



慧穩科技股份有限公司
AIWin Technology Co., Ltd

Contact Us

+886-4-2252-5580

service@aiwin.com.tw

+886-4-2252-5570

7 F.-6, No. 500, Shizheng Rd.,
Xitun Dist., Taichung City 407,
Taiwan (R.O.C.)

www.aiwin.com.tw (Official Site)

winhub.ai/zh-Hant (Product Website)

Hub.AI



WinHub.AI Fusion AI Solutions

End-to-End AI implementation

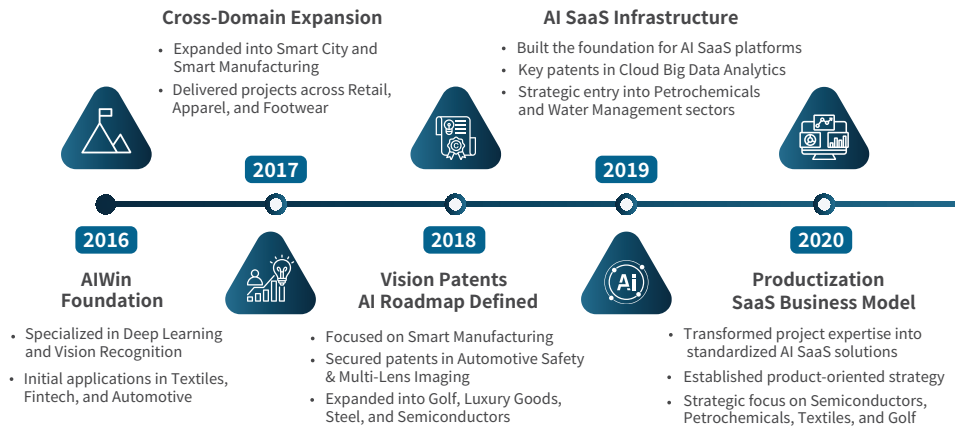


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About AIWin

Empowering Real-World AI. Leading Global Intelligence.

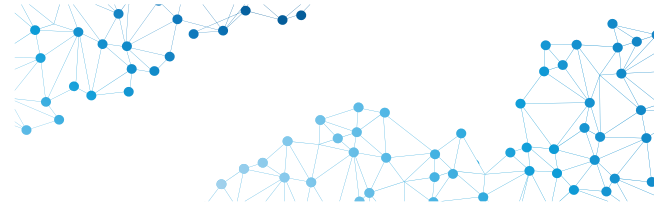


Founded in 2016, AIWin Technology is an AI solution provider specializing in real-world deployment. With over 150 AI projects delivered across 30+ industries — including semiconductor, smart manufacturing, and smart water management — we have built deep expertise in software-hardware integration, empowering clients to establish sustainable AI ecosystems.

Our flagship WinHub.AI Fusion AI platform integrates AI Agents, LLM/VLM, computer vision, data analytics (AutoML), and expert systems into a one-stop AI development and deployment solution — enabling out-of-the-box implementation and building a sustainable AI cycle.

With the vision of becoming a leading global AI solution brand, AIWin is committed to delivering end-to-end AI adoption services that address real client pain points. Backed by years of hands-on experience and proven success stories, AIWin offers flexible project-based and subscription models to help enterprises lower the barrier to AI adoption and achieve sustainable intelligent transformation.

AIWin — Be Your iPartner.



Company Milestones



Your trusted global AI partner.

Real AI, real results.

Contents

Industries & Channel Partners	p.2
WinHub.AI Fusion AI Platform	p.3
WinHub.AI Product Suite	p.4
AIWinOps Patented Visual AI	p.5-p.10
NumOps Intelligent Numeric AI	p.11-p.16
WinEdge Edge AI Inference	p.17-p.22
WinChat Enterprise Knowledge Hub	p.23-p.28

Industries We Serve



Semiconductor
& High-Tech



Water &
Environmental



Manufacturing



Retail &
Consumer Services



Visual &
Data Monitoring



Biomedical &
Agriculture

Our Partners & Resellers



基士德科技股份有限公司
GSD Technologies Co., Ltd.



