TMA Technology Group
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TMA AI Newsletter Q1 2026

Welcome to TMA AI Quarter's Newsletter. Please contact: bizgt@tma.com.bn for detailed information.

← Events | → New Solutions

Events

Securing Agentic AI

The seminal explored security challenges in Agentic AI, including risks like prompt injection, memory poisoning, and identity vulnerabilities, along with practical strategies to improve AI system security.

Thinking in Data: Recommendation Systems in LLM Era Workshop

In an event in Japan on 6 to 9 March 26, Dang Duc Tien TM is to share pioneered insights on modern recommendation systems and how LLMs enhance personalisation and user experience.

AI for Healthcare Research Collaboration Seminar

Dr Ze Yu in Healthcare seminar supporting AI research in human collaboration between universities and hospitals, the Field Neuroblast Center showed its experience in applying AI technologies to address healthcare challenges.

AI Training for Enterprises Seminar

As AI is transforming enterprises across industries, it introduces the risk of proprietary proposed models for university industry collaboration to deliver AI training for both technical and non-technical students.

New Solutions

1. Orthopedic Preoperative Planning App	2. Real-Time Financial Fraud Detection	3. AI for Insurtech
4. Agentic Vision Platform 2.0	5. Smart Camera for Factories	6. Project Management Agent 2.0

1. Orthopedic Preoperative Planning App

Description

An orthopedic preoperative planning app that converts medical images into 3D models, automates measurements, and generates surgical plans, improved by enabling accurate measurements, implant templating, and efficient digital workflows.

Functions

- **Smart Calibration:** Features automatic detection of markers (coins or spheres) and angles for bite-side detect calibration and fiducial or circle-based adjustment.
- **Measurement Suite:** Include Distance, Angle, Area, and Cine tools with flexible table and position controls.
- **Implant Templates Library:** Access a rich catalog from reputable vendors (e.g. Stryker, Zimmer Biomet, Medacta) with predefined and manage secondary templates directly within the app.
- **Flexible Implant Interaction:** Allow for rotation (by degree or free hand), translation, and scaling of implants, with the option to save final and signal templates for clear underlying bone structures.
- **Project Management:** Allows saving entire plans as local files or using "Save Workspace" to share a new case with a single click.

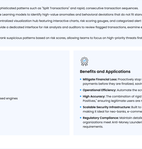
Technologies

- **Front-end:** Progressive Web App (PWA) using Webrtc
- **AI/ML Core:** Uses TensorFlow.js for object detection (OpenCV)

Benefits and Applications

- **Progressive Web App:** Access surgical plans anytime, anywhere. The lightweight WebAssembly PWA works seamlessly across tablets, laptops, and smartphones.
- **Superior Surgical Accuracy:** Minimizes intra-operative risks by determining the optimal implant size and the potential jitter, ensuring a fit tailored to each patient's unique anatomy.
- **Optimized Workflow:** Eliminates the logistical burden of physical scalpel templates and manual measurements, streamlining pre-op preparation and saves valuable time in daily schedules.
- **High-Fidelity Visualization:** Implement exceptional clarity for localized X-rays. The solution supports detailed observation and precise planning, even with high-resolution imaging.

2. Real-Time Financial Fraud Detection



Description

An AI-driven security platform that detects real-time financial fraud using hybrid logic, featuring an intuitive dashboard for expert verification and prioritization.

Functions

- **Automated Data Ingestion & Processing:** Automatically retrieve transaction logs from primary databases, perform data cleansing and normalization.
- **Duplicate Payment Detection:** Identify redundancies by correlating transaction amounts, timestamps, and unique identifiers to flag accidental or malicious duplicate transactions.
- **Advanced Fraud Detection:** Detect sophisticated patterns such as "split transactions" and rapid, consecutive transaction sequences.
- **Anomaly Detection:** Leverage Machine Learning models to identify high-value anomalies and behavioral deviations that do not fit standard user profiles.
- **Risk Monitoring Dashboard:** Offer a centralized visualization hub featuring interactive charts, real-time alerts, and comprehensive risk scores.
- **Human-in-the-Loop Verification:** Provide a dedicated interface for risk analysts and auditors to review flagged transactions, examine evidence, and manually override or confirm alerts.
- **Decision Prioritization:** Automatically rank suspicious patterns based on risk scores, allowing teams to focus on high-priority threats first to optimize response times.

