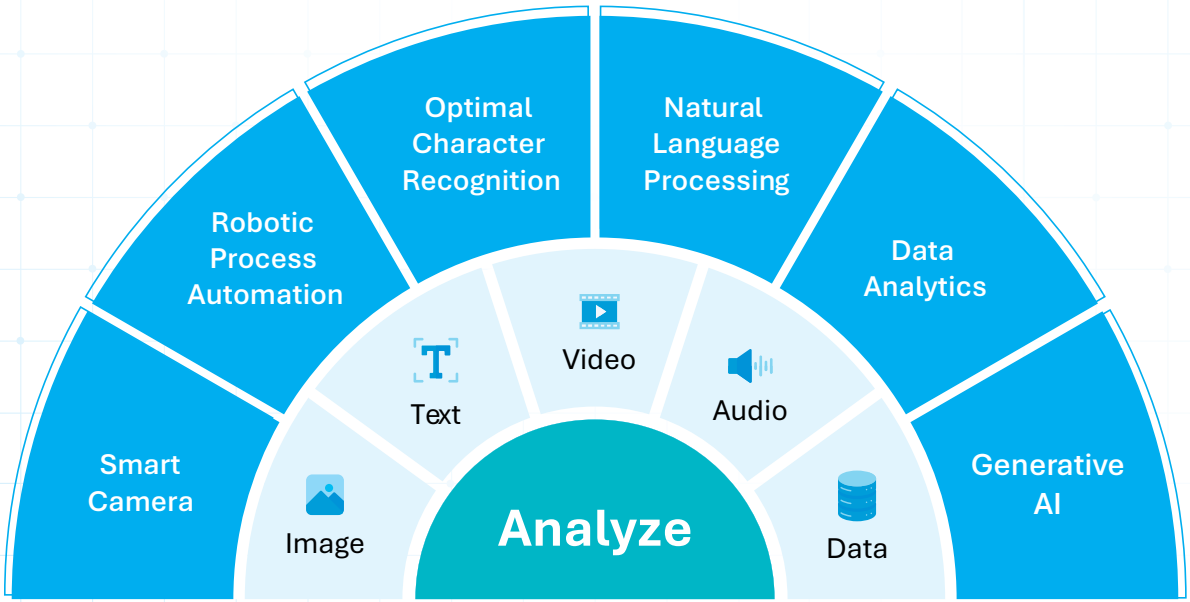
YOUR TECHNOLOGY & INNOVATION PARTNER

TMA AI Center



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TMA AI Center

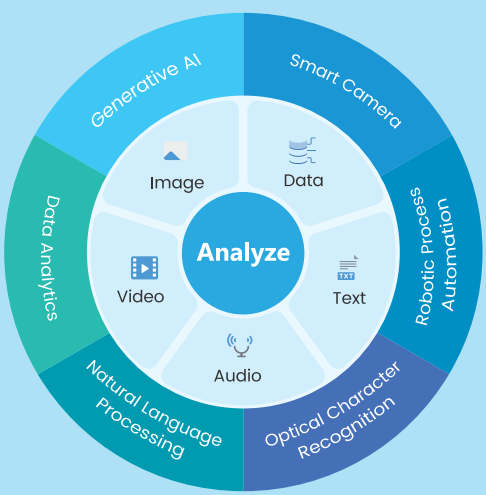
10+
years of experience

100+
AI solutions

300+
AI certificates

100+
AI projects

Clients from
20+ countries



- Manufacturing
- Healthcare
- Telecom/ Networking
- Automotive
- Security & Safety
- E-commerce & Retail
- Logistics
- Finance, Banking & Insurance
- Agriculture
- Education & Recruitment

Services



Develop AI Features/ Products



Setup AI Development Center



Provide AI Solutions



AI as a Service (AIaaS)

Sample AI Transformation Process

Digital Transformation → **Data Transformation** → **AI Transformation**

Current System

- Data
- Workflows
- Functions/applications
- Automation level

- Business goals
- Business transformation
- Identify problems and opportunities
- Digital, data and AI roadmap
- Data strategy
- Identify processes that can be automated
- Identify AI solutions
- Prototype/PoC
- Evaluation
- Improvement

Target System

- Data
- Workflows
- Functions/applications
- Automation level

Technologies (1/2)