WinHub.AI Fusion Platform

Powering Industrial Innovation

Generative & Discriminative AI

Smarter content creation, sharper decisions.

- Text generation & summarization
- Knowledge management (KM)
- Intelligent customer assistant

AutoML

Automated modeling that accelerates AI deployment.

- Order forecasting
- Equipment anomaly detection
- Inventory forecasting



Machine Vision

Patented AI vision algorithms for automated recognition and analysis.

- Defect detection & AOI re-inspection
- Image classification & object recognition
- Workplace safety & zone monitoring

Data AI & Expert System

Expert knowledge meets rule-based logic — AI decisions, fast.

- Equipment anomaly & lifecycle prediction
- Process & energy optimization
- Digitized veteran expertise

Edge Computing & AI Agent

Real-time analysis at the source, executed autonomously by AI Agents.

- No-code conversational control
- Cross-system task automation
- Auto-generated analysis & reports

Product Suite

One Platform. Endless Possibilities.

AIWinOps | Patented Visual AI

- 5 built-in vision analysis tools
- No-code model building
- AI-powered auto-labeling
- Proven across industries



NumOps | Intelligent Numeric AI

- Anomaly detection & forecasting
- Real-time data monitoring
- Equipment status analytics
- Built for smart water management
- Proven across industries



WinEdge | Edge AI Inference

- Real-time inference at the edge
- Rapid on-site deployment
- Low-latency performance
- Flexible hardware integration
- Stable, long-term operation



WinChat | AI Knowledge Hub

- Powered by LLM + RAG
- Unified documents & workflows
- Instant, traceable answers
- Less manual effort, faster decisions
- AI Agent for local deployment



Visual AI Solutions | AIWinOps

■ Rapid deployment across every industry



Traffic Management

Manual monitoring is costly and lacks precise recording.



Solution

Visual AI + Multi-Object Tracking

- Multi-ROI zone analytics & directional detection
- Automated vehicle count & flow detection
- Supports local on-premise deployment



Vehicle Inspection

Complex visual checks depend on veteran expertise.

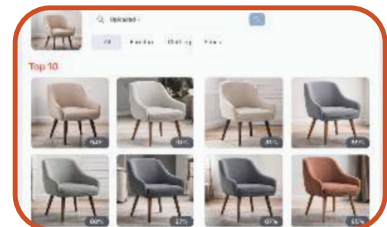
AI Model + WinEdge Integration

- No-code model building
- Post-inference filtering (ROI, confidence, area)
- Standardized inspection, powered by AI



Panel Defect Inspection

Manual inspection is slow, costly, and unreliable.



Style Matching & Visual Search

Similar-product matching is tedious and quality-inconsistent.



Textile Production Monitoring

Manual defect checks are incomplete and poorly documented.

Solution

Deep Learning Defect Recognition

- Automated scratch & dent detection
- AI-assisted smart labeling
- 95-98% detection accuracy

Solution

AI Image Search (Search by Image)

- Feature vector matching
- Instant Top-K visual results
- No training from scratch required
- Customizable for your catalog



Solution

AIWinOps + WinEdge

- Comprehensive defect detection & quantity tracking
- Tri-color light & MES API integration
- Complete quality records

AIWinOps

Visual AI training for every industry

Five Vision Cores for Every AI Need



Image Classification

- Batch image processing
- Automated categorization



Object Detection

- Real-time detection
- Object tracking



Image Segmentation

- Fine-grained segmentation
- Boundary detection



Anomaly Detection

- Train with normal samples only
- Automated recognition & application



Defect Generation

- Generative AI-based defect synthesis
- Minimal real-world data required

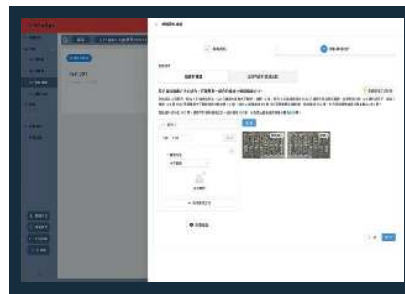
Built-In Tools to Fast-Track AI Development

Data Augmentation

When training data is scarce, augmentation fills the gap — rotating, flipping, and transforming source images to multiply your dataset.

