VIETNAM NATIONAL UNIVERSITY, HANOI
VNU UNIVERSITY OF ENGINEERING AND TECHNOLOGY

SOCIALIST REPUBLIC OF VIETNAM
Independence – Freedom – Happiness

INFORMATION ON DOCTORAL THESIS

1. Full name: Pham Thanh Tung 2. Sex: Male

3. Date of birth: 01/10/1982 4. Place of birth: Hoa Binh

5. Admission decision number: 1006/QĐ-CTSVDated 07/12/2015

6. Changes in academic process:

Changing thesis title (20/3/2017)
- Old title: Studying of estimation forest fire in Vietnam using multi-source data.
- New title: Improving efficiency of video coding for multimediaapplications.

Changing thesis title (17/02/2023)

- Old title: Improving efficiency of video coding for multimediaapplications.
- New title: Perceptual image quality assessment for video coding enhancement.

7. Official thesis title: Perceptual image quality assessment for video coding enhancement

8. Major: Computer Science 9. Code: 9480101.01

10. Supervisors: Assoc. Prof. Dr. Le Thanh Ha, Dr. Dinh Trieu Duong

11. Summary of the **new findings** of the thesis:
- The thesis has developed twosubjective image/ video patches with compression artifactsdatabases.
- The thesis has developed the experimental image quality assessment method for image/ video patches with compression artifacts.
- The thesis contributes to studying and applying image quality assessment method in video encoder.

12. Practical applicability, if any: the research results of theimage quality assessment method can be applied in video encoder for multimediaapplications.

13. Further research directions, if any:
- Continue to develop subjective Image Databases with more types of artifacts.
- Continue to studying and applying image quality assessment method in Rate-Distortion Optimization of video coding.

14. Thesis-related publications:

[1] T. T. Pham, X. V. Hoang, N. T. Nguyen, D. T. Dinh and L. T. Ha, "End-to-End Image Patch Quality Assessment for Image/Video With Compression Artifacts," in *IEEE Access*, vol. 8, 2020, doi: 10.1109/ACCESS.2020.3040416 (ISI Web of Science, Q1).

[2] T. P. Thanh, C. Ma Thi, T. N. Manh, L. Le Dinh and H. Le Thanh, "Compression Artifacts Image Patch database for Perceptual Quality Assessment," *2020 12th International Conference on Knowledge and Systems Engineering (KSE)*, 2020, pp. 55-60, doi: 10.1109/KSE50997.2020.9287704.

[3] Pham, Thanh Tung and Dinh, Trieu Duong and Hoang, Van Xiem and Vu Huu, Tien and Le, Thanh Ha (2019), Distortion Model based on Perceptual of Local Image Content. In: *http://www.icce-asia2019.org/*, Bangkok, Thailand.

[4] Pham Thanh Tung, Dinh Trieu Duong, Dang Van Trong and Le Thanh Ha, *Adaptive QuantizationParameter method for H265/HEVC Encoder using Deep Convolutional Perceptual Features*, *The 24th National Conference on Electronics, Communications and Information Technology (REV-ECIT 2021)*.

[5] M. Le Dinh, L. V. Tung, X. H. Van, D. Dinh Trieu, T. P. Thanh and H. Le Thanh, "Improving 3D-TV view synthesis using motion compensated temporal interpolation," *2016 International Conference on Advanced Technologies for Communications (ATC)*, 2016, pp. 312-317, doi: 10.1109/ATC.2016.7764796.

[6] Nguyen Dinh Nam, Le Thanh Ha, Pham Thanh Tung, Vu Huu Tien, Hoang Van Xiem, Dinh Trieu Duong, “Compression Video Methodusing Perceptual Features”, *patent*, No: VN 1-2018-00173.

[7] Pham Thanh Tung, Vu Huu Tien, Dinh Trieu Duong, Le Thanh Ha, “Adaptive Quantization Parameter Selection by the local content of video frame”,*Journal ofScience and Technology on Information and Communications,* vol.4, 2022.