INFORMATION ON DOCTORAL THESIS

1. Full name : Nguyen Thanh Trung 2. Sex: Male

3. Date of birth: 01/01/1981 4. Place of birth: Thai Binh

5. Admission decision number: 985 /QĐ-CTSV Dated 04/12/2014

6. Changes in academic process: Update one Supervisor Dr. Trinh Dinh Hoan- From September 19, 2017.

7. Official thesis title: **:** Research and Development Methods for Denoising Low-dose CT Images

8. Major: Electronics Engineering 9. Code: 9510302.01

10. Supervisors:

   1. Assoc. Prof. Nguyen Linh Trung, VNU University of Engineering and Technology.

   2. Dr. Trinh Dinh Hoan, Viettel Group; Advanced Institute of Engineering and Technology, VNU University of Engineering and Technology.

11. Summary of the **new findings** of the thesis:

   1) Proposed an efficient algorithm for low-dose CT image denoising, by combining the classical Gaussian filter based and patch-based denoising methods.

   2) Proposed an efficient algorithm for low-dose CT image denoising, by adapting existing CNN-based methods for denoising natural and SAR images to CT images in which receptive fields are extended.

   12. Practical applicability, if any: Can be applied in enhancing the quality of CT images for diagnosis.

13. Further research directions, if any: Research and develop CNN models for LDCT image denoising that integrates the knowledge of anatomy and pathology of medical experts .

14. Thesis-related publications:

   1. **Thanh-Trung Nguyen**, Dinh-Hoan Trinh, and Nguyen Linh Trung (2016). "An Efficient Example-based Method for CT Image Denoising Based on Frequency Decomposition and Sparse Representation" International Conference on Advanced Technologies for Communications (ATC), pp. 293-296.

2. **Nguyen Thanh-Trung**, Dinh-Hoan Trinh, Nguyen Linh-Trung and Ha LuuManh (2019), "Robust Denoising of Low-Dose CT Images Using Convolutional Neural Networks", NAFOSTED Conference on Information and Computer Science (NICS), pp. 506-511.

3. **Nguyen Thanh-Trung**, Dinh-Hoan Trinh, Nguyen Linh-Trung and Marire Luong (2019), "Low-dose CT Image Denoising using Image Decomposition and Sparse Representation", REV Journal on Electronics and Communications, vol. 9, no. 3-4, pp. 78-88.

4. **Nguyen Thanh-Trung**, Dinh-Hoan Trinh, Nguyen Linh Trung, Tran Thi Thuy Quynh, Manh-Ha Luu (2020), "Dilated Residual Convolutional Neural Networks for Low-Dose CT Image Denoising", 2020 IEEE Asia Pacific Conference on Circuits and Systems (APCCAS), pp. 189-192.

5. **Nguyen Thanh Trung,** Dinh-Hoan Trinh, Nguyen Linh-Trung and Marie Luong (2022), "Low-dose CT Image Denoising using Deep Convolutional Neural Networks with Extended Receptive Fields", Journal of Signal, Image and Video Processing, vol. 16, no. 7, pp. 1963-1971.