

# Skin Cancer Detection

Mentor: Dr. Rahul Upadhyay, Dr. Vinay Kumar

Team members:

- Tanmay Garg, 101915001, [tgarg3\\_be19@thapar.edu](mailto:tgarg3_be19@thapar.edu)
- Avneet Singh Maingi, 101915005, [amaingi\\_be19@thapar.edu](mailto:amaingi_be19@thapar.edu)
- Aditya Chawla, 101915018, [achawla1\\_be19@thapar.edu](mailto:achawla1_be19@thapar.edu)
- Aakarshan Gupta, 101915050, [agupta30\\_be19@thapar.edu](mailto:agupta30_be19@thapar.edu)
- Akshit Gupta, 101915051, [agupta31\\_be19@thapar.edu](mailto:agupta31_be19@thapar.edu)

## Abstract

This project aims at building by detecting cancer at earlier stages. The survival rate for early detection of skin cancer is almost 98 percent, but it falls to 62 percent when the cancer reaches the lymph node, and 18 percent when it metastasizes to distant organs. Skin cancer develops primarily on areas of sun-exposed skin, including the scalp, face, lips, ears, neck, chest, arms and hands, and on the legs in women.

The building block of this detector is deep learning which is used to process an image, then recognize it and show the output accordingly. The hardware implementation is done using Single Board Computer, Intel® Movidius™ Neural Compute Stick, SD card, Camera, USB cables etc. The picture will be received by the camera, and processing will be done inside the Raspberry Pi & the Intel® Movidius™ Neural Compute Stick will do the heavy lifting and the output will be displayed on the monitor. The goal is to build a machine learning algorithm that can detect cancer images and pair it with mentioned hardware.

Some of the Undergraduate Courses that are used in this project include:

- UEC513 : Embedded Systems
- UEC620 : Deep Learning for Computer Vision
- UEC713 : Machine Learning
- UEC610 : Computer Architecture

IEEE standard used in this project are :

- [IEEE 29148](#) is software requirements specification is a software system to be developed.
- [IEEE 1012](#) is a standard for software project management, software testing, and software engineering, verification and validation.
- [IEEE 16326](#) is standard for Software project management which is an art and science of planning and leading software projects.
- [IEEE 24748](#) is standard for Software documentation which is written text or illustration that accompanies computer software or is embedded in the source code.