

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.

SELECTED PUBLICATIONS

- 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.
- **Hoang-Phuc Nguyen**, Quoc-Trung Nguyen, Minh-Triet Tran. **Mouse Paw Inflammation Evaluation with Segment Anything and Lightness Classification**. SOICT 2024, Springer CCIS.

SELECTED PROJECTS

- **Vietnamese Food Recognizer** Aug. 2023 – Sep. 2023
Mobile 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.
- **Algoritma – A tool for visualizing algorithms and data structures** Mar. 2023 – Aug. 2023
Desktop Application Developer
 - Developed an interactive visualization tool in C++ to demonstrate the functionality of various algorithms and data structures, enhancing understanding for students and professionals.
 - Implemented and visualized DFS/BFS, Dijkstra, Minimum Spanning Tree, and Connected Components.
 - Designed and integrated data structures such as Static/Dynamic Arrays, Singly/Doubly/Circular Linked Lists, Stacks, Queues, Hash Tables, Graph, Tries, Binary Search Trees, Min/Max Heaps, AVL Trees, and 2-3-4 Trees.
 - Gained expertise in algorithm analysis and data structure implementation, fostering a strong foundation for solving complex computational problems.
- **Overpass – A “cross the road” game** Oct. 2023 – Jan. 2024
Game Developer
 - Developed a “Road Crossing” game in C/C++ with SFML Framework using Object-Oriented Programming (OOP), focusing on player movement, collision detection, traffic lights, and multi-level gameplay.
 - Built a simple OOP framework on top of SFML, inspired by the Android Java framework, integrating various design patterns to ensure efficient and scalable software architecture.
 - Applied special motion effects, implemented save/load functionality, and additional features like weather effects and varying vehicles/animals to enhance gameplay.

SELECTED ACHIEVEMENTS AND AWARDS

- **International Collegiate Programming Contest (ICPC) – Regional** 2024
 - 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.
- **International Collegiate Programming Contest (ICPC) – National** 2022, 2023, 2024
 - Competed in a team of three to solve 10–13 algorithmic problems in 5 hours using C++ & Python.
 - Ranked **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.
 - Honorable Mention in the Final Round of Ho Chi Minh City AI Challenge 2024.

EDUCATION

- **University of Science, VNU-HCM (HCMUS), Ho Chi Minh City, Vietnam** Sep. 2022 – Present
 - Advanced Program in Computer Science; GPA: 9.57/10.0 – 3.99/4.00*
 - Honors: Dean’s List of the academic year 2022-2023 (**Top 1 GPA**).
 - 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.
- **Le Quy Don High School for the Gifted, Quang Tri Province, Vietnam** Sep. 2019 - Jun. 2022
 - Major in Information Technology*

ACTIVITIES

- **Le Quy Don Online Judge (LQDOJ)** Jun. 2022 – Jun. 2024
 - Administrator*
 - Designed and authored programming exercises and solutions to enhance problem-solving skills.
 - Organized competitive programming contests and teaching sessions for middle and high school students.
 - Served as an organizer for two major competitions, each comprising nearly 10 contest rounds, to prepare high school students for the National Olympiad in Informatics.
 - Developed expertise in curriculum design, event coordination, and teaching programming to diverse age groups.
- **National Olympiad in Informatics Team – Quang Tri Province, Vietnam** Jun. 2022 – Present
 - Mentor*
 - Participated in training the National Olympiad in Informatics team (10–20 students) at Le Quy Don High School for the Gifted, Quang Tri Province, Vietnam.
 - Prepared lectures and algorithms for competitive programming, taught the national team, and organized contests to foster problem-solving in a collaborative environment.
 - Improved expertise in competitive programming coaching, curriculum planning, and team development.

SKILLS

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