



KARNATAKA STATE COUNCIL FOR SCIENCE AND TECHNOLOGY

Indian Institute of Science campus, Bengaluru

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Website: www.kscst.iisc.ernet.in/spp.html or www.kscst.org.in/spp.html



FORMAT FOR STUDENT PROJECT PROPOSAL FOR THE 45th SERIES OF STUDENT PROJECT PROGRAMME

(Handwritten proposals will not be accepted, please fill all the details in this MS word file, insert images / diagrams wherever necessary. Convert to pdf file, get it approved from the project guide / head of the department and principal of your institution. Keep ready the scanned pdf file of 1) Declaration and Endorsement 2) details of processing fees made and fill-up the Google Form. Send the softcopy of the project proposal including the three scanned pages and send the proposal (All information in one pdf file) by email to spp@kscst.org.in

<https://forms.gle/9wriMyaKhBaGaWpw7>

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| 1. | Name of the College: B.L.D.E.A's V.P. Dr. P.G. HALAKATTI COLLEGE OF ENGINEERING AND TECHNOLOGY, VIJAYAPUR. |
| 2. | Project Title: CYPHER CAM |
| 3. | Branch: INFORMATION SCIENCE AND ENGINEERING |
| 4. | Theme (as per KSCST poster): (The project proposals shall mandatorily be from one of the broad themes / areas. Visit website www.kscst.org.in/spp.html) Robotics |
| 5. | Name(s) of project guide(s): 1. Name: Prof: Pradeep Deshpande Email id: ise.pradeep@bldeacet.ac.in Contact No.: 9738350635 |
| 6. | Name of Team Members (Strictly not more than four students in a batch): (Type names in Capital Letters as provided in your college) (Please paste the latest passport size photograph adjacent respective names) Name: D RAHUL SINGH USN No.: 2BL18IS013 Email id: drahulsingh124@gmail.com Mobile No: 7989092319 Name: PARVAT MUKARTIHAL USN No.: 2BL18IS026 Email id: parvatssm@gmail.com Mobile No.: 6361781578 |



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| | <p>Name: RAHUL AMBIGER USN No.: 2BL18IS033 Email id: rahulambiger728@gmail.com Mobile No.: 6362411631</p> <p>Name: SHRADDHANAND BABANAGARE USN No.: 2BL18IS035 Email id: shraddhanandbabanagare@gmail.com Mobile No.: 6363037803</p> |   |
| 7. | <p>Team Leader of the Project: Name: D RAHUL SINGH USN No.: 2BL18IS013 Email id: drahulsingh124@gmail.com Mobile No.: 7989092319</p> | |
| 8. | <p>Processing Fee Details (Through Online Payment only): (processing fee of Rs. 1000/-) Please furnish the payment made details provided in the last page of this proposal.</p> | |
| 9. | <p>Date of commencement of the Project: 20-11-2021</p> | |
| 10. | <p>Probable date of completion of the project: 24-05-2022</p> | |
| 11. | <p>Scope / Objectives of the project: The main objective of the project is to enhance cctv monitoring system which is lacking now a days. This project is fast, reliable, accurate in terms of working proficiency. This project helps to irradiate problems of old systems by adding multiple features like Face detection, Motion detection, Visitors in the room, Anti-theft alarming system etc, it uses image processing which will increase the efficiency of the system, which makes this a stand-alone project.</p> | |
| 12. | <p>Methodology: Cypher Cam Works on any operating system which uses camera as hardware with other functionalities like LBPH, Haar-based algorithms, Real-time Object detection and tracking using OpenCV and Motion Detection application using Frame Difference method that makes us to implement all the features.</p> | |