Auto Labeling

Start with a small labeled set to train an initial model. Review, refine, retrain — and scale labeling exponentially in a fraction of the time.



Smart Labeling

Built-in VLM — label one object manually, and the system auto-detects and labels all similar objects in the image.

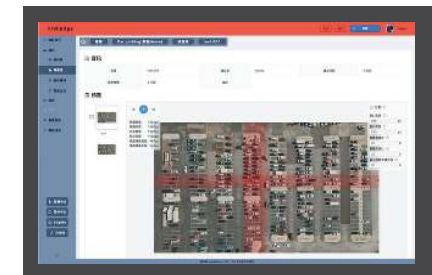
Auto Segmentation

Another VLM application — select one sample, and the system precisely segments and labels target objects automatically.



Image Pre-processing

ROI cropping and tiling for high-resolution images — reducing data volume without losing critical detail, saving compute while boosting accuracy.



Model Zoo

A curated library of visual AI algorithms and models, tested and validated by AIWin. Available on AIWinOps for cross-industry use, with advanced features open for AI teams to train and benchmark custom models.



Zero to One — Your Custom AI Model

1. Create a Project

One-click project setup with isolated workspaces for seamless team collaboration.

01



2. Build & Label Datasets

Import images and annotate with ease — supports direct import from VOC, COCO, and YOLO formats.

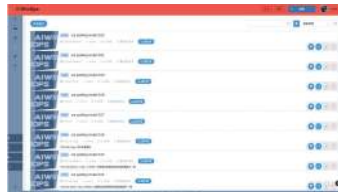
02



3. Train the Model

Select datasets, tune parameters, and launch training — with automated scheduling across projects.

03



4. Validate & Decide

Review loss/accuracy charts, then set inference thresholds and filtering rules with confidence.

04



5. Deploy to the Edge

Deploy trained models to edge devices — turning AI into real-world impact.

05



System Requirements

Hardware Requirements

Item	Minimum Requirements	Recommended Requirements
CPU	12 cores Intel® Core™ i7-12700 Processor	20 cores / 40 threads or higher 2 × Intel® Xeon® Silver 4210 Processors
GPU	NVIDIA GPU VRAM 12GB CUDA Computing capability 7.5	NVIDIA GPU VRAM 16GB or more CUDA Computing capability 7.5 or higher
Memory	64GB	128GB or higher
Storage	512GB SSD + 1TB HDD	1 TB SSD + 4TB HDD or higher
USB Port	USB 2.0 or 3.0 (required for security dongle)	
Recommended Models	APLEX AVS-553, APLEX AVS-P710, NVIDIA GB10 Chip	



APLEX AVS-553



APLEX AVS-P710



NVIDIA GB10

Software Requirements

Item	Version
Operating System	Ubuntu Focal Fossa 22.04 LTS (64-bit) or higher
NVIDIA GPU Driver	535.154.05 or higher
Docker Engine - Community	20.10.17 or higher

Licensing Options

AIWinOps

Perpetual License (On-Premise)

- Perpetual usage license
- Full GPU server setup
- Private cloud deployment
- Complete data ownership
- Lifetime technical support

Best For :
Long-term use, enterprises with sensitive data

AIWinOps

Annual System License (On-Premise)

- Annual usage license
- Full GPU server setup
- Private cloud deployment
- Regular system deployment
- Annual technical support

Best For :
Flexible budgeting, phased rollouts

AIWinOps

Annual Model License (Per-Device)

- Annual usage license
- Full GPU server setup
- Private cloud deployment
- Includes SDK & API (per computer count)

Best For :
Long-term planning, phased deployment needs

落地方案
模型方案

Numeric AI Solutions | NumOps

Turning production data into smarter operations



Process Anomaly Detection

Manual thresholds are hard to tune and costly to maintain.



