VISVESVARAYA TECHNOLOGICAL UNIVERSITY
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PROJECT REPORT

On

"HISTOPATHOLOGICAL IMAGE CLASSIFICATION OF BREAST CANCER USING KERVOLUTIONAL NEURAL NETWORKS"

Submitted by

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In partial fulfillment of the requirements for the degree of

BACHELOR OF ENGINEERING

In

INFORMATION SCIENCE AND ENGINEERING

Under the Guidance of

Mr. Jayantkumar A Rathod

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DEPARTMENT OF INFORMATION SCIENCE AND ENGINEERING

ALVAS INSTITUTE OF ENGINEERING AND TECHNOLOGY

Moodbidri-574225, Karnataka

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CERTIFICATE

Certified that the project work entitled "HISTOPATHOLOGICAL IMAGE CLASSIFICATION OF BREAST CANCER USING KERVOLUTIONAL NEURAL NETWORKS" *is a bonafide work carried out by*

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in partial fulfilment for the award of BACHELOR OF ENGINEERING in **INFORMATION SCIENCE AND ENGINEERING** of the **VISVESVARAYA TECHNOLOGICAL UNIVERSITY, BELGAUM** during the year 2019–2020. It is certified that all corrections/suggestions indicated for Internal Assessment have been incorporated in the report deposited in the departmental library. The project report has been approved as it satisfies the academic requirements in respect of project work prescribed for the Bachelor of Engineering Degree.

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ABSTRACT

Histopathological Image Classification is a standard for diagnosing cancer. The classification helps in determining the best treatment among various treatment methods available. Breast Cancer classification are primarily constructed on histopathological photographs of the tissue in the tumor. In this project, we classify the histopathological images belonging to two major categories of tumor Benign and Malignant using KNN (Kervolutional Neural Network — Kernel Convolution Neural Network). Existing works using CNN mainly leverages activation layers as it only provides point-wise non-linearity, so we use KNN over CNN which provides indefinite complex actions of the human recognition system by making use of the kernel trick. It is a generalized version of convolution which can enhance the model's extent and can capture higher order of traits using reinforcement kernel functions short of any added parameters.