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| | <pre> graph TD CYPHER_CAM[CYPHER CAM] --> FACE_DETECTION[FACE DETECTION] CYPHER_CAM --> VIDEO_SURVEILLANCE[VIDEO SURVEILLANCE] CYPHER_CAM --> MOTION_DETECTION[MOTION DETECTION] FACE_DETECTION --> Read_Image[Read Image] Read_Image --> Image_Normalization[Image Normalization] Image_Normalization --> Create_Window[Create window 24*24 pixels] Create_Window --> Apply_Haar[Apply HAAR like feature type (A-B-C-D-E)] Apply_Haar --> Apply_AdaBoost[Apply Ada-Boost algo. for feature extraction] Apply_AdaBoost --> Classifier_XML[Face detector classifier.XML Eyes detector classifier.XML Eyes with classes detector classifier.XML] VIDEO_SURVEILLANCE --> Frames[Frames] Frames --> Background_Subtraction[Background Subtraction] Background_Subtraction --> Accumulation{Accumulation 10 frames} Accumulation -- NO --> Frames Accumulation -- YES --> Double_Filter[Double Background filter and enhancement] Double_Filter --> Motion_Detection[Motion Detection] Motion_Detection --> Alarm{Alarm} Alarm -- YES --> Make_Alarm[Make Alarm] Alarm -- NO --> Frames MOTION_DETECTION --> Live_Streaming[Live Video Streaming] Live_Streaming --> Capture_Frame[Capture the current frame] Capture_Frame --> Compare_Frame{Compare current frame with previous frame} Compare_Frame --> Change_Frame{If any change in the frame} Change_Frame -- YES --> Motion_Detected[Motion detected] Change_Frame -- NO --> No_Motion_Detected[No motion detected] </pre> |
| 13. | <p>Expected Outcome of the project:</p> <p>Cypher Cam that has various applications like:</p> <ul style="list-style-type: none"> • Crime prevention. • Vehicle traffic control management. • Attendance system. • Can be used in robotics applications to detect objects • Used in banks, warehouses, shopping malls and retail stores. |
| 14. | <p>Is the project proposed relevant to the Industry / Society or Institution?</p> <p>Yes / No: Yes</p> <p>If Yes, please provide details of the Industry / institution and contact details:</p> <ul style="list-style-type: none"> • This can be used in warehouses, retail stores, shopping malls for monitoring purposes. |

| 15. | <p>Can the product or process developed in the project be taken up for filing a Patent?</p> <p>Yes / No: No</p> <p>Prior Art search done?</p> <p>Yes/No: No</p> | | | | | | | | | | | | | | |
|---|--|--------|--------|---|---------|----------------|--------|---------------------|------|---|--------|---|---------|--------------|----------------|
| 16. | <p>Budget details (break-up details should be given):</p> <table border="1"> <thead> <tr> <th>Budget</th> <th>Amount</th> </tr> </thead> <tbody> <tr> <td>a) Materials / Consumables (Please specify) Logitech C310 Webcam.</td> <td>3095.00</td> </tr> <tr> <td>b) Flash light</td> <td>600.00</td> </tr> <tr> <td>b) Labor (Describe)</td> <td>0.00</td> </tr> <tr> <td>c) Travel (Describe) Supermarket and Shops for testing.</td> <td>500.00</td> </tr> <tr> <td>e) Miscellaneous (Please specify) Report and testing.</td> <td>1200.00</td> </tr> <tr> <td>Total</td> <td>5395.00</td> </tr> </tbody> </table> | Budget | Amount | a) Materials / Consumables (Please specify) Logitech C310 Webcam. | 3095.00 | b) Flash light | 600.00 | b) Labor (Describe) | 0.00 | c) Travel (Describe) Supermarket and Shops for testing. | 500.00 | e) Miscellaneous (Please specify) Report and testing. | 1200.00 | Total | 5395.00 |
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| Total | 5395.00 | | | | | | | | | | | | | | |
| 17. | <p>Any other technical details (Please specify):</p> <ul style="list-style-type: none"> GPU: Nvidia GeForce GTX 1650 or above Webcam with appropriate drivers installed. Flashlight/ LED if using this at night. This project will be developed using Python 3 with the following Packages : OpenCV, skimage, numpy, tkinter, simpleaudio etc. | | | | | | | | | | | | | | |
| 18. | <p>SPP Coordinator (Identified by the college):</p> <p>Name: Prof. Shashikant Cholake</p> <p>Email id: mech.sgcholake@bldeacet.ac.in</p> <p>Contact No.: 9036295729</p> | | | | | | | | | | | | | | |

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