Fabric Defect Detection Artificial Intelligence (AI) Market to Reach US $0.8 Billion by 2029

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What Is The Estimated Industry Size Of Fabric Defect Detection Artificial Intelligence (AI) Market?
The market size of artificial intelligence (AI) for fabric defect detection has experienced rapid expansion in the past few years. The size is expected to increase from $0.40 billion in 2024 to $0.46 billion in 2025, indicating a compound annual growth rate (CAGR) of 15.6%. This significant growth during the historical period can be linked to escalating investments in advanced inspection, growing necessity for flawless fabrics in the clothing industry, the prominence of industrial automation in textile production, heightened awareness regarding product quality norms, and the increasing adoption of AI-enabled quality monitoring systems.

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>
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The artificial intelligence (AI) market for fabric defect detection is projected to experience substantial growth in the coming years, escalating to a worth of $0.81 billion in 2029 with a compound annual growth rate (CAGR) of 15.2%. The growth during the anticipated period is primarily fuelled by the expanding utilisation of AI-powered fabric inspection systems, the growing demand for intelligent manufacturing solutions, the rise in worldwide textile production, a greater emphasis on cutting down manufacturing waste, and increased investment in research and development for enhancing quality. Key trends during this period consist of advancements in AI and machine learning integration, the creation of fully automatic inspection systems, developments in real-time flaw detection technologies, strides in cloud-based monitoring and analytics, and the fabrication of intelligent sensors for fabric quality monitoring.

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What Are The Major Factors Driving The Fabric Defect Detection Artificial Intelligence (AI) Global Market Growth?
The fabric defect detection AI market is predicted to surge in growth due to the increasing demand for textiles. Textiles, made by knitting, weaving, or bonding fibers together for applications such as clothing, furnishings, and more, are experiencing a rise in demand. This is primarily due to the burgeoning global population and the resultant urban development, which has led to an uptick in the need for clothing, home decor, and industrial fabrics, all of which accommodate this escalating lifestyle and infrastructure. The advent of fabric defect detection AI is a boon to the textile industry, as it ensures consistent quality across products by spotting and rectifying defects swiftly, reducing material wastage, and upholding high consumer expectations. As an illustration, the World Trade Organization, a Switzerland-based international group, reported in October 2025 that there was an increase of 2% in the global trade of textile products in 2024 compared to 2023. This was followed by a significant 7% growth in the first half of 2025 in comparison to the corresponding period in 2024. As a result, the increased demand for textiles is stimulating the growth of the fabric defect detection AI market.

Who Are The Leading Companies In The Fabric Defect Detection Artificial Intelligence (AI) Market?
Major players in the Fabric Defect Detection Artificial Intelligence (AI) Global Market Report 2025 include:
• Keyence Corporation
• Shenzhen Chaoqiang Technology Co. Ltd.
• BarcoVision
• Zhejiang Cixing Co. Ltd.
• VITRONIC Machine Vision Ltd.
• Datacolor AG
• Uster Technologies AG
• Elbit Systems Ltd.
• Jiangsu Yingyou Textile Machinery Co. Ltd.
• VisionTex

What Are The Upcoming Trends Of Fabric Defect Detection Artificial Intelligence (AI) Market In The Globe?
Leading businesses in the fabric defect detection AI market are focusing their efforts on creating superior solutions like fabric scanning technologies, aimed at providing uninterrupted real-time surveillance. This technique employs sensors or imaging systems to scrutinize textiles and instinctively detect abnormalities or defects during the process of manufacturing. For instance, Turkey-based AI solutions company Serkon Teknoloji Inc. launched an AI fabric scanning technology named QBar.AI in March 2024. This system is capable of detecting defects on fabric

surfaces at the flow rate. It takes high-resolution photographs of fabrics and uses an AI system to spot defects such as stains, holes, or inconsistencies in the weave across denim, woven, and knitted materials. When a flaw is detected, it instantly alerts the operations team and can also autostop the machine mitigating further production of defective fabric. The system precisely earmarks each flaw's location, expediting corrective action and lessening dependence on manual checks. QBar.AI, which is compatible with current production lines via Ethernet, COM port, Wi-Fi, or Bluetooth, can export data in various formats, helping improve report efficiency, reduce waste and ensure consistent product quality.

What Are The Primary Segments Covered In The Global Fabric Defect Detection Artificial Intelligence (AI) Market Report?
The fabric defect detection artificial intelligence (ai)market covered in this report is segmented –

1) By Component: Software, Hardware, Services
2) By Deployment Mode: On-Premises, Cloud
3) By Technology: Machine Learning, Deep Learning, Computer Vision, Other Technologies
4) By End-User: Textile Industry, Apparel Industry, Home Furnishing, Automotive Textiles, Other End-Users

Subsegments:
1) By Software: Image Processing Software, Defect Analysis Software, Quality Control Management Software, Pattern Recognition Software, Machine Learning And AI Analytics Software
2) By Hardware: Cameras And Imaging Sensors, Lighting Systems, Optical Scanners, Automated Inspection Machines, Edge Computing Devices
3) By Services: Installation And Integration Services, Maintenance And Support Services, Consulting And Advisory Services, Training And Education Services, Cloud-Based Monitoring Services

View the full fabric defect detection artificial intelligence (ai) market report:
https://www.thebusinessresearchcompany.com/report/fabric-defect-detection-artificial-intelligence-ai-global-market-report

Which Region Is Forecasted To Grow The Fastest In The Fabric Defect Detection Artificial Intelligence (AI) Industry?
In the Fabric Defect Detection Artificial Intelligence (AI) Global Market Report 2025, North America emerged as the dominant region in 2024. The Asia-Pacific region is projected to experience the most rapid growth in the forecasted period. Several regions are analyzed in this report, including North America, Asia-Pacific, Western Europe, Eastern Europe, South America, Middle East, and Africa.

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