SRI RAMAKRISHNA ENGINEERING COLLEGE

[Educational Service: SNR Sons Charitable Trust]
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VATTAMALAIPALAYAM, N.G.G.O. COLONY POST, COIMBATORE – 641 022

25.07.2025

CALL FOR QUOTATION
for
CSIR/EMR II/ASPIRE – Research Project
on the title

"CUTTING EDGE ARTIFICIAL INTELLIGENCE FOR TEXTILE FABRIC QUALITY INSPECTION SYSTEM"

Project Investigator: Dr.B.Sharmila, Professor, Department of EIE

Co-Project Investigator: Dr.D.Devasena, Associate Professor, Department of EIE

About the Project:

Ensuring the quality of textile fabrics is a critical factor in enhancing customer satisfaction and reducing product rejections in the textile industry. This research project aims to develop a cutting-edge Artificial Intelligence (AI)-based Textile Fabric Quality Inspection System using real-time machine vision. The primary objectives include the identification and classification of various fabric defects through an automated vision inspection system, minimizing human errors and ensuring 100% quality inspection. The proposed system captures fabric images using high-resolution cameras and processes them through image processing techniques such as masking, segmentation, and histogram analysis to detect defects like horizontal lines, shade variations, and stains.

An AI algorithm, utilizing supervised learning methods such as Convolutional Neural Networks (CNN) or K-means clustering, will be designed to accurately identify fabric defects. A robust dataset of defect images will be developed, and the model will be trained and tested to achieve high accuracy. The system will also incorporate self-learning capabilities, allowing it to adapt to new types of defects by automatically updating its parameters and retraining the model. The implementation of this intelligent inspection system on embedded hardware will enable real-time defect detection, marking, and decision-making, thereby enhancing the efficiency and reliability of textile quality control processes.

LIST OF COMPONENTS TO BE QUOTED

S.NO	DESCRIPTION	QUANTITY
1	High Resolution Area Scan Global Shutter Camera Accessories: • Camera cable 10M • Trigger Cable 10M • Frame grabber • Camera mount	1
2	High resolution line scan Fixed Focal lens	1
3	24V bar light Controller- MVL- Controller and 24V Power supply , 5m Extension cable + Customized as per the project design	1
4	GPU for high performance AI with all accessories	1
5	Delta - AS228T-A PLC with Ethernet communication. Ethernet Cat6 programming cable Meanwell 10 A SMPS Bharat make control panel, connectors-Wago, cables- Lapp, Electricals- Siemens, Cable tray – salzer. Wiring and plc programming support included.	1
6	Manual Fabric inspection and rolling machine with full design information.	1

For Enquires Contact:

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