Solution

Integrated Data Analytics

- Train with normal samples only
- Continuous anomaly detection
- 97.5% anomaly detection accuracy
- 60× faster decisions (30 min → 30 sec)



Chiller Energy Optimization

Chiller control strategies are inefficient, driving up operating costs.

Solution

Quantitative Parameter Correlation

- Parameter-to-efficiency correlation analysis
- AI-recommended optimal control strategies
- Lower long-term operating costs



Sales Forecasting

Forecasts rely on judgment, not data.

Solution

Explainable AI Forecasting

- Learns behavior patterns from historical data
- Delivers explainable, transparent predictions
- Real-time insights for proactive resource planning



Process Oven Temperature

Control relies on operator experience, and training costs are high.

Solution

Intelligent Control Strategy

- Closed-loop automated control, fully autonomous
- Low-trial strategy search
- Stable control within target range
- Outperforms senior operators



NumOps

Numeric AI training for every industry

Six Analytics Engines for Diverse AI Needs



Expert System

- Zero training data required
- Rule-based inference



Classification

- Automated category detection
- Built for risk assessment



Regression

- Continuous value prediction
- Cause-and-effect modeling



Time Series

- Trend forecasting over time
- Periodicity analysis



Anomaly Detection

- Real-time outlier detection
- Fraud & security detection



Cluster

- Unsupervised grouping
- Customer & market segmentation

Dual-Track Approach: Expert Systems & Numeric AI

Expert System — From Rule Base to Deployment

NumOps Expert System captures human expertise and decision logic — no historical data required. Define your input/output features, set units and condition ranges, and NumOps builds a complete rule base that delivers inference-based results tailored to your inputs.

Data-Driven AI Models — From Build to Deployment

For classification, regression, time series, and anomaly detection, follow the workflow below to build and deploy custom AI models that fit your business :

From Raw Data to Real AI

1. Upload & Analyze Data

Upload CSV or XLS files. NumOps auto-flags missing values, runs descriptive statistics and correlation analysis, and detects anomalies with PCA, Isolation Forest, and more — all before you start training.

01



2. Preprocess with Ease

An intuitive preprocessing interface lets you clean and reshape raw data effortlessly — ensuring your model trains on quality inputs.

02



3. Merge Datasets

Merge different dataset versions into a unified view for comprehensive analysis.

03



4. Train the Model

Select your algorithm, configure parameters, pick your dataset, and launch training — with AutoML exploring multiple algorithms to deliver the best-performing model.

04



Intelligent Numeric AI | NumOps

From Automated Model Building to Deployment

Model Analysis

After training, models are auto-ranked with 5-fold cross-validation, delivering key metrics (MSE, R², RMSE, accuracy) and feature importance for performance evaluation:



(Info / Summary)



(Model Ranking)



(Feature Importance)



(Residual Plot)



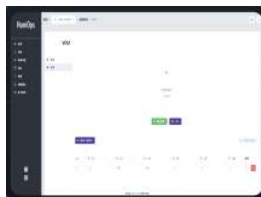
(Test Dataset Analysis)



(Confusion Matrix)

Model Deployment

Once your AI model is validated, complete the authorization and deploy it to WinEdge with one click. WinEdge combines high performance, deployment control, and inference data collection — boosting efficiency, reducing errors, and cutting manual effort for industry upgrades.



Batch Prediction

Validate your trained models in the batch prediction view — release a model, run it on new data, and instantly compare predictions against actual results.



Data Pre-Processing for Accurate Models

Missing Value Handling

Fill missing values with mean, median, or mode — or remove them entirely.

