VIETNAM NATIONAL UNIVERSITY, HANOI
VNU UNIVERSITY OF ENGINEERING AND TECHNOLOGY

SOCIALIST REPUBLIC OF VIETNAM
Independence – Freedom – Happiness

INFORMATION ON DOCTORAL THESIS

1. Full name : Nguyen Thu Trang ..... 2. Sex: Female .....

3. Date of birth: 21/08/1994..... 4. Place of birth: Hanoi.....

5. Admission decision number: 1200/QĐ-CTSV Dated: 29/12/2020 .....

6. Changes in academic process: Change the roles of the superviors in 930/QĐ-ĐHCN at 15/09/2023

7. Official thesis title: Automated localization and repair for variability faults in software product lines

8. Major: Software Engineering ..... 9. Code: 9480103.01 .....

10. Supervisors: Dr. Vo Dinh Hieu and Assoc.Prof.Dr. Ho Si Dam.....

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

- An approach for detecting false-passing products of buggy software product lines
- An approach for localizing variability faults in software product lines
- Approaches for automatically repairing variability faults in software product lines

12. Practical applicability, if any: The proposed approaches can be applied to the debugging process of the software development. .....

13. Further research directions, if any:

- Collecting real-world variability bugs in larger software product lines to more thoroughly evaluate the techniques
- Extending the experiments with more automated program repair tools
- Handling the flaky test problem to improve the quality of the test suites

14. Thesis-related publications: .....

- **Nguyen, Thu-Trang**, Kien-Tuan Ngo, Son Nguyen, and Hieu Dinh Vo. "A variability fault localization approach for software product lines." *IEEE*

Transactions on Software Engineering 48, no. 10 (2021): ISSN 0098-5589, DOI: https://doi.org/10.1109/TSE.2021.3113859, ISI/Q1

- **Nguyen, Thu-Trang**, and Hieu Dinh Vo. "Detecting Coincidental Correctness and Mitigating Its Impacts on Localizing Variability Faults." In 2022 14th *International Conference on Knowledge and Systems Engineering* (KSE), pp. 1-6. IEEE, 2022
- **Nguyen, Thu-Trang**, Kien-Tuan Ngo, Son Nguyen, and Hieu Dinh Vo. "Detecting false-passing products and mitigating their impact on variability fault localization in software product lines." *Information and Software Technology* 153 (2023): ISSN 0950-5849, volume 153, DOI: https://doi.org/10.1016/j.infsof.2022.107080, ISI/Q1
- **Nguyen, Thu-Trang**, Xiao-Yi Zhang, Paolo Arcaini, Fuyuki Ishikawa, and Hieu Dinh Vo. "Automated Program Repair for Variability Bugs in Software Product Line Systems." *Journal of Systems and Software*. ISI/Q1 (accepted).

Supervior	**PhD Student**
Date: ……..	Date: ……..
Signature: ……	Signature: ……
Full name: Vo Dinh Hieu	Full name: Nguyen Thu Trang