Technologies

- **Frontend:** C# Winform, Telerical UI5
- **Backend:** API: Python, Flask
- **Database:** MongoDB
- **AI & Data Processing:** Python, Rule-based engines

Benefits and Applications

- **Mitigate Financial Loss:** Proactively stop fraudulent transfers and duplicate payments before they are finalized, saving significant capital.
- **Operational Efficiency:** Automate the screening of millions of transactions.
- **High Accuracy:** The combination of rigid rules and flexible AI minimizes "false positives" ensuring legitimate transactions proceed smoothly.
- **Scalable Security Infrastructure:** Built to handle high transaction volumes, making it ideal for new banks, e-commerce gateways, and fintech enterprises.
- **Regulatory Compliance:** Maintain detailed logs and audit trails, helping organizations meet anti-money laundering (AML) and Know Your Customer (KYC) requirements.

3. AI for Insurtech

Description

The solution focused on automating insurance workflows through four core capabilities: document intelligence, fraud detection, claim image analysis, and AI-powered report generation. The system leverages OCR, computer vision, and large language models to process unstructured data from invoices, forms, and generate actionable insights for insurance operations.

Functions

- **Document Intelligence:** Extract and structure data from insurance documents (invoices, bills, invoices, receipts) using a strong-source OCR pipeline including stamp detection, removal, and clean text extraction into structured formats (e.g., JSON).
- **Fraud Detection & Verification:** Detect potential fraud by combining OCR accuracy, stamp authenticity checking, fuzzy field matching, and a weighted scoring system to identify high-risk claims for manual review.
- **Claim Image Analysis:** Automatically extract images (vehicle, property, medical) to detect damage, classify severity (minor/moderate/severe), and estimate claim costs with a heuristic.
- **AI-powered Report Generation:** Analyze structured/unstructured insurance data (e.g., claims, policies, customer profiles) to create insights, risk assessments, and recommendations using LLMs.

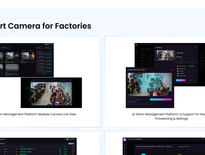
Technologies

- **Frontend:** C# Winform
- **Backend:** API: Python (Flask)
- **AI Models:** OCR: GPT-OSS-20B, Vision Models: DCR, VP-DeTR
- **Model Serving:** vLLM (GPT-OSS on premise), OpenAI/Gpt
- **Cloud & Infrastructure:** Azure/Docker

Benefits and Applications

- **Automation of Manual Workflows:** Reduce manual effort in document processing, data entry, and claims handling.
- **Accurate Fraud Detection:** Multi-factor AI validation improves reliability in identifying fraudulent claims.
- **Faster Claim Processing:** Automated image and document analysis accelerates claim assessment and decision-making.
- **Insight-driven Decision Making:** Generation reports provide clear, structured insights and risk evaluations.
- **Modular & Scalable System:** Your independent AI modules can be integrated into existing insurance systems and scaled as needed.

4. Agentic Vision Platform 2.0



Description

Upgraded the Agentic Vision Platform 2.0 platform to improve autonomous monitoring and decision-making for critical infrastructure. Features include object path planning, dynamic task allocation, real-time monitoring, seamless system integration, and full operational traceability.

Functions

- **Environment Monitoring:** Detect anomalies such as fallen objects, dirt, trash, and structural damage.
- **Safety & Hazard Detection:** Identify fire, smoke, gas leaks, and safety equipment status.
- **PPE & Compliance:** Detect missing PPE and non-compliant uniforms.
- **Behavior Monitoring:** Identify unsafe or inappropriate behaviors (e.g., smoking, unauthorized gathering, loitering).
- **Staff Presence:** Monitor attendance at assigned positions.
- **Security Control:** Detect theft, unauthorized access, and suspicious activities.
- **Restricted Items:** Identify prohibited items or unattended bags.
- **Public Safety:** Monitor risks in public areas (e.g., unattended children, restricted zones).
- **Facility Monitoring:** Detect energy waste such as lights left on.

Technologies

- Qwen VLM
- Vision Language Model
- Knowledge RAG
- Graph RAG
- Video Stream Server

Benefits and Applications

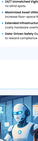
- **Autonomous Operations:** Reduce manual effort in document processing, data entry, and claims handling.
- **Accurate Fraud Detection:** Multi-factor AI validation improves reliability in identifying fraudulent claims.
- **Faster Claim Processing:** Automated image and document analysis accelerates claim assessment and decision-making.
- **Insight-driven Decision Making:** Generation reports provide clear, structured insights and risk evaluations.
- **Modular & Scalable System:** Your independent AI modules can be integrated into existing insurance systems and scaled as needed.