Feature Engineering

Create new columns using formulas or custom rules based on user-defined conditions.

Label Encoding

Convert categorical data into numerical format.

Rule-Based Filtering

Remove data rows based on user-defined conditional logic.

Column Operations

Convert column types to numerical, categorical, or time-series — or rename columns as needed.

Outlier Removal

Detect and remove outliers using PCA or Isolation Forest methods.

Hardware Requirements

Item	Minimum Requirements	Recommended Requirements
CPU	Intel 9th Gen. Core i5/i7 Processor	Intel 13/14th Gen. Core i5/i7 Processor
CPU Architecture	AMD64/x86	AMD64/x86
Memory	16GB	128GB
Storage	HDD 1TB	SSD 1TB + HDD 2TB
USB Port	1 USB 2.0 or 3.0 port (required for security dongle)	
Recommended Models	APLEX AVS-530, NVIDIA GB10 Chip	

Software Requirements

Item	Version
Operating System	Ubuntu 20.04 or higher
Docker Engine - Community	20.10.17 or higher



APLEX AVS-530



NVIDIA GB10

Licensing Options

NumOps

Perpetual License (On-Premise)

- Perpetual usage license
- Private cloud deployment
- Complete data ownership
- Lifetime technical support

Best For :
Long-term use, enterprises with sensitive data

NumOps

Annual System License (On-Premise)

- Annual usage license
- Private cloud deployment
- Regular system deployment
- Annual technical support

Best For :
Flexible budgeting, phased rollouts

NumOps

Annual Model License (Per-Device)

- Annual usage license
- Private cloud deployment
- Includes SDK & API (per computer count)

Best For :
Long-term planning, phased deployment needs

Edge AI Solutions | WinEdge

■ One deployment, infinite scalability



Construction Site Safety

Hazardous behavior is hard to spot and manual monitoring can't keep up.



Solution

Centralized Edge Management

- Simple Edge architecture deployment
- One-click model updates & version control
- Multi-device real-time monitoring & management
- Centralized dashboard for inference results



Glass Defect Inspection

Manual inspection is inconsistent and prone to missing micro-defects.

Solution

Visual AI Edge Deployment

- Multi-camera image capture with AI model deployment
- Supports continuous inspection without downtime
- Post-processing with automated pass/fail decisions
- Defect image archiving & traceability



School Safety Monitoring

Limited staff-to-student ratio makes full supervision a challenge.

Solution

Object Tracking & Zone Counting

- Prompt-based & bounding-box target tracking
- ROI zone entry/exit counting
- Post-inference event output
- Multi-camera device integration



Process Anomaly Detection

Unpredictable anomalies lead to costly downtime.



Solution

Real-Time Edge Data Monitoring

- Database & industrial protocol connectivity
- Real-time dashboard for key metrics
- Data query & alert configuration
- Live equipment status at a glance

WinEdge

Edge AI Inference for Every Industry

Seven Core Modules, End-to-End AI at the Edge



AI Inference Engine

- Image classification
- Object detection
- Image segmentation



Data Analytics

- Regression / Classification
- Time Series Analysis
- Anomaly Detection



Object Tracking & Counting

- Prompt-based detection
- ROI-based counting
- Path tracking



Edge Deployment & Management

- Plug-and-play setup
- Deploy & update
- Multi-device monitoring



Real-Time Dashboard & Integration

- Multi-chart visualization
- SQL query & filtering
- Multi-source connectivity



Post-Processing & Output

- NMS & threshold configuration
- Logic-based path tracking
- Real-time display, data export & I/O triggers



Integration & Extensibility

- Multi-I/O connectivity
- Model pipeline integration
- Custom developer modules

Powerful Features to Accelerate AI Deployment

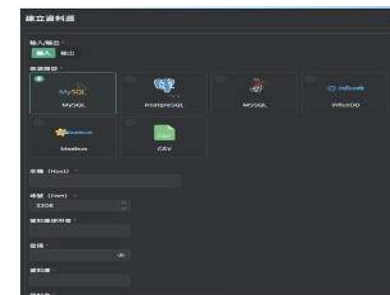
Smart Dashboard

Flexible dashboard module with auto-generated layouts and drag-and-drop arrangement. Trend charts, pie charts, tables, and text — tailored to any monitoring need.



