChatGPT for culinary insights, a digital stamps system, and utilized Realm databases.
- **Algorita – A tool for visualizing algorithms and data structures** Mar. 2023 – Aug. 2023
  - *Desktop Application Developer*

- Developed an interactive C++ visualization tool demonstrating key algorithms (DFS/BFS, Dijkstra, MST, Connected Components) and data structures.
- Implemented and visualized various structures, including arrays, linked lists, stacks, queues, hash tables, graphs, tries, heaps, BSTs, AVL trees, and 2-3-4 trees.

• **Overpass – A “cross the road” game**

Oct. 2023 – Jan. 2024

• *Game Developer*

- Developed a “Road Crossing” game in C/C++ with SFML using OOP, implementing player movement, collision detection, traffic lights, multi-level gameplay, and special motion effects.
- Built an OOP framework on SFML inspired by Android Java, integrating design patterns and features like save/load, weather effects, and dynamic vehicles/animals for scalable architecture.

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## SELECTED ACHIEVEMENTS AND AWARDS

- **Artificial Intelligence Olympiad for University students - Preliminary Round** 2025
  - Competed in a team of three to solve 2 artificial intelligence tasks in 6 hours using Python.
  - **Champion** across all regional sites (Southern, Central, and Northern).
- **International Collegiate Programming Contest (ICPC) – Regional** 2024, 2025
  - Competed in a team of three to solve 10–13 algorithmic problems in 5 hours using C++ & Python.
  - Ranked **30th (Third Prize)** in the 2024 ICPC Hanoi Regional & qualified for the 2025 ICPC HCMC Regional.
- **International Collegiate Programming Contest (ICPC) – National** 2022, 2023, 2024, 2025
  - Competed in a team of three to solve 10–13 algorithmic problems in 5 hours using C++ & Python.
  - Ranked **15th** in 2025, **25th (Co-Silver)** in 2024, **61th (Co-Bronze)** in 2023, **39th (Co-Silver)** in 2022.
- **National Olympiad in Informatics for High school students** 2021, 2022
  - Competed individually in 2 days to solve 3 algorithmic problems in 3 hours on each day.
  - Ranked **12th (Top 1 in Second Prize)** in 2022, **Third Prize** in 2021.
- **AI Challenges**
  - Achieved **top 2** overall performance at track Protein shapes docking – SHREC 2024.
  - Achieved **top 20** in the Final Round of Ho Chi Minh City AI Challenge 2024.

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## ACTIVITIES

- **Administrator of Le Quy Don Online Judge (LQDOJ)** Jun. 2022 – Jun. 2024
  - Designed programming exercises, solutions, and teaching materials to enhance problem-solving skills for middle and high school students.
  - Organized multiple competitive programming contests, including major multi-round events preparing students for the National Olympiad in Informatics.
- **Mentor of National Olympiad in Informatics Team** Jun. 2022 – Present
  - Trained the National Olympiad in Informatics team (10–20 students) at Le Quy Don High School, Vietnam, delivering lectures and preparing algorithms for competitive programming.
  - Organized contests and fostered collaborative problem-solving, gaining expertise in coaching, curriculum planning, and team development.

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## SKILLS

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|------------------------|---|
| Technical Skills:      | Scientific Research, Problem Solving, Machine Learning, Computer Vision   |
| Programming Languages: | C/C++, Python, Java, SQL, C#, HTML, JavaScript, CSS, LaTeX, Markdown  |
| Frameworks/Tools:      | Pytorch, MMDetection, Flutter, Django, Flask, Android SDK, Git/GitHub, Docker, Microsoft SQL Server, Celery, Redis, Elasticsearch |
| Languages:             | English (fluent), Vietnamese (native speaker)   |