Generative AI | LLMs | NLP

- **Chatbot, LLM:** Rasa, Botpress, TensorFlow, PyTorch, DialogFlow, MS Bot Fwk, Transformers, Gemini, GPT, Llama, Tülu, DeepSeek, Qwen
- **AI Agent, Agentic AI, RAG-based LLM:** Langchain (LangGraph), LlamaIndex (LlamaIndex Workflow), Langfuse, CrewAI, Prompt flow, Voiceflow
- **NLP:** SpaCy, NLTK, TextBlob, RegEx

Edge AI

- **Edge AI Devices:** Raspberry Pi, Jetson Nano, Intel NCS, MCU
- **Edge AI Frameworks:** TensorRT, OpenVINO, ONNX, TensorFlow Lite, PyTorch Mobile, CoreML, ML Kit
- **NVIDIA Frameworks:** Metropolis, DeepStream SDK, TAO Toolkit
- **Qualcomm Frameworks:** Neural Processing SDK

Machine Learning (ML)

- **Supervised ML:** Linear Regression, SVM, Decision Tree, Gradient Boosted, LDA, UMAP
- **Unsupervised ML:** PCA, t-SNE, UMAP, KNN, K-means clustering, Hierarchical clustering
- **Deep Learning:** DNNs, CNNs, RNNs, HMMs, GANs, Autoencoders, Transformer Networks, Self-supervised Learning, Diffusion model
- **Reinforcement Learning:** Markov decision process, Q-Learning and Deep Q-Networks
- **Predictive Analysis:** ARIMA, SARIMA, Prophet, LSTMs, Transformer-based forecasting
- **Recommendation System:** Collaborative Filtering, Content-based, Hybrid, Graph analysis

Technologies (2/2)

Computer Vision (CV)

- **Object Detection:** YOLO v8, Faster R-CNN, SSD, DETR, SORT, DeepSORT, ByteTrack
- **Pose Estimation:** OpenPose, MediaPipe, DeepPose
- **Facial Recognition:** FaceNet, ArcFace, Dlib
- **OCR (Optical Character Recognition):** Tesseract, EasyOCR, PaddleOCR
- **Video Streaming & Analytics:** NVIDIA DeepStream SDK, GStreamer + OpenCV, FFmpeg, WebRTC
- **Audio & Signal Processing:** Mel-Spectrograms, Sound waves processing, Fourier Transform, Dynamic Time Warping, HuBert

Speech & Voice Recognition

- **Acoustic & Language modelling:** DNNs, CNNs, Transformers
- **Feature Extraction:** MFCCs, PLP, Spectrograms
- **Frameworks:** Google Speech to-Text, Amazon Transcribe, IBM Watson Speech to Text, Microsoft Azure Speech, Deepgram, SpeechRecognition, DeepSpeech, Kaldi, Pyttsx3, PyAudio

Cloud AI & Services

- **LLM:** Azure OpenAI Studio, OpenAI API, Bedrock (AWS), Vertex AI (Google Cloud)
- **Video & AI Avatar:** Azure Avatar, Synthesia, Elai, Heygen, D-ID
- **Machine Learning:** AWS SageMaker, Azure ML Studio
- **MLOps:** MLflow, Azure Machine Learning, Google Vertex AI, Databricks, AWS SageMaker, DataRobot, Kubeflow
- **AIOps:** Splunk IT Service Intelligence (ITSI), Dynatrace

Generative AI

Applications			
	Local LLM solutions	Enterprise knowledge-based	Call center assistant
	Course builder	Human AI presenter	Training virtual assistant
	Customer service chatbot	Automated financial report	Vision language model

Data Management

Apply GenAI Technologies	**LLM RAG & Orchestration:** Langchain (LangGraph), LlamaIndex (LlamaIndex Workflow), Langfuse, CrewAI, Prompt flow, Voiceflow	**Monitoring & Observability:** Prometheus, Grafana, Sentry

Deployment				
	On Premise	MS Azure	AWS	Google Cloud Platform (GCP)

AI Agents

Sample Projects	Patient intake assistant	Customer service agent	Call center assistant
Available Agents	Knowledge-based Agent	Conversation Agent	Browser Agent
	Data Analysis Agent	Testing Agent	Summarization Agent
AI Agent Builder Modules	Workflow Builder	Agent Marketplace	Flexible Deployment
	Multimodals LLM	Secured Platform	Data Platform