Data Integration

Supports relational databases (MySQL, MSSQL, PostgreSQL), time-series databases (InfluxDB), industrial protocols (Modbus TCP), and a wide range of video sources.



Edge Computing

Built on edge computing architecture — runs reliably without cloud or internet dependency.

Model Management

Integrates with NumOps and AIWinOps for end-to-end AI model lifecycle management. Supports automated deployment, version updates, parameter configuration, and recipe management.

Equipment Monitoring

Once devices are deployed, monitor and manage them in real time to ensure smooth operation under live data conditions. Tracks hardware resources including CPU, GPU, and memory usage, along with detailed info like connection status, IP address, and port numbers.



Edge AI Inference | WinEdge

Versatile Camera Support

To meet the diverse needs of industry applications, WinEdge supports the following camera devices:

- Industrial Camera
- Line Scan Camera
- IP Camera (RTSP protocol required)
- Webcam
- File

	Industrial Camera	Webcam	IP Camera (2MP)	Image Folder
				
Model	Full industrial camera series	Model-dependent	Model-dependent	Windows / Linux
Resolution	Model-dependent	Model-dependent	1920 px × 1080 px	—
Capture Speed	Model-dependent	Model-dependent	—	—
Interface & Sensor	GigE, Model-dependent	GigE, Model-dependent	GigE 1/2.8"	—

System Requirements

Software Requirements

Item	Version
Operating System	Ubuntu Focal Fossa 22.04 LTS (64-bit) or higher
NVIDIA GPU Driver	580.x or higher
Docker Engine - Community	24.x or higher

Hardware Requirements

Item	Recommended Requirements
CPU	6 cores / 12 threads or more
GPU(Optional)	VRAM 8GB or more Compute Capability 7.5 or higher
Memory	16 GB / 32 GB (recommended)
Storage	1 TB SSD or more

CPU & GPU Configuration Recommendations

Entry-Level

For basic image recognition tasks such as classification and object detection.

- CPU: Intel Core i5-12400 or AMD Ryzen 5 5600X
- GPU: NVIDIA GeForce RTX 4060 or RTX 4070
- Recommended Models: APLEX AVS-530, NVIDIA GB10 Chip



APLEX AVS-530



NVIDIA GB10

Mid-Tier

For image segmentation, deep learning training and inference, object detection, and image classification.

- CPU: Intel Core i7-12700 or AMD Ryzen 7 5700GG
- GPU: NVIDIA GeForce RTX 4080 or RTX 4090
- Recommended Models: APLEX AVS-553, APLEX AVS-P710, NVIDIA GB10 Chip



APLEX AVS-553



APLEX AVS-P710

High-End

For large-scale deep learning training and multi-project image recognition and inference.

- CPU : Intel Xeon Series Server Processor
- GPU : NVIDIA A100 or H100 Enterprise GPU
(Available only with compatible rack server systems)
- Recommended Models : Custom Configuration

Licensing Options

WinEdge

Perpetual License (On-Premise)

- Perpetual usage license
- Private cloud deployment
- Complete data ownership
- Lifetime technical support

Best For :
Long-term use, enterprises
with sensitive data

Knowledge Hub Solutions | WinChat

AI-powered knowledge that flows across your organization



Knowledge Management

Finding documents is time-consuming and knowledge transfer is difficult.



Solution

AI-Powered Knowledge Integration

- Multi-format document parsing & indexing
- Semantic matching for precise query results
- Source-cited references to reduce hallucination
- Less manual searching, stronger knowledge sharing



Intelligent Onboarding

Scattered resources make onboarding slow and inconsistent.

