GOVERNMENT ENGINEERING COLLEGE, TALAKAL-583238

DEPARTMENT OF COMPUTER SCIENCE & ENGINEERING

CERTIFICATE

This is to certify that the project work entitled "**KIDNEY STONE DETECTION BY IMAGE PROCESSING**" is carried out by

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in partial fulfilment of the requirements for the course mini project of 5th semester, B.E in Computer Science and Engineering of the Visvesvaraya Technology University Belagavi, during the academic year 2024-2025. It is certified that all corrections and suggestions indicated for internal assessment have been incorporated in the report. The project report has been approved has it satisfies the academic requirements in the respect work prescribed for the said degree.

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ABSTRACT

A kidney stone (renal calculi) disease is a common disorder worldwide with an obvious increase in incidence over the past 20 years. Every year, millions of people visit health care providers and emergency rooms for kidney stone-related complications. The causes for the kidney stone includes food habits, family history of kidney stones, metabolic disorder, high level of calcium and uric acid metabolism. The main reason for kidney stone is the formation of physiochemical substances in the urinary system. The highly concentrated urine with salts is the main cause of the stone. The crystals can either excreted or grow into stone due to the stone-promoting or stone inhibiting agents. Kidney stones are caused by various organic and inorganic substances such as calcareous, uric acid, cysteine, struvite and ammonium acid combined with proteins. Sometimes the metabolic changes, hyperparathyroidism, distal renal tubular acidosis, malabsorptive syndrome, obesity and diabetes severity can also cause the kidney stone formation. Kidney stones are deposits of solid crystals, minerals, and acid salts that stick together in the urine. They are often called as renal calculi. Current estimation is that there are half a million people suffering by this disease every year. They can block the flow of urine and cause infection, kidney damage or even failure. During surgical processes, it is vital to recognize the accurate and precise location of kidney stone.

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