Smart Camera

Deployment	On Premise	MS Azure	AWS	Google Cloud Platform (GCP)

Hardware



Camera



Nvidia Jetson Nano/TX2/ Xavier | **ASUS** EBS-I10 | **ADLINK** EOS-JNX | **ADLink** DLAP-211 -Nano | **SOPHGO** AI Micro Server | **Qualcomm** | **AMD-Xilinx** Avnet Ultra96 | **Intel** Axiomtek IPC950

Edge Computer



AI on Mobile



Nvidia GeForce, Quadro, Tesla | **SOPHGO** GPU | **Qualcomm**

AI server with GPUs

Applications

Security & Safety
- Access control
- Vehicle detection
- License plate recognition
- Parking lot detection
- Aggression/crowd/ weapon detection
- Children/pet detection
- Intrusion detection

Manufacturing
- Defect detection
- Product sorting/ counting
- Packaging information extraction
- Equipment/machinery data extraction
- Personal protective equipment (PPE) detection
- Warehouse access control

Healthcare
- Fall detection
- Patient taking medication activities detection
- Tooth recognition & scoring
- Medical documents extraction

Retail
- Smart locker
- People counting

Agriculture
- Pest detection
- Pig abnormal behaviors detection

Smart Building
- Resident/guest access control
- Security & safety camera
- Locker for residential buildings

Edge AI

Data Sources	Cameras	Sensors	Accelerometers
	Microphones	Industrial Control Systems	RFID & NFC

Hardware



Camera



Edge Computer



AI on Mobile

Technologies	**Edge AI Devices:** Raspberry Pi, Jetson Nano, Intel NCS, MCU	**Edge AI Frameworks:** TensorRT, OpenVINO, ONNX, TensorFlow Lite, PyTorch Mobile, CoreML, ML Kit	**NVIDIA Frameworks:** Metropolis, DeepStream SDK, TAO Toolkit	**Qualcomm Frameworks:** Neural Processing SDK

Applications	Security & Safety	Manufacturing	Healthcare
	Agriculture	Retail	Smart Building

Robotic Process Automation (RPA)

Tools

Power Automate · UiPath · Automation Anywhere · blueprism · TBot

Applications

Logistics
- Account creation
- COD automation
- Invoices data process
- Logistics shipment tracing
- Custom clearance declaration process

Finance
- E-invoices collector solution
- Automatic debt reminder
- Finance report mismatches detection
- Bank & tax statement OCR
- Claim payment process

E-commerce
- Brand labeling & recognition
- Product description generator
- Certificate of conformity data input
- Inventory alert vendor application process

Human Resource
- Document parser
- Automatic resume input
- Job & candidate matching
- Onboarding process
- Training report automation

NLP & OCR

Technologies	**Frameworks:** TensorRT, OpenVINO, NVIDIA Jetson SDK, OpenCV, Scikit-image, Pillow, Pytorch, TensorFlow, Keras, ONNX, PaddleOCR	**AI Models:** Recurrent Neural Networks (RNNs), Convolutional Neural Networks (CNNs), Statistical Models, Rule-Based Models, Vision Transformer (ViT), Vision Language Models (VLMs), Specific OCR Systems/APIs (Azure AI Vision OCR, AWS Textract, Tesseract OCR, PaddleOCR)
Deployment	On-Premise	Cloud

Applications

Manufacturing
- Invoice
- Analog devices
- License plate

Healthcare
- Medical device
- Inbody result
- Prescription

Finance, Banking & Insurance
- Invoice
- Bank & tax statement
- Insurance claim payment

Recruitment & Education
- Resume/CV
- Transcript
- Graduation certificate

Identity Documents
- ID card
- Passport
- Driving license

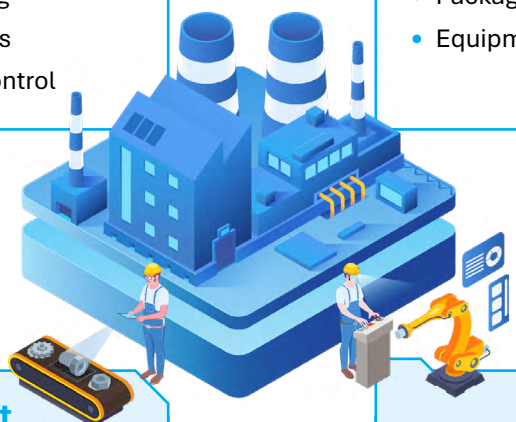
AI Solutions for Smart Manufacturing

Security & Safety

- Personal protective equipment (PPE) detection
- Smart locker
- Emergency notification monitoring
- Safety & security camera solutions
- Worker/partner/vehicle access control