Solution

Digital Training Assistant

- Dedicated organizational knowledge base
- Consolidated SOPs, guidelines & technical manuals
- 24/7 conversational Q&A with precise answers
- Source-linked responses with full traceability



Customer Service Optimization

Responses depend on experience and lack consistency.

Solution

Consistent Service Experience

- Custom parameters for precise, accurate responses
- AI-generated standardized reply suggestions
- Integrated product, process & FAQ knowledge
- Feedback loop for continuous quality improvement



Compliance Search

Regulations are complex and manual review is error-prone.

Solution

Intelligent Compliance Matching

- Threshold & keyword-weighted precision search
- Instant results with source citations
- Multi-turn dialogue for deeper understanding
- Minimized misinterpretation risk



WinChat

The LLM Platform Built for Every Industry

Six Capabilities Powering Enterprise RAG



Document Intelligence

- Extract unstructured data
- Works across document formats



No-Code Development

- Intuitive web-based interface
- Unified resource & project control



Multi Knowledge Base

- Org-specific knowledge bases
- Supports diverse data types



Hallucination Reduction

- Key citations with full traceability
- Dramatically lowers hallucination



System Integration

- Ready-to-use Web APIs
- Flexible custom integration



Private Cloud Deployment

- Keeps sensitive data in-house
- Private & secure access

From Q&A to AI-Powered Decisions

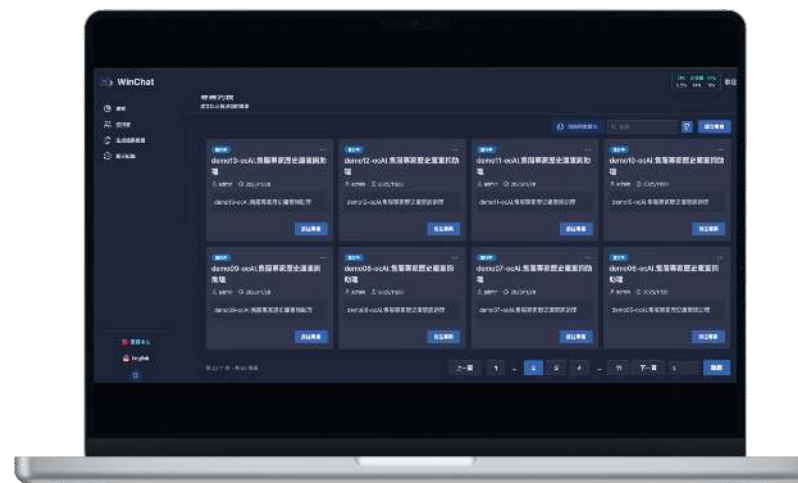
RAG Chat System | Turning Knowledge Into Conversation

WinChat pairs LLMs with RAG to turn your policies, workflows, and documents into a live conversational assistant. Deep document understanding and smart retrieval mean every answer is accurate, sourced, and traceable — cutting hallucinations and sharpening decisions.

AI Agent | From Assistant to Decision-Maker

Built on the same RAG foundation, WinChat adds vision and numerical AI to create Agents that perceive, respond, and support real decisions. Backed by private-cloud deployment and flexible architecture — your own AI platform, built to fit.

Enterprise AI Hub, Powered by Your Knowledge



Project Management — The Command Center

The core entry point of WinChat — create, manage, and organize all your projects, with fast switching and setup through one clean interface.

Key Features :

- Build dedicated knowledge bases per project
- Generate project files and chat logs
- Filter by time, knowledge base, or status
- Edit or delete existing projects

Knowledge Base — The Brain of Your Enterprise

Powered by RAG (Retrieval-Augmented Generation), WinChat turns enterprise documents into searchable knowledge — delivering precise, trustworthy AI responses across multiple formats.

