

BITSTEK CONSULTING

BitsTek is an agile business consultancy with a strategic network spanning multiple industries and service sectors. Founded with a commitment to becoming an integral part of our clients' success stories, we deliver tailored solutions that address your specific business objectives.

Our innovative approach creates a sustainable ecosystem for your organization's growth.

We don't just innovate—we execute and maintain comprehensive, cost-effective solutions that drive tangible results. By combining our passion for people with our technical expertise, we place your success at the center of everything we do.

Your Vision. Our Intelligence. Extraordinary Results.



Bib Detection System for Marathon Events

Modern solution for marathon participant identification. Combines computer vision and object detection. Enables accurate, real-time event analytics.





Project Overview



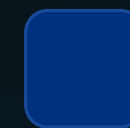
Automated Detection

Detects marathoners using bib numbers and faces from event footage



Smart Tracking

Automates participant identification and tracking throughout the race



Seamless Integration

Integrates with event management systems for streamlined workflow

Key Objectives

Accurate Extraction

Extract bib IDs from diverse, real-world footage with high precision and reliability

Image Retrieval

Enable instant image retrieval by bib ID for comprehensive event review and analysis

Enhanced Experience

Improve participant experience and event security through automated identification



YoLov8 Object Detection



System Workflow

1

Capture

Footage captured as participants arrive or run past checkpoints

2

Detect

YOLOv8 model detects persons and extracts bib numbers by easy OCR

3

Link

Person linked to detected bibs for participant confirmation and verification

4

Store

Bib ID, face, and image stored in searchable database system

Technology Stack



YOLOv8 Model

Deep learning model for fast, robust detection capabilities



Training Data

Trained on of marathon images and bib styles



Processing

Real-time or batch processing supported for flexibility



Scalability

Cloud platform integration for unlimited scalability



Core Features

Precision Detection

High-accuracy bib and face detection, even in crowded scenes

Event Adaptability

Adaptable to other sporting and mass participation events



Rapid Search

Instant search and retrieval by entering any bib ID

Review Support

Comprehensive image review and result verification capabilities

Use Cases & Benefits

Race Management

Streamlines race management and results processing for organizers

Safety & Accuracy

Enhances safety and data accuracy for event organizers



Next Steps & Conclusion

Dataset Expansion

Improve detection accuracy in diverse weather and lighting conditions

1

2

3

Future Scaling

Expand to other athletic and large-scale public events worldwide

Pilot Deployment

Partner with race organizers for real-world testing in 2025

This system represents a pioneering step in modern event management technology.