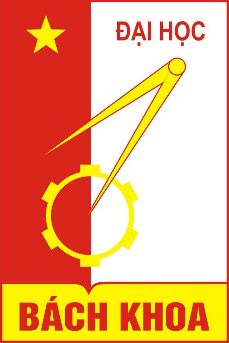
HANOI UNIVERSITY OF SCIENCE AND TECHNOLOGY

SCHOOL OF MECHANICAL ENGINEERING

DEPARTMENT OF MECHATRONICS ENGEERING

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UNDERGRADUATE THESIS

**ADVANCED PROGRAM**

MAJOR IN MECHATRONICS

**INTELLIGENT AUTONOMOUS ROBOT USING SLAM, RRT\*, FUZZY-PID TECHNIQUES**

Student: **Luong Duc Nhat**

Class: AP Mechatronics – K59 Advisor: **Dr. Mac Thi Thoa**

Reviewer:

HA NOI 05-2019

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**GRADUATION THESIS DEFINITION**

*(MECHATRONICS ENGINEERING)*

**1. Student’s information**

Name: Luong Duc Nhat Student ID: 20143312

Mobile phone: +84 367 33 88 69 Email: nhat.ld143312@sis.hust.edu.vn

Class: AP – Mechatronics K59 Form of training: Full time

Graduation thesis is completed at Hanoi University of Science and Technology

Thesis completion time interval: From 01/01/2019 to 20/05/2019

**2. Thesis topic**

**“INTELLIGENT AUTONOMOUS ROBOT USING SLAM, RRT\*, FUZZY-PID TECHNIQUES”**

**3. Requirements:**

* Researching and designing a model of Mobile Robot.
* Using 3D camera and LIDAR to build a 3D map of the environment.
* Finding a feasible and optimal path for Mobile Robot.
* Detecting and avoiding obstacle.

**4. Thesis content and calculations:**

* Designing and build the mobile robot.
* Simulating the system on Robot Operation System and operating in real world.

**5. List of technical drawings**

* Robot’s mechanical drawing: 1 A0 Paper

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|  | *Ha Noi, May 2019*  *Advisor* |

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**THESIS EVALUATION**

Student’s name: Luong Duc Nhat

Course: K59 Class: AP – Mechatronics K59 Major: Mechatronics Engineering

Thesis topic: INTELLIGENT AUTONOMOUS ROBOT USING SLAM, RRT\*, FUZZY-PID TECHNIQUES

1. **Amount of work:**
2. Thesis report: 110 Pages
3. Technical drawing: 1 A0 Pages
4. **Merit of the thesis**

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1. **Demerit of the thesis**

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1. **Conclusion**

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*Ha Noi, May 2019*

*Advisor*

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**THESIS EVALUATION**

Student’s name: Luong Duc Nhat

Course: K59 Class: AP – Mechatronics K59 Major: Mechatronics Engineering

Thesis topic: INTELLIGENT AUTONOMOUS ROBOT USING SLAM, RRT\*, FUZZY-PID TECHNIQUES

1. **Amount of work:**
2. Thesis report: 110 Pages
3. Technical drawing: 1 A0 Pages
4. **Merit of the thesis**

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1. **Demerit of the thesis**

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1. **Conclusion**

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*Ha Noi, May 2019*

*Reviewer*