5. Smart Camera for Factories

AI Vision Management Platform: Multiple Camera Live View

AI Vision Management Platform: AI Support for Feature Provisioning & Settings

AI Vision Management Platform: Camera Management & Feature Center Control



AI Vision Management Platform: Dashboard Statistics with Customized Chart Types

Description

The AI Vision Platform transforms traditional CCTV from passive recording into a real-time, decision-driving security system. With centralized control through an intuitive web interface, it capabilities are instantly deployed, configured, and scaled across every camera, ensuring consistent, high-accuracy monitoring and rapid response.

Functions

AI Vision Core Features

- **Access Control & Perimeter Security:** Secure entry points and restricted areas in real time with facial recognition, license plate recognition, and virtual fencing.
- **Safety Compliance & Hazard Detection:** Enforce PPE compliance and detects fire, smoke, and hazardous proximity events.
- **Behavior & Performance Analytics:** Identify high-risk behaviors like smoking or phone distractions while analyzing workflow to eliminate production bottlenecks.
- **Logistics & Fleet Intelligence:** Automate product counting, barcode scanning, and package integrity checks while monitoring conveyors for real-time jam detection.

AI Vision Centralized Control Hub

- **Total Feature Control:** Remotely activate, deactivate, or reactivate AI features across your factory cameras fleet with one click.
- **Visual Provisioning:** Drag "Restricted Zones" and "Tripwires" directly onto live video feeds to customize detection parameters.
- **Smart Object Selection:** Tailor each camera to detect specific targets like people, forklifts, or vehicles.
- **Actionable Analytics:** View real-time live feeds and export visualized event reports to optimize factory safety and performance.
- **Centralized Administration:** Monitor device health and manage secure user roles from a single inventory list.

Technologies

- **RL & Image Processing:** High-accuracy Object Detection and multi-object tracking algorithms
- **Frameworks & Tools:** Pytorch, OpenCV, Label Studio, Ultralytics YOLO v11 and RT-DETR for lightweight messaging
- **Hardware:** Optimized performance using NVIDIA TensorRT, Ultralytics and Deepstream
- **Deployment:** Edge: Go and Model Conversion, Model Serving, and low-latency Video Streaming

Benefits and Applications

- **Reduced Operational Liability:** Lower accident risk, curbing insurance costs, legal liabilities, and workplace disruptions.
- **24/7 Unmanned Vigilance:** Continuously analyze every camera feed, no fatigue, no blind spots.
- **Data-Driven Optimization:** Optimize traffic flow and equipment movement to increase floor space ROI.
- **Extended Infrastructure Value:** Upgrade legacy CCTV into intelligent sensors, no costly hardware overhaul required.
- **Faster Root Cause Analysis:** Replace subjective oversight with actionable data to reveal compliance and target training effectively.

6. Project Management Agent 2.0

Description

Automated service enables corporate meeting transcription and summarization, mobile task management, real-time project workflows, dynamic role-based access control, and enhanced reporting with audit tracking.

Functions

- **Automated Meeting Notes:** Automatically transcribe meetings and generate summaries.
- **Audio & Video Transcription:** Support multi-format processing status and centralized meeting tracking.
- **Mobile Task Management:** Create, assign, and track tasks and notifications via mobile app.
- **Approval Workflows:** Provide multi-level approval workflows with progress tracking and real-time updates.
- **Dynamic Access Control:** Role-based access control with dynamic permission settings.
- **Reporting & Audit Logs:** Generate comprehensive KPI and audit logs.

Technologies

- Speech-To-Text Models
- LLM & Text Architecture
- Mobile Cross-Platform System
- Workflow Engine

Benefits and Applications

- **Great Productivity:** Reduce manual note-taking and improve task follow-up.
- **Cross-Platform Collaboration:** Ensure seamless collaboration across web and mobile.
- **Project Visibility:** Offer clear insights through dashboards and real-time updates.
- **Secure Governance:** Maintain controlled access with structured permissions.
- **Faster Decisions:** Centralize action items with AI-driven insights.

Explore TMA AI Solutions: TMA AI Solutions

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