Production

- Defect detection
- Product sorting/counting
- Packaging information extraction
- Equipment/machinery data extraction



Management

- Equipment/machinery data extraction
- Production process optimization solution
- Smart wearable devices for hazard alerts

Maintenance

- Predictive maintenance
- Machine monitoring
- Machine optimization

AI Solutions for Healthcare

Sleep Quality Data Analytics

- Sleep data analysis
- Disorder detection & personalization
- Treatment monitoring & health improvement

Sleep Apnea Detection

- Support data collection from wearable devices
- Detect abnormalities in sleep patterns
- Generate health insights
- Enable continuous tracking for healthcare providers

Atrial Fibrillation Detection Using ECG

- Real-time ECG analysis for AFib detection
- Automated alerts for irregular rhythms
- Telehealth integration for immediate care

Customer Service Chatbot

- Open integration with company information hub
- 24/7 and instant response to user's query
- Support voice chat and messages

Smart Q&A Call Center Assistant

- Open integration with company information hub
- Real-time audio streaming during voice call
- Instant smart answer suggestion

Data Extraction

- Medical prescription
- Health check result
- Inbody result
- Invoice
- Discharge paper

AI Solutions for Telecom/Networking

Network Security & Fraud Detection

- Anomaly detection for cybersecurity threats
- DDoS attacks identification in real-time
- Incident response

Automated Network Management

- Self-healing networks for issue resolution
- Automated provisioning and configuration of network devices

Network Optimization

- Traffic flow optimization
- Workload prediction & network diagnostics



AI Solutions for Automotive

Driver Assistance & Safety

- Blind spot detection
- Moving object detection
- Speed/distance measurement
- Driver monitoring
- Emotion recognition
- Passenger detection
- Lane detection
- Vehicle detection
- Pedestrian detection
- Drivable area segmentation

Customer Service Chatbot

- Automatic parking/driving
- Parking space detection
- Navigation by voice
- AR navigation
- ETA (Estimate Time of Arrival) with traffic prediction
- POI (Place of Interest) recommendation

Vehicle & Road Monitoring

- Smart diagnostics for vehicle maintenance
- Road damage detection
- Traffic sign detection
- Traffic light detection
- Traffic off-road detection
- Illegal parking detection
- Violation detection
- License plate recognition

In-Vehicle Interaction

- Audio enhancement for music/ person/cabin
- Voice command & voice assistant
- Driver interaction with infotainment controller

AI Solutions for Security & Safety

Access control	Vehicle detection	License plate recognition	Parking lot detection
Aggression/crowd/ weapon detection	Children/pet detection	Intrusion detection	Smart locker
Emergency notification monitoring	Phishing email detection	Potential scam detection	Website spoofing prevention



AI Solutions for E-commerce & Retail

Retail

Smart locker	Multi-camera tracking	VIP & blacklist detection	People counting
Age & gender detection	People heatmap	Customer behavior in retail monitoring	Smart call center assistant

Warehouse

Warehouse access control	AR packaging assistant	Inventory alerts

E-commerce

Visual & voice search	Virtual try-on	Product recommendation	Chatbots & virtual assistants

AI Solutions for Logistics

Automatic container loading	AR packaging	Packaging defect detection
Product counting	Parking lot detection	Driver safety solutions



AI Solutions for Finance, Banking & Insurance

Automated financial report	Credit scoring & risk assessment	Finance report mismatches detection
Debt reminder	Insurance claim payment process	Vault access control
Call center assistant	Identity card & driver's license parser	Bank & tax statement OCR



AI Solutions for Agriculture

- Pest detection
- Fruit quality control
- Soil data analytics
- Pig abnormal activities detection
- Environment monitoring



AI Solutions for Education & Recruitment

Course builder	Course finder assistant	Student behavior tracking
CV matching	Job recommendation	Auto grading assessment



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