

# Huu-Nghia H. Nguyen

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## EDUCATION

### University of Science, VNU-HCM, HCMC, Vietnam

Sep. 2017 - Nov. 2021 (Expected)

- Bachelor of Science in Computer Science, **Advanced Program in Computer Science**
- **GPA: 3.96/4.0** (Top 5 out of 92 students)
- Coursework: Coursework: Data Structures, Calculus, Linear Algebra, Applied Statistics, Discrete Structures, Logical Structures, Scientific Research Methods, Technical Writing, Mobile Application Development, Database Systems, Artificial Intelligence, Computational Structures, Natural Language Processing, Information Retrieval, Operating Systems, Computer Graphics, Algorithm Analysis and Design.

## EXPERIENCE

### LSIR, École Polytechnique Fédérale de Lausanne (EPFL)

Lausanne, Switzerland

#### Summer Research Intern

May 2020 - Present

- Working on a Subtree-Reuse-based SQL Query Optimizer using Graph Neural Network and Box Embeddings.
- Performed experiments on the Attribute Discovery dataset to verify the plausibility of a new Multimodal Feature Fusion method using Graph Neural Network, achieving a **test accuracy** of **96.86%** on this dataset.

### Faculty of Information Technology, University of Science, VNU-HCM

HCMC, Vietnam

#### Research Assistant

Sep. 2019 - Present

- Finding the correlation between forking patterns and software health and risks in software repositories.
- Performing inference in the Software Heritage Dataset to extract forking patterns between 50,000 repositories using PostgreSQL and Neo4J.

### Big-O Coding

HCMC, Vietnam

#### Teaching Assistant, Problem Setter, Front-end Web Developer

Jul. 2018 - Present

- Explaining Algorithms and Data Structures concepts to students at Big-O Coding on a weekly basis and preparing more than 20 programming problems.
- Built version 1 of the Front-end Web Application for Big-O Coding's website: <http://bigocoder.com> to host programming problems and programming contests for up to 1,900 users using React JS.
- Reduced page traversing paths for administrators by 50% by implementing a shortcut to problems.

### Pathfinder Vietnam

HCMC, Vietnam

#### Founder, Product Team Leader, Front-end Web Developer

Sep. 2018 - May 2020

- Led product team of 6 in implementing the Minimum Viable Product using React JS and NodeJS.
- Introduced the product's core feature by implementing the programming testing system.

## PUBLICATIONS

### [Towards a Robust WiFi-based Fall Detection with Adversarial Data Augmentation](#) - TDH Nguyen, **HNH Nguyen**

- Implemented the LSTM module for a Zero-shot Learning Fall Detection system that achieves an **accuracy** of **66.03%** on an **out-of-domain test set**. Accepted for presentation at the 54th Annual Conference on Information Sciences and Systems 2020. Princeton, New Jersey, USA.

### [Recognizing Families through Images with Pretrained Encoders](#) - TDH Nguyen, **HNH Nguyen**, H Dao

- Implemented the **Siamese FaceNet Inception-ResNet-v1** model for verifying kinship relationship in a pair of images (**ranked 9/21**) and kinship image retrieval (**ranked 5/9**). Accepted at the 2020 Recognizing Families In the Wild competition, the 15th IEEE International Conference on Automatic Face and Gesture Recognition. Buenos

Aires, Argentina.

## RESEARCH

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**BERT-FinIR: Financial Non-factoid Question Answering with BERT** - TDH Nguyen, **HNH Nguyen**, TT Nguyen

- Designed the architecture and implement the Question Retriever using BM25 for a Financial Non-factoid Question Answering system with BERT as the feature extractor, reaching state-of-the-art score on the FiQA dataset with a **MAP score of 0.888**.

## ACHIEVEMENTS

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| <b>4<sup>th</sup> prize in Vietnam National Olympiad for Undergraduates in Informatics</b>                     | 2019 |
| <b>2<sup>nd</sup> place in University of Science VNU-HCM Olympiad in Informatics</b>                           | 2019 |
| <b>ICPC Vietnam National Round Qualifier</b>   | 2019 |
| <b>Participant of Vietnam Summer School of Science (VSSS) '07</b>  | 2019 |
| <ul style="list-style-type: none"><li>Among 161 participants chosen from 1760 applicants nationwide.</li></ul> |      |
| <b>3<sup>rd</sup> prize in VSSS Science Hackathon</b>  | 2019 |
| <ul style="list-style-type: none"><li>Created metrics for our mini-research about love for science.</li></ul>  |      |
| <b>4<sup>th</sup> prize in Creative Idea Contest (CIC)</b>   | 2019 |
| <ul style="list-style-type: none"><li>Top 6 out of 200 teams.</li></ul>  |      |
| <b>Top 6 in Generation Unlimited Youth Challenge by UNICEF and Saigon Innovation Hub</b>                       | 2018 |
| <ul style="list-style-type: none"><li>Top 6 (equal standings) out of 100 applicants.</li></ul>                 |      |
| <b>Advanced Program in Computer Science Scholarship</b>  | 2018 |
| <ul style="list-style-type: none"><li>Top 3 out of 92 students.</li></ul>                                      |      |
| <b>Silver medalist in Ho Chi Minh City English Competition for Specialized Students</b>                        | 2017 |
| <b>Gold medalist in Physics in the Southern Vietnamese Regional Olympiad</b>                                   | 2016 |

## PROJECTS

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**What The Food app**

- Implemented a Convolution Neural Network to identify 101 types of food using **TensorFlow**.
- Converted the Keras model to a **TensorFlow Lite** model and deployed the model on an Android application using **Firebase ML Kit**.

## SKILLS

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- Languages: **C++** (3 years), **Python** (2 years), Javascript, Java, HTML, CSS, SQL.
- Frameworks and Tools: Tensorflow, PyTorch, ReactJS, Redux, Android SDK, Linux, PostgreSQL, Neo4J, Git.

## EXTRACURRICULAR ACTIVITIES

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**Developer Student Club at Ho Chi Minh University of Science - Google Developers**

- Organized a seminar to introduce students to the basics of Version Control Systems.

## CERTIFICATES

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- IELTS 7.0 (certified in 2019)