

HANOI UNIVERSITY OF SCIENCE AND TECHNOLOGY

School of Information and Communications Technology

## Group Project Summary

# **Surface Crack Classification**

Subject: Computer Vision

Group 5:

Pham Van Khoa - 20176796

Tran Hai Son - 20176861

Tran Le Hoang - 201767

Vu Hai Dang - 20176711

Hoang Tuan Anh Van - 20170224

*Hanoi, January 2021*

## Abstract

Concrete surface cracks are major defect in civil structures. Building Inspection which is done for the evaluation of rigidity and tensile strength of the building. Crack detection plays a key role in the building inspection, finding the cracks and determining the building health.

## The Dataset

The dataset contains images of various concrete surfaces with and without crack. The image data are divided into two as negative (without crack) and positive (with crack) in separate folder for image classification. Each class has 20000 images with a total of 40000 images with 227 x 227 pixels with RGB channels. The dataset is generated from 458 high-resolution images (4032x3024 pixel) with the method proposed by Zhang et al (2016). High resolution images found out to have high variance in terms of surface finish and illumination condition. No data augmentation in terms of random rotation or flipping or tilting is applied.