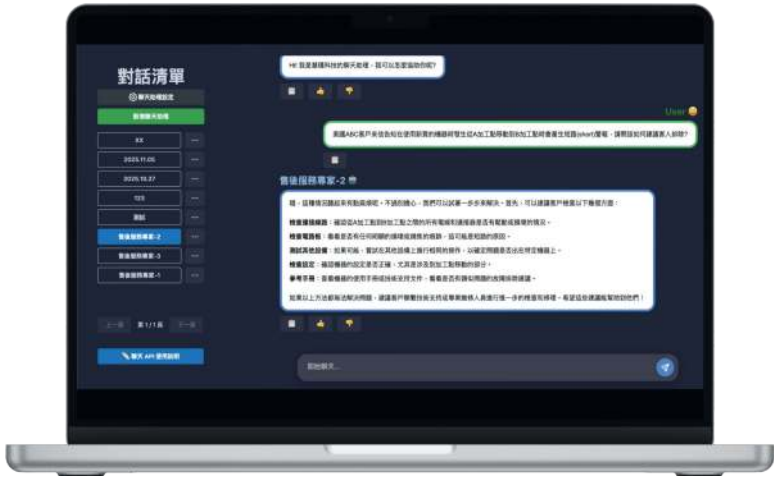
Supported Formats:

PDF | Word | Excel

Key Features :

- Upload, create, edit, and manage knowledge base content
- Smart chunking, keyword targeting, and Top-K tuning
- Real-time preview of retrieval results and accuracy
- Continuously improves response quality and reduces errors

Dedicated AI Assistant for Precise, Reliable Answers



Chat Assistant — Build Your Custom AI

Build dedicated chat assistants tailored to your needs — set the persona, connect the right knowledge base, and match the use case before every conversation, so every answer stays precise and reliable.

Key Features :

- Matches industry-specific needs for accurate responses
- Effectively reduces AI hallucinations
- Gives your assistant a distinct personality and expertise
- Adapts tone to fit the context

Q&A Chat — RAG-Powered Knowledge Retrieval

By integrating your enterprise knowledge base with RAG + LLM architecture, WinChat retrieves the right knowledge and generates precise answers in real time — making Q&A faster, more accurate, and enterprise-ready.

Key Features :

- Full history of conversations and Q&A logs
- File upload with document-based queries
- Generates instant answers, reducing manual workload

Highlights:

- Organized by project categories
- Every answer backed by verifiable source documents
- Learns from user feedback to continuously improve responses

System Requirements

Hardware Requirements

Item	Minimum Requirements	Recommended Requirements
CPU	12 cores or more 3.5GHz or higher	20 cores or more 3.5GHz or higher
GPU	VRAM 24GB or more NVIDIA GeForce RTX 4090 (24GB)	VRAM 96GB or more NVIDIA RTX Pro 6000 Blackwell (96GB)
Memory	128GB or more	256GB or more
Storage	1TB SSD + 4TB HDD or more	2TB SSD + 8TB HDD or more
USB Port	USB 2.0 / 3.0 (required for security dongle)	
Supported Model (LLM)	Supports gpt-oss-20b or LLMs of similar parameter scale	Supports gpt-oss-120b or LLMs of similar parameter scale
Recommended Models	APLEX AVS-553、APLEX AVS-P710、NVIDIA GB10 Chip	



APLEX AVS-553



APLEX AVS-P710



NVIDIA GB10

Software Requirements

Item	Version
Operating System	Ubuntu 24.04 LTS (64-bit) or higher
NVIDIA GPU Driver	535.154.05 or higher
Docker Engine - Community	20.10.17 or higher

Licensing Options

WinChat

Perpetual License (On-Premise)

- Perpetual usage license
- Full GPU server setup
- Private cloud deployment
- Complete data ownership
- Lifetime technical support

Best For :
Long-term use, enterprises with sensitive data

WinChat

Annual System License (On-Premise)

- Annual usage license
- Full GPU server setup
- Private cloud deployment
- Regular system deployment
- Annual technical support

Best For :
Flexible budgeting, phased rollouts